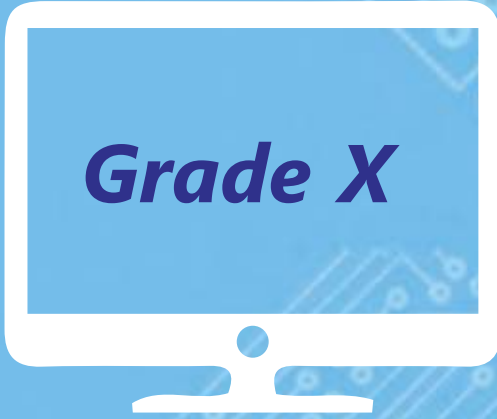


بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ
شروع اللہ تعالیٰ کے نام سے جو بڑا مہربان نہایت رحم والا ہے

Practical Notebook

COMPUTER SCIENCE



**PUNJAB CURRICULUM AND
TEXTBOOK BOARD, LAHORE**

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Computer Science X for session _____

as per syllabus.

Signature
Computer Science
Teacher

Signature
Head of the Department

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PREFACE

Computer science curricula have been evolving at a rapid pace to keep up with the developments in the IT field. With the onset of the computer, experts and educators are faced with the challenging task of developing courses to teach emerging computer science concepts in schools and colleges. Such an undertaking requires adequate literature and explanation of key computer concepts at an introductory level. It is the main thrust of this Computer Practical Notebook.

This Practical Notebook has been designed to teach the students of Class X to grasp the fundamentals of computers by blending key computer concepts together in a hands-on learning environment. This Practical Notebook has two parts:

Part 1: BASIC Programming Language

In the Part 1, students are introduced to the BASIC programming language. It is a useful programming language to teach beginners the basic concepts of programming. It will enhance the creativity skill amongst the students.

Part 2: Microsoft Word

In the Part 2, students are taught Microsoft Word, an important application package. Word is a commonly used application package used to create and manage documents of various categories.

All the practicals are explained in a user friendly manner. The student feels very easy to follow the step by step procedure given for each practical. The whole book is illustrated with high resolution real images for more clarity and understanding.

COMPUTER LAB RULES FOR STUDENTS

To maintain a quiet, clean and comfortable environment in the computer lab, all the students are required to follow the rules as mentioned below:

A. AVOID

- ⊙ Eating and drinking.
- ⊙ Making a noise.
- ⊙ Downloading data without authorization.
- ⊙ Installing personal software on computers including games.
- ⊙ Copying or transferring any software/data.
- ⊙ Plugging a personal USB/Card/CD or any other device into the computers.
- ⊙ Interfering with or disturbing other students.
- ⊙ Propagating computer viruses, spamming and offensive material.
- ⊙ Tampering with, attempting to repair, or abusing the lab equipment.
- ⊙ Bringing of mobile phones and other multimedia devices.
- ⊙ Writing on tables/computers.
- ⊙ Viewing unwanted material, etc.

B. Students are required to bring to the computer lab only the following items.

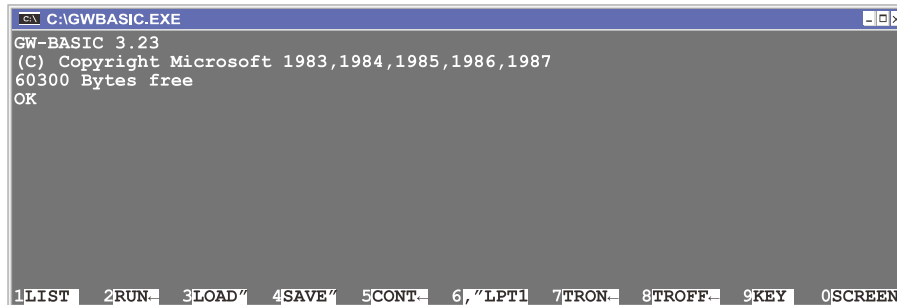
- ⊙ Textbooks
- ⊙ Practical Notebooks
- ⊙ Class work Notebooks
- ⊙ Pens

Important: All the students are required to follow the above mentioned rules for computer lab.



GW BASIC stands for **G**ee **W**hiz **B**eginner's **A**ll purpose **S**ymbolic **I**nstruction **C**ode. It is one of the high level languages. BASIC was initially developed to make it convenient for people to communicate with computers. With the passage of time, millions of people have quickly learned BASIC. It has now become one of the major languages for beginners and learners.

The GW BASIC provide an Integrated Development Environment (IDE) to create, edit, save, load and run a program. BASIC IDE (editor) is given below:



COMMANDS

Commands are executable instructions, operated in direct mode or command level of the editor. They are related with the program management.

Some important GW BASIC Commands and their usage

COMMAND	USAGE
AUTO	Automatically generates line numbers
CLS	Clears the screen.
NEW	Clears the memory.
SAVE	Saves the program on disk.
LIST	Lists all or part of the program currently loaded in memory.
LOAD	Loads a program file from disk into main memory.
FILES	Displays the list of files from a specified drive.
RUN	Executes the program currently loaded in memory.
EDIT	Edits a specified program line currently loaded in memory.
CLEAR	Clears files, variables, disk buffers and sound.

DELETE	Deletes a specified program line in current memory.
NAME	Changes the name of a file.
RENUM	Renumbers the program lines in RAM.
KILL	Deletes a program file from disk.
SYSTEM	Exits from GW-BASIC and returns control to operating system.

STATEMENT

- A statement is a group of BASIC keywords or reserve words.
- Statement is always preceded by line number.
- Statements work in indirect mode or programming mode.

Some important BASIC Statements and their usage

STATEMENT USAGE

REM	Non Executable statement to add remarks.
PRINT	Displays the output of program on monitor.
INPUT	Inputs the numeric or string data from user to the variable during program execution.
READ	Reads the data values from DATA statements and assign them to variables read by READ statement.
RESTORE	Reassigns data values again to the variables which are already read by READ statement.
DATA	Provides data values to the variables read by READ statement.
GOTO	Transfers control unconditionally from one statement to another.
IF-THEN-ELSE	Transfers the control conditionally.
FOR – NEXT	Runs the statements repeatedly for specific numbers of times.
WHILE – WEND	Repeats the statements untill a given condition remains true.
DIM	Declares a string or numeric array.
GOSUB	Transfers the control to subroutine.
RETURN	Transfers the control back to GOSUB statement.
SCREEN	Selects the screen mode for required display.
COLOR	Selects the color.
LINE	Draws a line and boxes.
CIRCLE	Draws a circle or oval shape.
DRAW	Draws shapes other than circle and oval.

ALGORITHM

An algorithm is a step by step procedure for solving a problem. Algorithms can be expressed in any language, from natural languages like English or Urdu to programming languages like FORTRAN or BASIC. We also use algorithms in our daily life. For example, a recipe for baking a cake is an algorithm.

FLOWCHART

A **flowchart** is a Pictorial representation of an algorithm. Different symbols are used to show different operations according to program logic. Flowcharts are used in analyzing, designing, documenting or managing a process or program in various fields. Some major symbols and their description is as under.

Start / Stop

In flowcharts, the terminal symbol is used for start or stop. This symbol tells the user where the flowchart begins and ends. To show the start of the flowchart, the user will fill this shape with words like Start or Begin.

To show the ending point of the flow chart, this shape is filled with words like Stop or End.

Sometimes this shape is drawn as an oval as shown on right side.

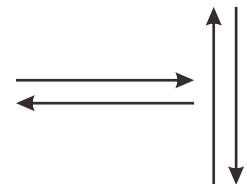
Start / Begin

Stop / End

Start / Begin

Flow Lines

The flow lines determine the flow of data through flowchart. Flow lines are usually drawn from top to bottom or left to right.



Processing

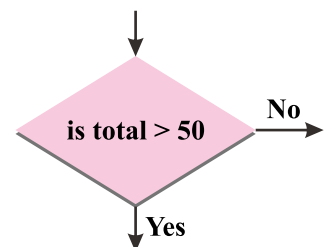
In flowcharts, the symbol of rectangle is used to show a process, task, action or operation.

Compute the Sum

Decision

In flow chart, the diamond symbol is used for decision based on a condition. The arrows flowing from the decision symbol are usually labeled with Yes, No or True, False.

This symbol has one input and two output points.



Input / Output

A parallelogram symbol is used to show input or output of a program in a flow chart.

Receive data

Generate report

Connector

A circle symbol is used as connector in flowcharts. A connector is used to connect flow lines coming from different directions to avoid their intersection or cross over.

On Page / Off Page Connector

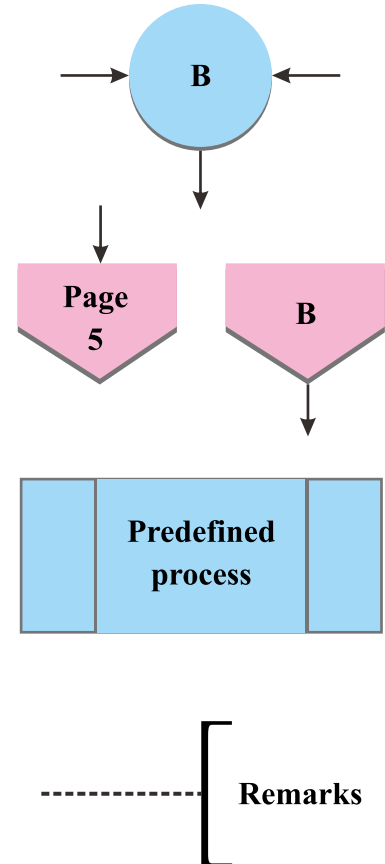
This pentagon symbol means the flow continues on another page. A letter or page number in the symbol tells you where to go.

Predefined Process

This bordered rectangle symbol refers to a process that is defined elsewhere. This symbol may be used to show built in or user defined functions.

Remarks/Annotation

This symbol is used to add comments or additional descriptive text to a software flowchart. A dotted line should extend from the comment to the symbol it refers.





1. Algorithm

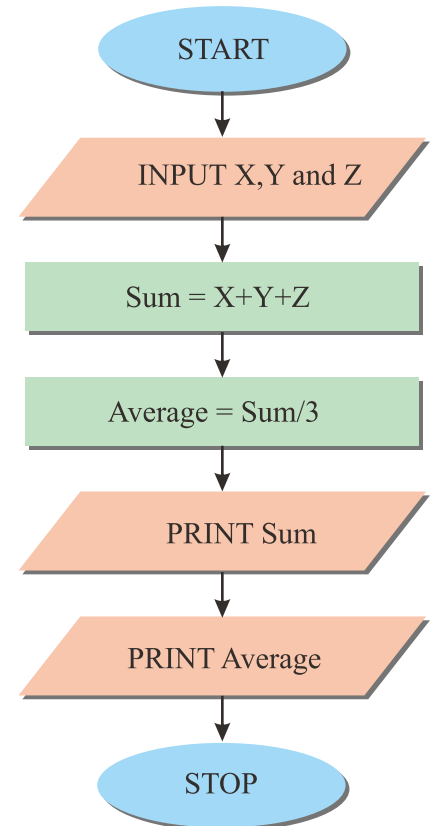
STEP 1 START
STEP 2 INPUT X,Y and Z
STEP 3 COMPUTE $\text{Sum} = X + Y + Z$
STEP 4 COMPUTE $\text{Average} = \text{Sum}/3$
STEP 5 PRINT Sum
STEP 6 PRINT Average
STEP 7 STOP

3. Program

```

10 CLS
20 REM Program to find sum and average of three numbers
30 INPUT "Enter the first number";X
40 INPUT "Enter the second number";Y
50 INPUT "Enter the third number";Z
60 LET SUM = X+Y+Z
70 AVG = SUM/3
80 Print "Sum of three numbers = ";SUM
90 Print "Average of three numbers = ";AVG
100 END
  
```

2. Flowchart



4. Output

```

C:\GWBASIC.EXE
Enter the first number? 45
Enter the second number? 60
Enter the third number? 15
Sum of three numbers = 120
Average of three numbers = 40
Ok
  
```



1. Algorithm

STEP 1 START
STEP 2 INPUT N
STEP 3 COMPUTE Cube of a number (N^3)
STEP 4 PRINT Cube of a number
STEP 5 STOP

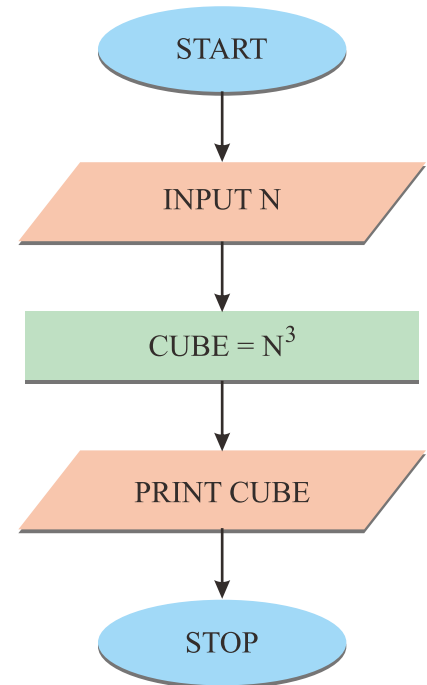
3. Program

```
10 CLS
20 INPUT "Enter any number";N
30 LET CUBE = N^3
40 PRINT "Cube of a number = ";CUBE
50 END
```

4. Output

```
C:\GWBASIC.EXE
Enter any number? 5
Cube of a number = 125
Ok
```

2. Flowchart





1. Algorithm

STEP 1 START
STEP 2 INPUT L and W
STEP 3 COMPUTE Area of rectangle ($L \times W$)
STEP 4 PRINT Area of rectangle
STEP 5 STOP

3. Program

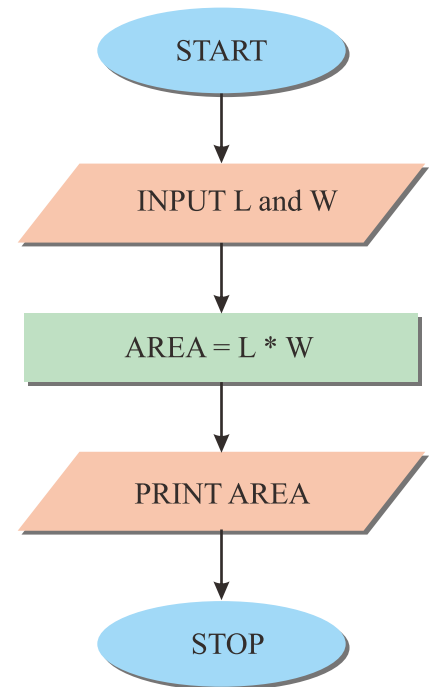
```
10 CLS
20 INPUT "Enter length of rectangle";L
30 INPUT "Enter width of rectangle";W
40 LET AREA = L*W
50 PRINT "The area of rectangle = ";AREA
60 END
```

4. Output

```
C:\GWBASIC.EXE
Enter length of rectangle? 4
Enter width of rectangle? 5
The area of rectangle = 20
Ok
```

1LIST 2RUN 3LOAD 4SAVE 5CONT 6,"LPT1 7TRON 8TROFF 9KEY 0SCREEN

2. Flowchart





1. Algorithm

STEP 1 START

STEP 2 INPUT X, Y and Z

STEP 3 COMPUTE $S = (X + Y + Z) / 2$

STEP 4 COMPUTE Area of triangle $(\sqrt{S * (S - X) * (S - Y) * (S - Z)})$

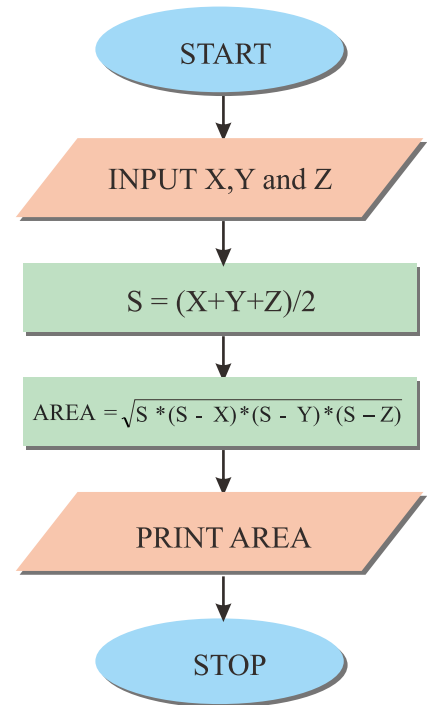
STEP 5 PRINT Area of triangle

STEP 6 STOP

3. Program

```
10 CLS
20 REM Find area of triangle
30 INPUT "Enter length of first side of triangle";X
40 INPUT "Enter length of second side of triangle";Y
50 INPUT "Enter length of third side of triangle";Z
60 LET S = (X+Y+Z)/2
70 AREA = SQR(S*(S-X)*(S-Y)*(S-Z))
80 PRINT "Area of triangle = ";AREA
90 END
```

2. Flowchart



4. Output

```

C:\GWBASIC.EXE
Enter length of first side of triangle? 7
Enter length of second side of triangle? 9
Enter length of third side of triangle? 12
Area of triangle = 31.30495
Ok
1LIST 2RUN- 3LOAD" 4SAVE" 5CONT- 6,"LPT1 7TRON- 8TROFF- 9KEY 0SCREEN
  
```

Practical 1.5

WRITE A PROGRAM TO FIND AREA AND CIRCUMFERENCE OF A CIRCLE

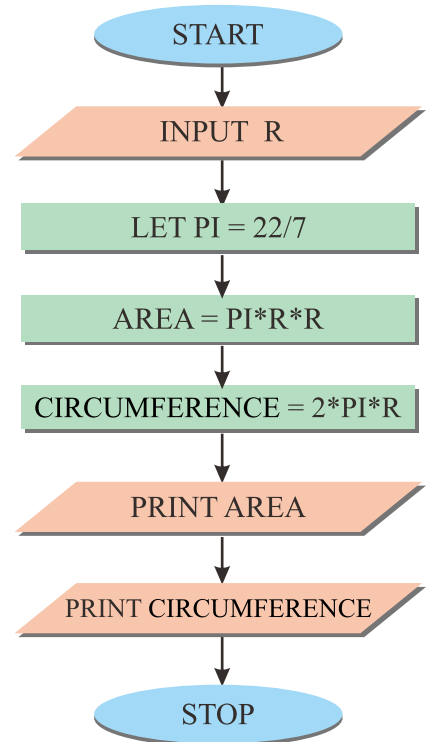
1. Algorithm

STEP 1 START
STEP 2 INPUT R
STEP 3 STORAGE $\pi = 22/7$
STEP 4 COMPUTE Area of circle (πR^2)
STEP 5 COMPUTE Circumference of circle ($2\pi R$)
STEP 6 PRINT Area of circle
STEP 7 PRINT Circumference of circle
STEP 8 STOP

3. Program

```
10 CLS
20 INPUT "Enter radius of circle";R
30 LET PI = 22/7
40 AREA = PI*R*R
50 CIRCUMFERENCE = 2*PI*R
60 PRINT "Area of circle = ";AREA
70 PRINT "Circumference of circle = ";CIRCUMFERENCE
80 END
```

2. Flowchart



4. Output

```
C:\GWBASIC.EXE
Enter radius of circle? 8
Area of circle = 201.1429
Circumference of circle = 50.28572
Ok
```

1LIST 2RUN- 3LOAD" 4SAVE" 5CONT- 6,"LPT1 7TRON- 8TROFF- 9KEY 0SCREEN



1. Algorithm

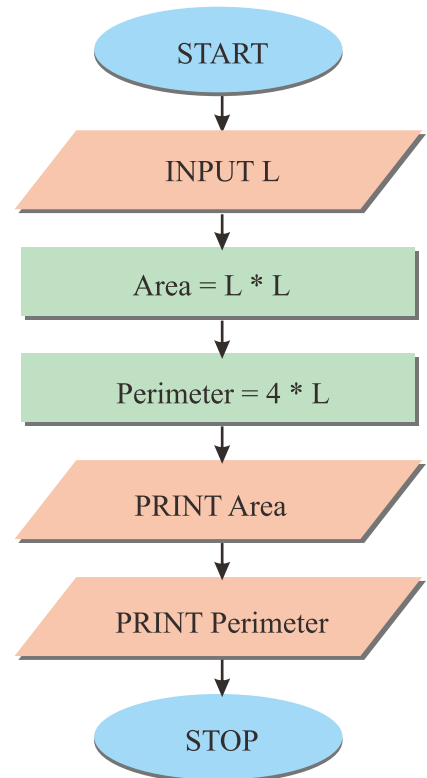
STEP 1 START
STEP 2 INPUT L
STEP 3 COMPUTE Area of square (L^2)
STEP 4 COMPUTE Perimeter of square = $4L$
STEP 5 PRINT Area of square
STEP 6 PRINT Perimeter of square
STEP 7 STOP

3. Program

```

10 CLS
20 INPUT "Enter length of one side";L
30 LET AREA = L*L
40 LET PERIMETER = 4*L
50 PRINT "Area of square = ";AREA
60 PRINT "Perimeter of square = ";PERIMETER
70 END
  
```

2. Flowchart



4. Output

```

C:\GWBASIC.EXE
Enter length of one side? 5
Area of square = 25
Perimeter of square = 20
Ok
  
```



1. Algorithm

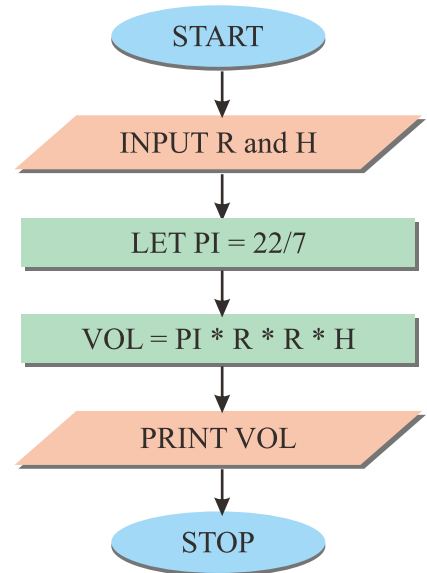
STEP 1 START
STEP 2 INPUT H and R
STEP 3 STORAGE $PI = 22/7$
STEP 4 COMPUTE Volume of cylinder ($PI * R * R * H$)
STEP 5 PRINT Volume of cylinder
STEP 6 STOP

3. Program

```

10 CLS
20 INPUT "Enter height of cylinder";H
30 INPUT "Enter radius of cylinder";R
40 LET PI = 22/7
50 VOL = PI*R*R*H
60 PRINT "Volume of cylinder = ";VOL
70 END
  
```

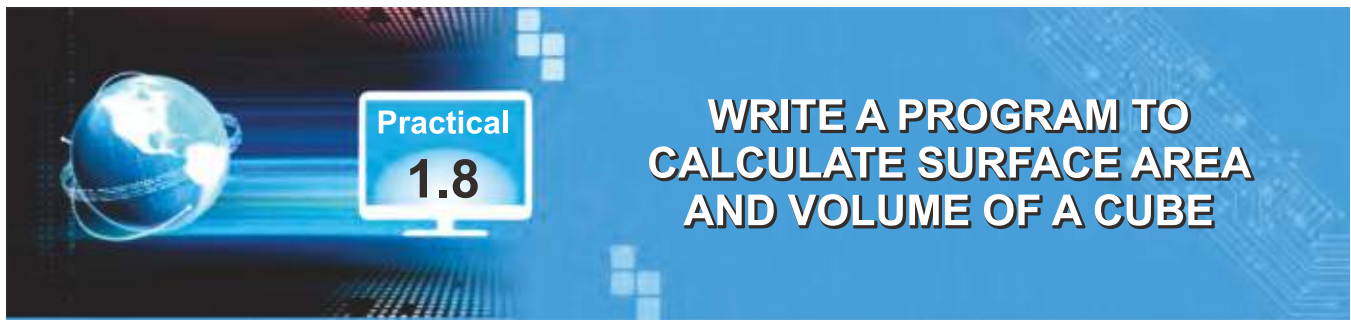
2. Flowchart



4. Output

```

C:\GWBASIC.EXE
Enter height of cylinder? 2
Enter radius of cylinder? 3
Volume of cylinder = 56.57143
Ok
  
```



1. Algorithm

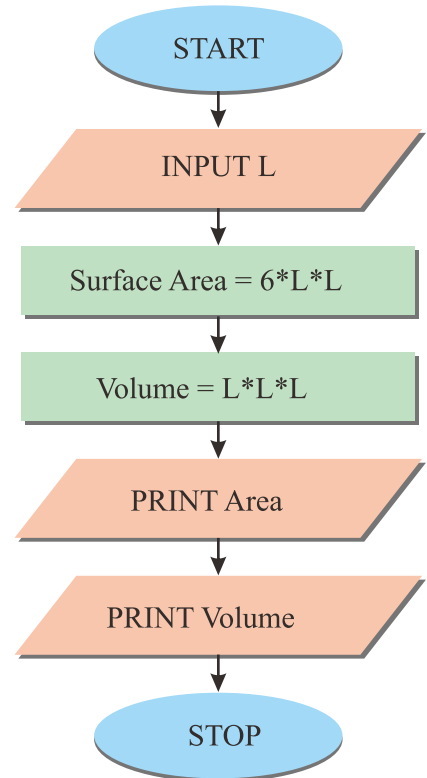
STEP 1 START
STEP 2 INPUT L
STEP 3 COMPUTE Surface area of cube ($6L^2$)
STEP 4 COMPUTE Volume of cube (L^3)
STEP 5 PRINT Surface area of cube
STEP 6 PRINT Volume of cube
STEP 7 STOP

3. Program

```

10 CLS
20 INPUT "Enter length of side of cube";L
30 LET AREA = 6*L*L
40 LET VOLUME = L*L*L
50 PRINT "Surface area of cube = ";AREA
60 PRINT "Volume of cube = ";VOLUME
70 END
  
```

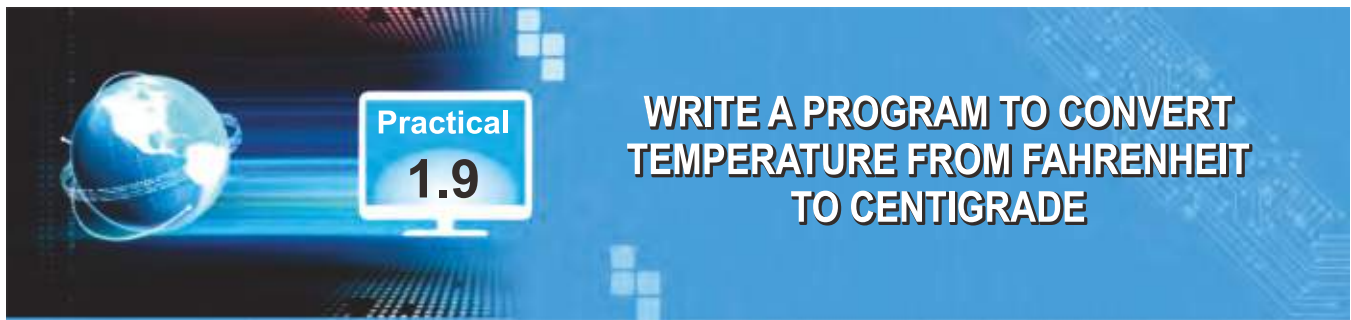
2. Flowchart



4. Output

```

C:\GWBASIC.EXE
Enter length of side of cube? 5
Surface area of cube = 150
Volume of cube = 125
Ok
  
```



1. Algorithm

STEP 1 START
STEP 2 INPUT F
STEP 3 COMPUTE $C = 5/9 * (F - 32)$
STEP 4 PRINT C
STEP 5 STOP

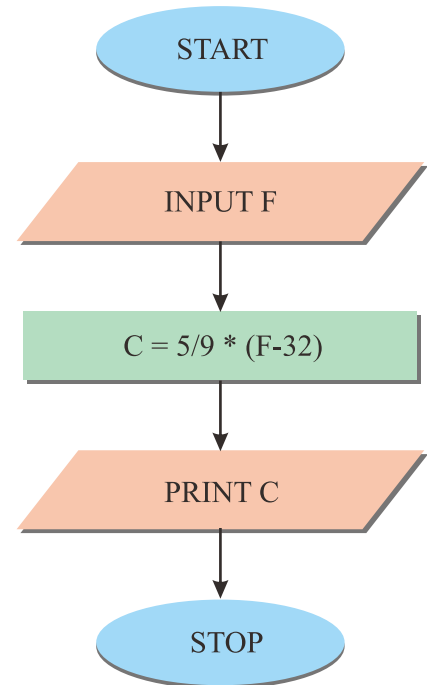
3. Program

```
10 CLS
20 REM Conversion of temperature from fahrenheit to centigrade
30 INPUT "Enter temperature in fahrenheit";F
40 LET C = 5/9*(F-32)
50 PRINT "Temperature in centigrade = ";C
60 END
```

4. Output

```
C:\GW\BASIC.EXE
Enter temperature in fahrenheit? 89
Temperature in centigrade = 31.66667
Ok
```

2. Flowchart



WRITE A PROGRAM TO CONVERT TEMPERATURE FROM CENTIGRADE TO FAHRENHEIT

Practical 1.10

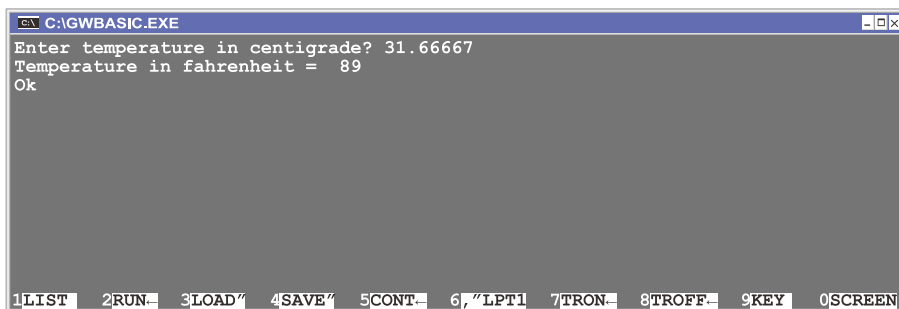
1. Algorithm

STEP 1 START
STEP 2 INPUT C
STEP 3 COMPUTE $F = 9/5 * C + 32$
STEP 4 PRINT F
STEP 5 STOP

3. Program

```
10 CLS
20 REM Conversion of temperature from centigrade to fahrenheit
30 INPUT "Enter temperature in centigrade";C
40 LET F = 9/5*C+32
50 PRINT "Temperature in fahrenheit = ";F
60 END
```

4. Output

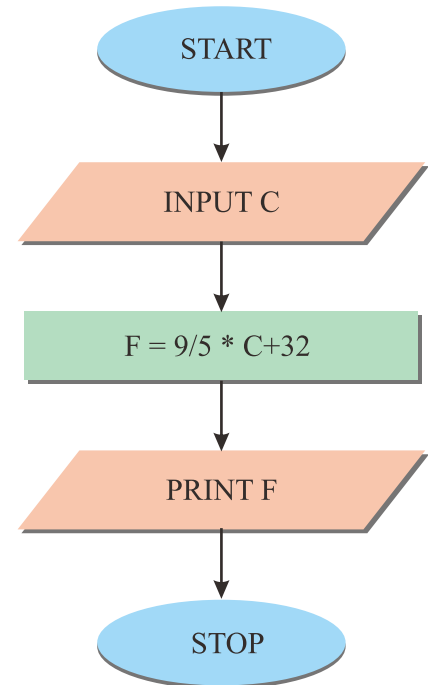


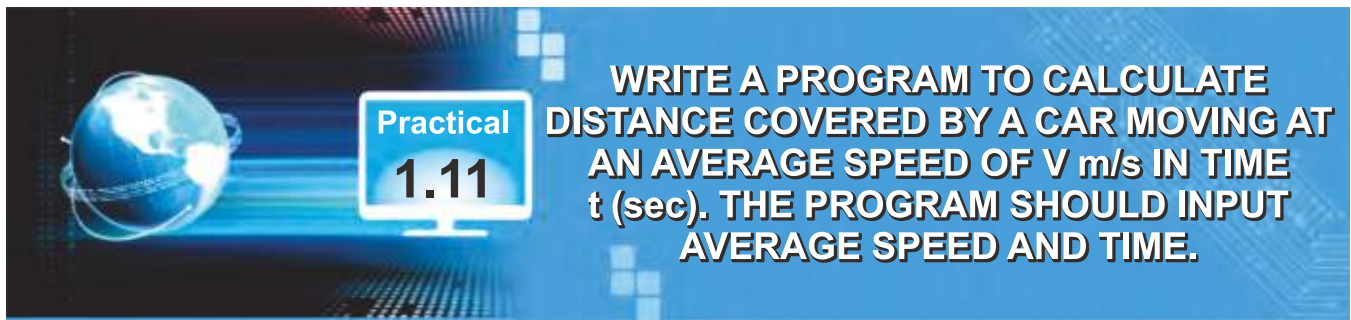
The screenshot shows a window titled 'C:\GWBASIC.EXE'. The text inside the window is as follows:

```
Enter temperature in centigrade? 31.66667
Temperature in fahrenheit = 89
Ok
```

At the bottom of the window, there is a menu bar with the following options: 1LIST, 2RUN, 3LOAD, 4SAVE, 5CONT, 6, "LPT1, 7TRON, 8TROFF, 9KEY, 0SCREEN.

2. Flowchart





1. Algorithm

STEP 1 START
STEP 2 INPUT V and T
STEP 3 COMPUTE Distance covered (VT)
STEP 4 PRINT Distance covered (S)
STEP 5 STOP

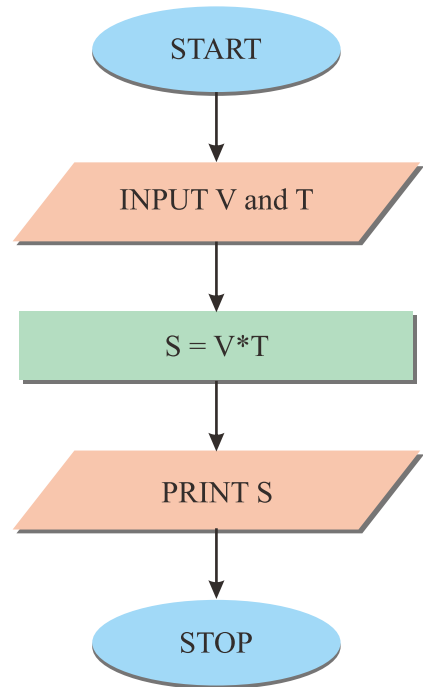
3. Program

```
10 CLS
20 INPUT "Enter speed (m/sec)";V
30 INPUT "Enter time (sec)";T
40 LET S = V*T
50 PRINT "Distance covered in meters = ";S
60 END
```

4. Output

```
C:\GWBASIC.EXE
Enter speed (m/sec)? 8
Enter time (sec)? 9
Distance covered in meters = 72
Ok
```

2. Flowchart





1. Algorithm

STEP 1 START

STEP 2 READ values for A,B,C,D,E,F,G,H,I and J specified in data statement

STEP 3 COMPUTE $SUM = A + B + C + D + E + F + G + H + I + J$

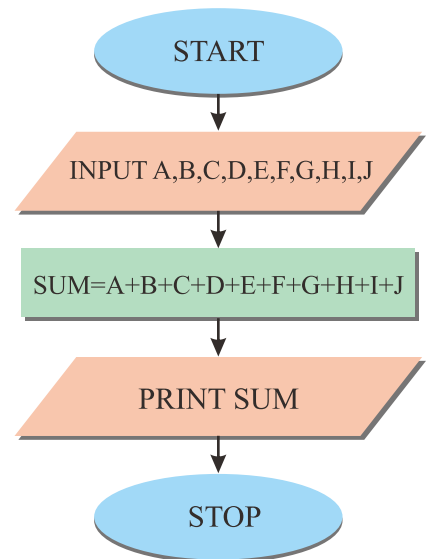
STEP 4 PRINT SUM

STEP 5 STOP

3. Program

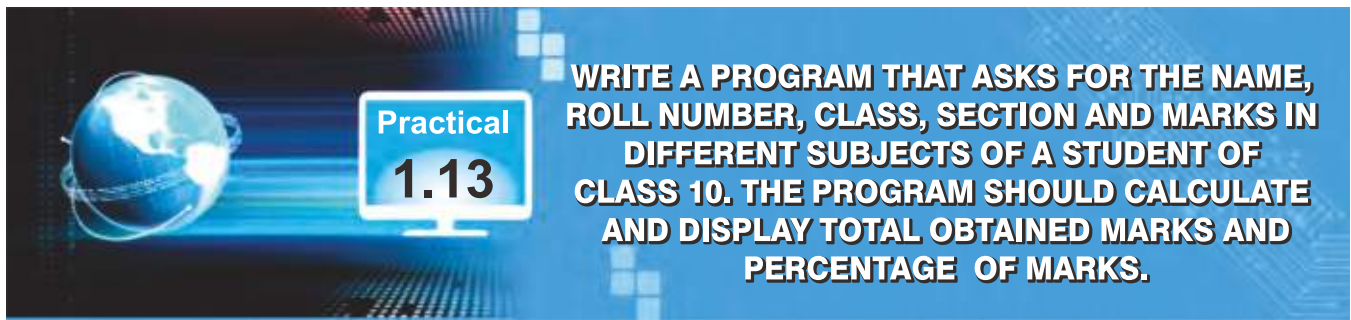
```
10 CLS
20 READ A,B,C,D,E,F,G,H,I,J
30 SUM = A+B+C+D+E+F+G+H+I+J
40 PRINT "SUM = ";SUM
50 DATA 5,10,15,20,25,30,35,40,45,50
60 END
```

2. Flowchart



4. Output





1. Algorithm

STEP 1 START

STEP 2 INPUT values in N,RN,C,S,ENG,UR,PHY,COMP,IS,CHEM,PS,MTH and TOT

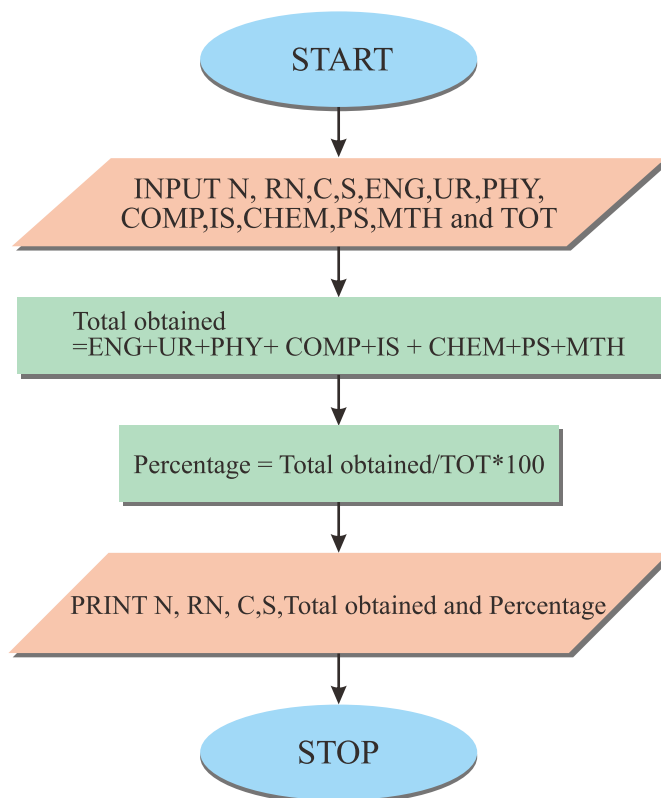
STEP 3 COMPUTE Total Obtained marks (ENG+UR+PHY+COMP+IS +CHEM +PS+MTH)

STEP 4 COMPUTE Percentage (Total Obtained / TOT *100)

STEP 5 PRINT N,RN,C,S, Total Obtained and Percentage marks

STEP 6 STOP

2. Flowchart



3. Program

```

10 CLS
20 INPUT "Enter name";N$
30 INPUT "Enter roll no.";RN
40 INPUT "ENTER class";C$
50 INPUT "ENTER section";S$
60 INPUT "ENTER marks in English";ENG
70 INPUT "ENTER marks in Urdu";UR
80 INPUT "ENTER marks in Physics";PHY
90 INPUT "ENTER marks in Computer";COMP
100 INPUT "ENTER marks in Islamic Study";IS
110 INPUT "ENTER marks in Chemistry";CHEM
120 INPUT "ENTER marks in Pak Study";PS
130 INPUT "ENTER marks in Mathematics";MTH
140 TOBT = ENG + UR + PHY + COMP + IS + CHEM + PS + MTH
150 INPUT "Enter total marks";TOT
160 PER = TOBT/TOT*100
170 PRINT "Name : ";N$
180 PRINT "Roll No. : ";RN
190 PRINT "Class : ";C$
200 PRINT "Section : ";S$
210 PRINT "Total Obtained marks = ";TOBT
220 PRINT "Percentage = ";PER
230 END

```

4. Output

The screenshot shows a window titled 'C:\GWBASIC.EXE'. The program prompts for student information and marks. The user has entered the following data:

Field	Value
Name	SARA
Roll No.	25
Class	Ten
Section	A
English	89
Urdu	90
Physics	67
Computer	70
Islamic Study	67
Chemistry	76
Pak Study	56
Mathematics	69
Total marks	800

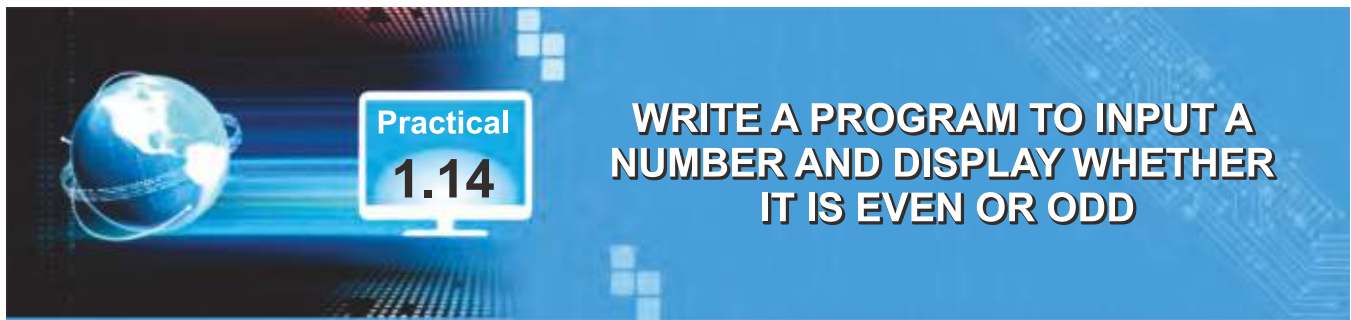
The program then displays the calculated results:

```

Name : SARA
Roll No. : 25
Class : Ten
Section : A
Total Obtained marks = 584
Percentage = 73
Ok

```

At the bottom of the window, there is a menu bar with options: 1LIST, 2RUN, 3LOAD, 4SAVE, 5CONT, 6,"LPT1, 7TRON, 8TROFF, 9KEY, 0SCREEN.



1. Algorithm

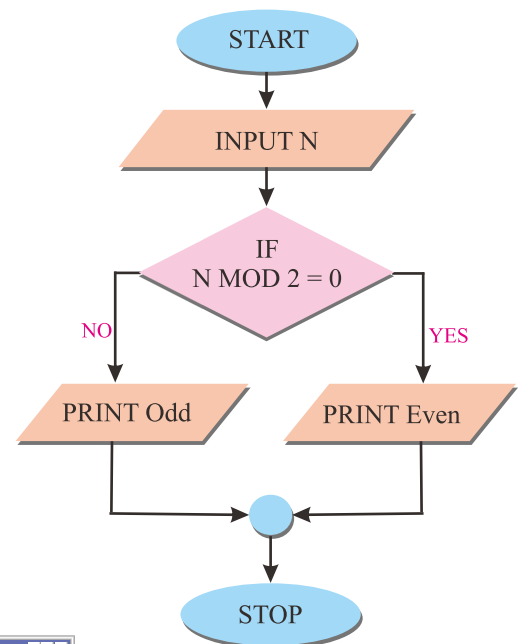
STEP 1 START

STEP 2 INPUT N

STEP 3 DECISION IF $N \text{ MOD } 2 = 0$ THEN PRINT Even ELSE PRINT Odd

STEP 4 STOP

2. Flowchart



3. Program

```
10 CLS
20 INPUT "Enter a number";N
30 IF N MOD 2 = 0 THEN PRINT "Even" ELSE PRINT "Odd"
40 END
```

4. Output

```
C:\GWBASIC.EXE
Enter a number? 65
Odd
Ok
```



1. Algorithm

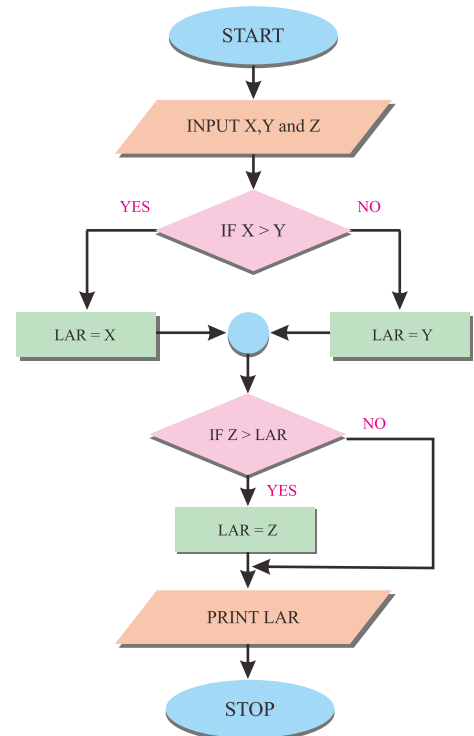
STEP 1 START
STEP 2 INPUT X, Y and Z
STEP 3 DECISION IF $X > Y$ THEN $LAR = X$ ELSE $LAR = Y$
STEP 4 DECISION IF $Z > LAR$ THEN $LAR = Z$
STEP 5 PRINT LAR
STEP 6 STOP

3. Program

```

10 CLS
20 REM Find the largest of three numbers
30 INPUT "Enter the first number";X
40 INPUT "Enter the second number";Y
50 INPUT "Enter the third number";Z
60 IF X > Y THEN LAR = X ELSE LAR = Y
70 IF Z > LAR THEN LAR = Z
80 PRINT "The largest of three numbers = ";LAR
90 END
  
```

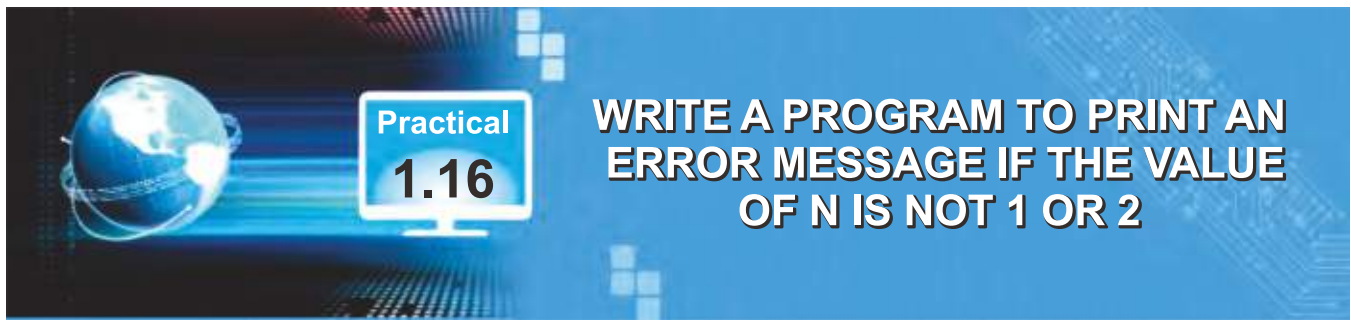
2. Flowchart



4. Output

```

C:\GWBASIC.EXE
Enter the first number? 2
Enter the second number? 3
Enter the third number? 4
The largest of three numbers = 4
Ok
1LIST 2RUN- 3LOAD- 4SAVE- 5CONT- 6,"LPT1 7TRON- 8TROFF- 9KEY 0SCREEN
  
```



1. Algorithm

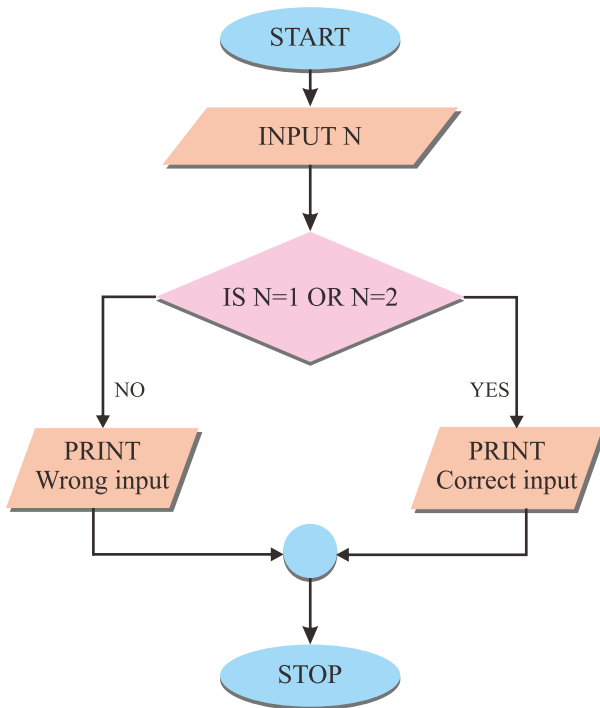
STEP 1 START

STEP 2 INPUT N

STEP 3 DECISION IF $(N = 1)$ OR $(N = 2)$ THEN PRINT Correct input ELSE Wrong Input.

STEP 4 STOP

2. Flowchart



4. Output



3. Program

```
10 CLS
```

```
20 INPUT "Enter any value";N
```

```
30 IF (N = 1) OR (N = 2) THEN PRINT "Correct input" ELSE PRINT "Wrong input"
```

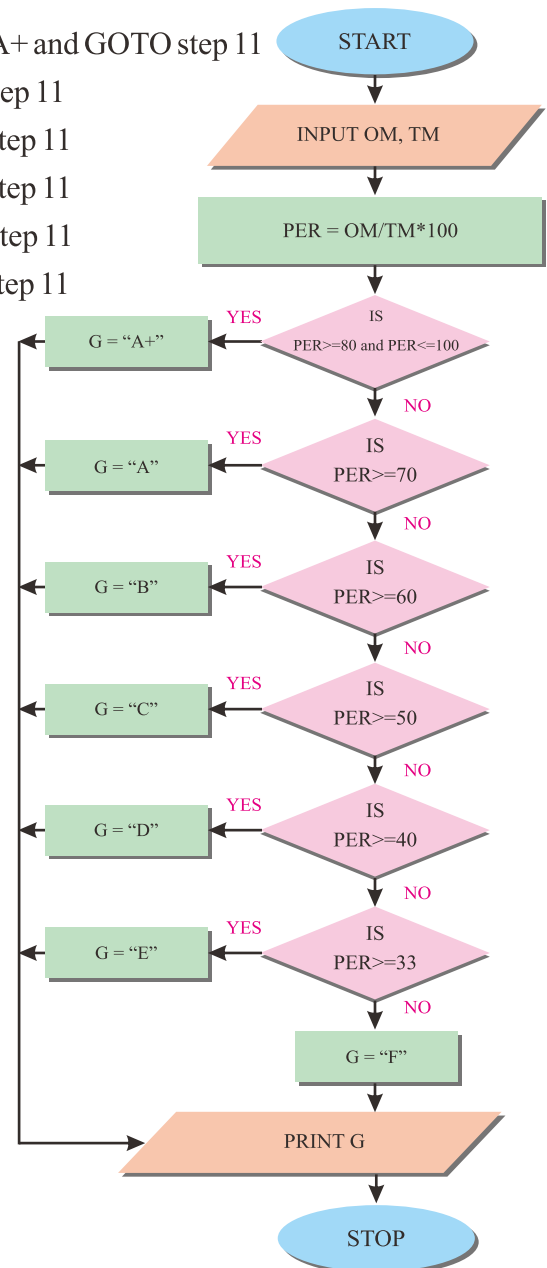
```
40 END
```



1. Algorithm

- STEP1** START
- STEP2** INPUT Obtained marks and Total marks from user.
- STEP3** COMPUTE Percentage ($PER = OM/TM*100$)
- STEP4** DECISION IF $PER \geq 80$ AND ≤ 100 , award grade A+ and GOTO step 11
- STEP5** DECISION IF $PER \geq 70$, award grade A and GOTO step 11
- STEP6** DECISION IF $PER \geq 60$, award grade B and GOTO step 11
- STEP7** DECISION IF $PER \geq 50$, award grade C and GOTO step 11
- STEP8** DECISION IF $PER \geq 40$, award grade D and GOTO step 11
- STEP9** DECISION IF $PER \geq 33$, award grade E and GOTO step 11
- STEP10** Award grade F and GOTO step 11
- STEP11** PRINT Grade awarded (G)
- STEP12** STOP

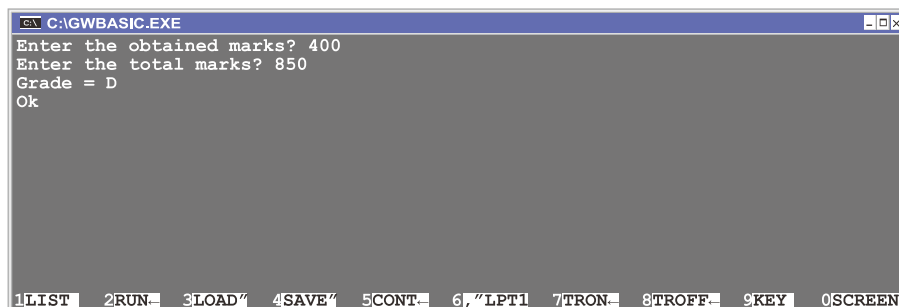
2. Flowchart



3. Program

```
10 CLS
20 REM Calculate grade of a student
30 INPUT "Enter the obtained marks";OM
40 INPUT "Enter the total marks";TM
50 LET PER = OM/TM*100
60 IF PER >= 80 AND PER <= 100 THEN G$ = "A+": GOTO 130
70 IF PER >= 70 THEN G$ = "A": GOTO 130
80 IF PER >= 60 THEN G$ = "B": GOTO 130
90 IF PER >= 50 THEN G$ = "C": GOTO 130
100 IF PER >= 40 THEN G$ = "D": GOTO 130
110 IF PER >= 33 THEN G$ = "E": GOTO 130
120 G$ = "F"
130 PRINT "Grade = ";G$
140 END
```

4. Output



The screenshot shows a window titled "C:\GWBASIC.EXE". The text inside the window is as follows:

```
Enter the obtained marks? 400
Enter the total marks? 850
Grade = D
Ok
```

At the bottom of the window, there is a menu bar with the following options: 1LIST, 2RUN, 3LOAD, 4SAVE, 5CONT, 6,"LPT1", 7TRON, 8TROFF, 9KEY, 0SCREEN.



1. Algorithm

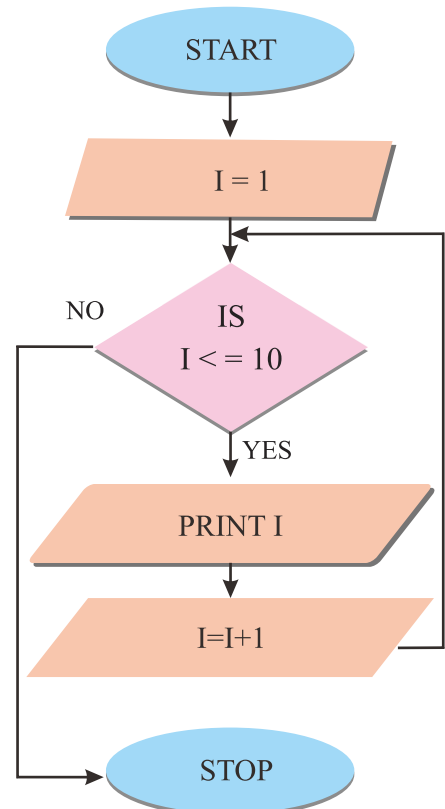
STEP 1 START
STEP 2 STORAGE $I = 1$
STEP 3 DECISION IS $I \leq 10$ IF FALSE THEN GOTO STEP 6
STEP 4 PRINT I
STEP 5 COMPUTE $I = I + 1$
STEP 6 STOP

3. Program

```

10 CLS
20 FOR I = 1 TO 10
30 PRINT I
40 NEXT I
50 END
  
```

2. Flowchart



4. Output



1. Algorithm

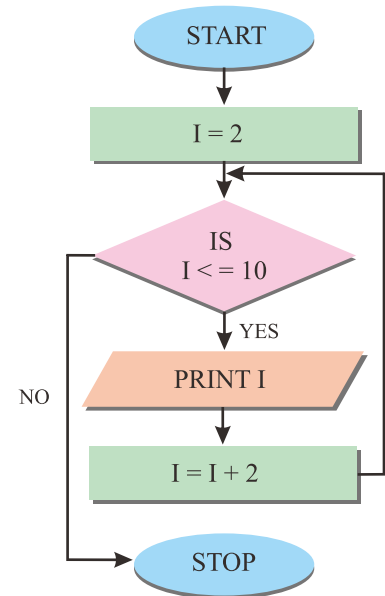
STEP 1 START
STEP 2 STORAGE $I = 2$
STEP 3 DECISION IS $I \leq 10$ IF FALSE THEN GOTO STEP 7
STEP 4 PRINT I
STEP 5 COMPUTE $I = I + 2$
STEP 6 GOTO STEP 3
STEP 7 STOP

3. Program

```

10 CLS
20 FOR I = 2 TO 10 STEP 2
30 PRINT I
40 NEXT I
50 END
  
```

2. Flowchart



4. Output



1. Algorithm

STEP 1 START
STEP 2 STORAGE $N = 1$
STEP 3 DECISION IS $N \leq 10$ IF FALSE THEN GOTO STEP 7
STEP 4 PRINT N
STEP 5 COMPUTE $N = N + 2$
STEP 6 GOTO STEP 3
STEP 7 STOP

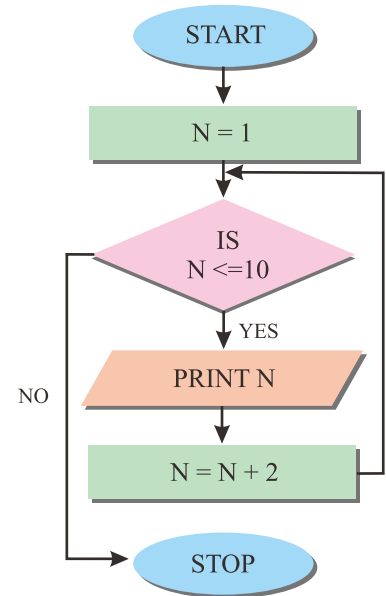
3. Program

```

10 CLS
20 FOR N = 1 TO 10 STEP 2
30 PRINT N
40 NEXT N
50 END
  
```

4. Output

2. Flowchart





1. Algorithm

STEP 1 START
STEP 2 STORAGE SUM = 0
STEP 3 STORAGE I = 2
STEP 4 DECISION IS $I \leq 100$ IF FALSE THEN GOTO STEP 8
STEP 5 COMPUTE $SUM = SUM + I$
STEP 6 COMPUTE $I = I + 2$
STEP 7 GOTO STEP 4
STEP 8 PRINT SUM
STEP 9 STOP

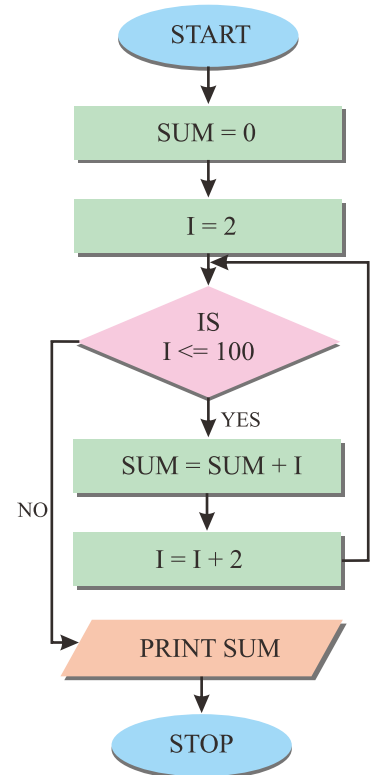
3. Program

```

10 CLS
20 LET SUM = 0
30 FOR I = 2 TO 100 STEP 2
40 SUM = SUM + I
50 NEXT I
60 PRINT "Sum of the series = ";SUM
70 END
  
```

4. Output

2. Flowchart





1. Algorithm

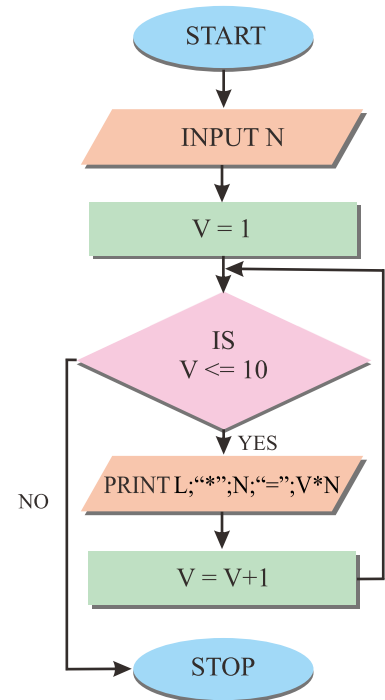
STEP 1 START
STEP 2 INPUT N
STEP 3 STORAGE $V = 1$
STEP 4 DECISION IS $V \leq 10$ IF FALSE THEN GOTO STEP 8
STEP 5 PRINT $V * N = V(N)$
STEP 6 COMPUTE $V = V + 1$
STEP 7 GOTO STEP 4.
STEP 8 STOP

3. Program

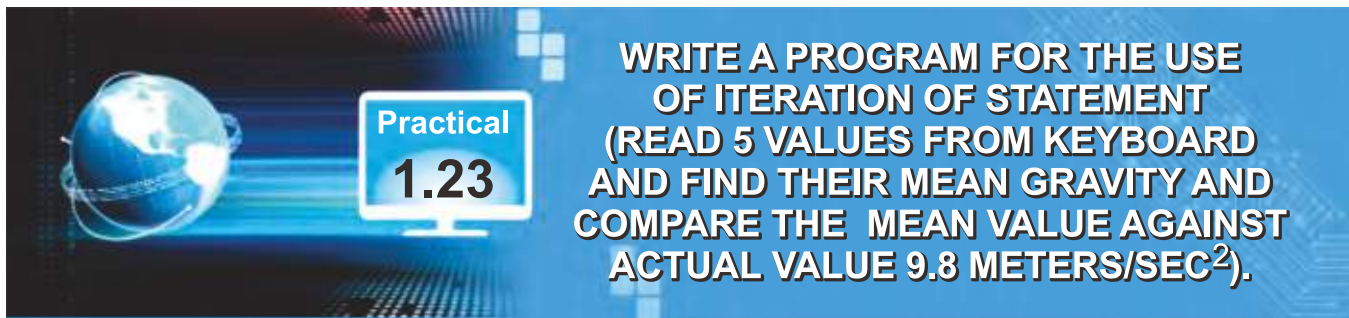
```

10 CLS
20 INPUT "Enter any number";N
30 LET V = 1
40 WHILE V <= 10
50 PRINT N;"*";V;"=";V*N
60 V = V + 1
70 WEND
80 END
  
```

2. Flowchart



4. Output



1. Algorithm

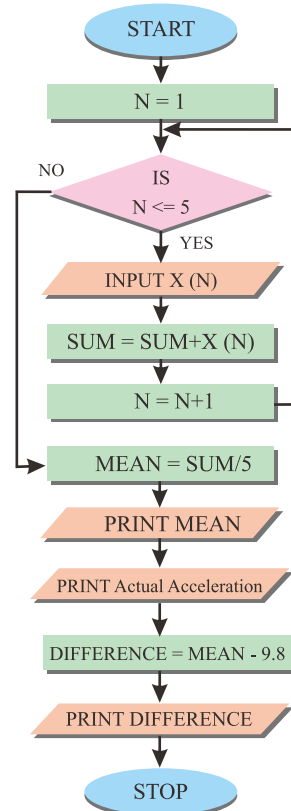
STEP 1 START
STEP 2 STORAGE DIM X(5)
STEP 3 STORAGE N = 1, SUM = 0
STEP 4 DECISION IS N <= 5 IF FALSE THEN GOTO STEP 9
STEP 5 INPUT X(N)
STEP 6 COMPUTE SUM = SUM+X(N)
STEP 7 COMPUTE N = N+1
STEP 8 GOTO STEP 4
STEP 9 COMPUTE MEAN = SUM/5
STEP 10 PRINT MEAN
STEP 11 PRINT Actual Acceleration
STEP 12 COMPUTE DIFFERENCE = MEAN - 9.8
STEP 13 PRINT Difference
STEP 14 STOP

3. Program

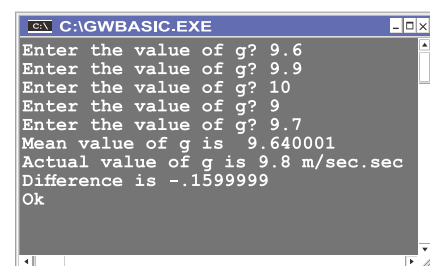
```

10 CLS
20 DIM X(5)
30 FOR N=1 TO 5
40 INPUT "Enter the value of g";X(N)
50 LET SUM=SUM+X(N)
60 NEXT N
70 MEAN = SUM/5
80 PRINT "Mean value of g is ";MEAN
90 PRINT "Actual value of g is 9.8 m/sec.sec"
100 LET DIFFERENCE=MEAN-9.8
110 PRINT "Difference is ";DIFFERENCE
120 END
  
```

2. Flowchart



4. Output



```

C:\GW BASIC.EXE
Enter the value of g? 9.6
Enter the value of g? 9.9
Enter the value of g? 10
Enter the value of g? 9
Enter the value of g? 9.7
Mean value of g is 9.640001
Actual value of g is 9.8 m/sec.sec
Difference is -.1599999
Ok
  
```



1. Algorithm

STEP 1 START
STEP 2 INPUT F
STEP 3 STORAGE N = 1
STEP 4 STORAGE FACT = 1
STEP 5 DECISION IS $N \leq F$ IF FALSE THEN GOTO STEP 9
STEP 6 COMPUTE $FACT = FACT * N$
STEP 7 COMPUTE $N = N + 1$
STEP 8 GOTO STEP 5
STEP 9 PRINT FACT
STEP 10 STOP

3. Program

```

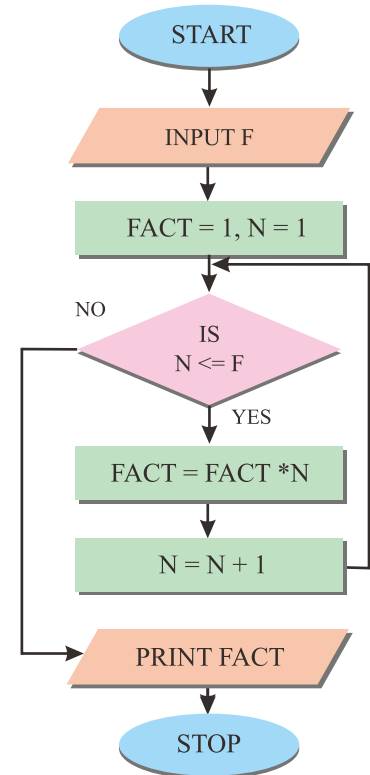
10 CLS
20 INPUT "Enter number for factorial "; F
30 FACT = 1
40 FOR N = 1 TO F
50 FACT = FACT * N
60 NEXT N
70 PRINT "Factorial of a number = "; FACT
80 END
  
```

4. Output

```

C:\GWBASIC.EXE
Enter number for factorial? 6
Factorial of a number = 720
Ok
  
```

2. Flowchart



Practical
1.25

WRITE A PROGRAM TO PRINT THE STAR (*) IN TRIANGULAR FORM

1. Algorithm

STEP 1 START
STEP 2 STORAGE Y = 5
STEP 3 DECISION IS $Y \geq 1$ IF FALSE THEN GOTO STEP 12
STEP 4 STORAGE X = 1
STEP 5 DECISION IS $X \leq Y$ IF FALSE THEN GOTO STEP 9
STEP 6 PRINT *
STEP 7 COMPUTE $X = X + 1$
STEP 8 GOTO STEP 5
STEP 9 PRINT
STEP 10 COMPUTE $Y = Y - 1$
STEP 11 GOTO STEP 3
STEP 12 STOP

3. Program

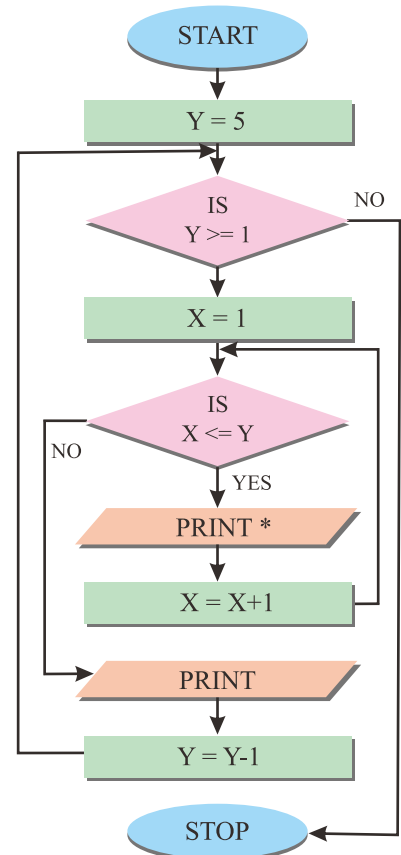
```

10 CLS
20 FOR Y = 5 TO 1 STEP -1
30 FOR X = 1 TO Y
40 PRINT "*";
50 NEXT X
60 PRINT
70 NEXT Y
80 END
    
```

4. Output



2. Flowchart





1. Algorithm

STEP 1 START
STEP 2 STORAGE $A = 1$
STEP 3 DECISION IS $A \leq 4$ IF FALSE THEN GOTO STEP 8
STEP 4 READ Values for $D(A)$ from DATA statement
STEP 5 PRINT $D(A)$
STEP 6 COMPUTE $A = A + 1$
STEP 7 GOTO STEP 3
STEP 8 STOP

3. Program

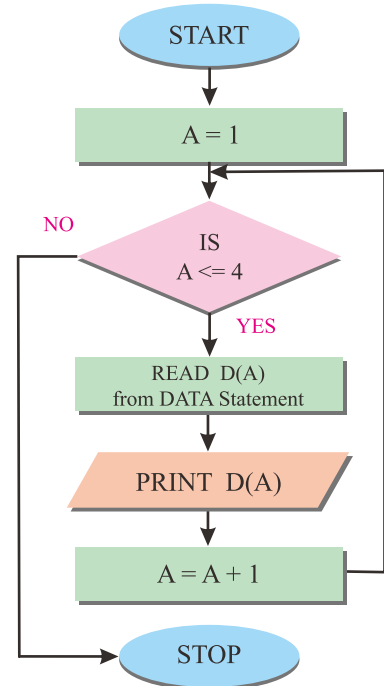
```

10 CLS
20 DIM D$(4)
30 FOR A = 1 TO 4
40 READ D$(A)
50 PRINT D$(A)
60 NEXT A
70 DATA A,B,C,D
80 END
  
```

4. Output



2. Flowchart

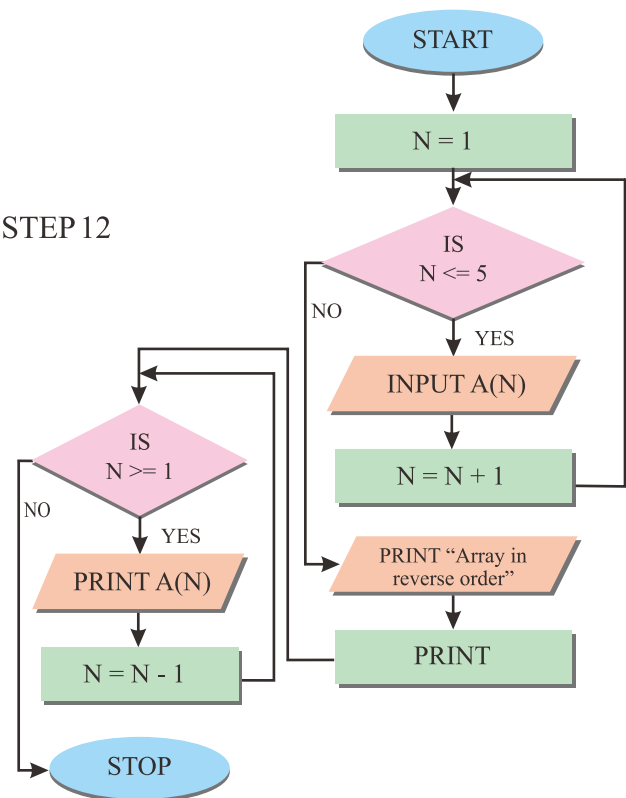




1. Algorithm

STEP 1 START
STEP 2 STORAGE $N = 1$
STEP 3 DECISION IS $N \leq 5$ IF FALSE THEN GOTO STEP 7
STEP 4 INPUT $A(N)$
STEP 5 COMPUTE $N = N + 1$
STEP 6 GOTO STEP 3
STEP 7 PRINT ARRAY IN REVERSE ORDER;
STEP 8 DECISION IS $N \geq 1$ IF FALSE THEN GOTO STEP 12
STEP 9 PRINT $A(N)$
STEP 10 COMPUTE $N = N - 1$
STEP 11 GOTO STEP 8
STEP 12 STOP

2. Flowchart



3. Program

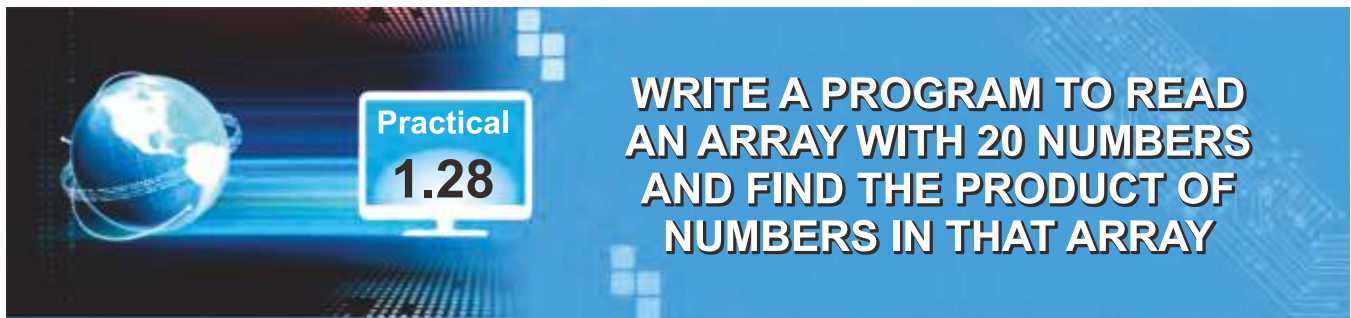
```

10 CLS
20 DIM A(5)
30 FOR N = 1 TO 5
40 INPUT "Enter number = ";A(N)
50 NEXT N
60 PRINT "Array in reverse order"
70 FOR N = 5 TO 1 STEP -1
80 PRINT A(N)
90 NEXT N
100 END
  
```

4. Output

```

C:\GWBASIC.EXE
Enter number = ? 6
Enter number = ? 7
Enter number = ? 8
Enter number = ? 5
Enter number = ? 8
Array in reverse order
8
5
8
7
6
Ok
  
```



1. Algorithm

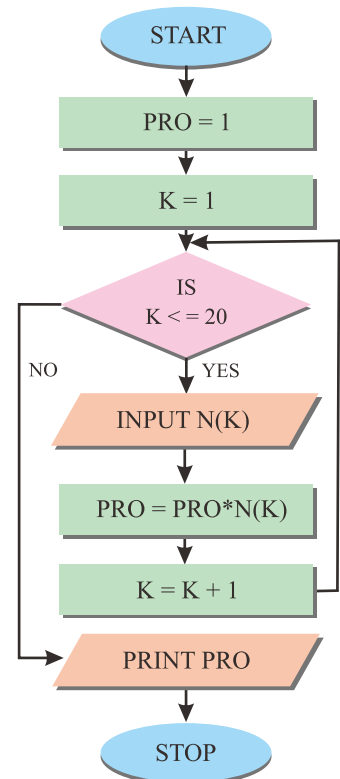
STEP 1 START
STEP 2 STORAGE PRO = 1
STEP 3 DIM N(20)
STEP 4 STORAGE K = 1
STEP 5 DECISION IS $K \leq 20$ IF FALSE THEN GOTO STEP 10
STEP 6 INPUT N(K)
STEP 7 COMPUTE Product = (Product * N(K))
STEP 8 COMPUTE $K = K + 1$
STEP 9 GOTO STEP 5
STEP 10 PRINT Product
STEP 11 STOP

3. Program

```

10 CLS
20 PRO = 1
30 DIM N(20)
40 FOR K = 1 TO 20
50 INPUT "Enter number";N(K)
60 PRO = PRO * N(K)
70 NEXT K
80 PRINT "Product = ";PRO
90 END
  
```

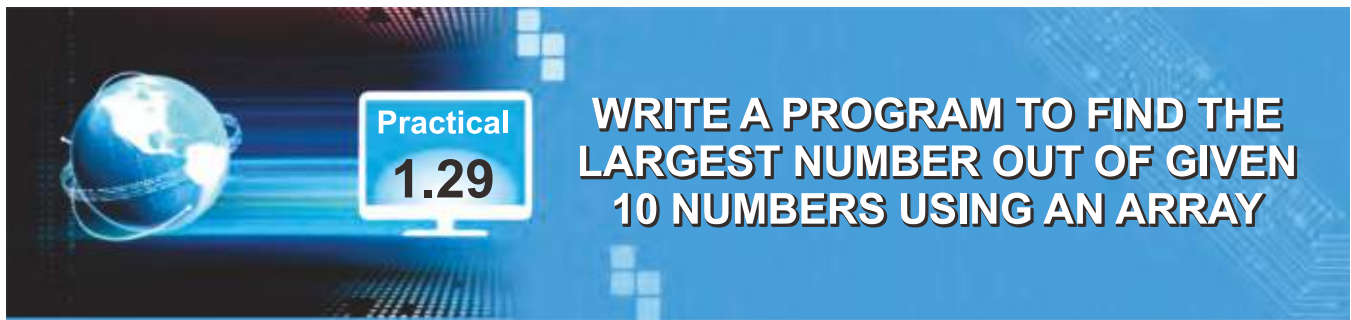
2. Flowchart



4. Output

```

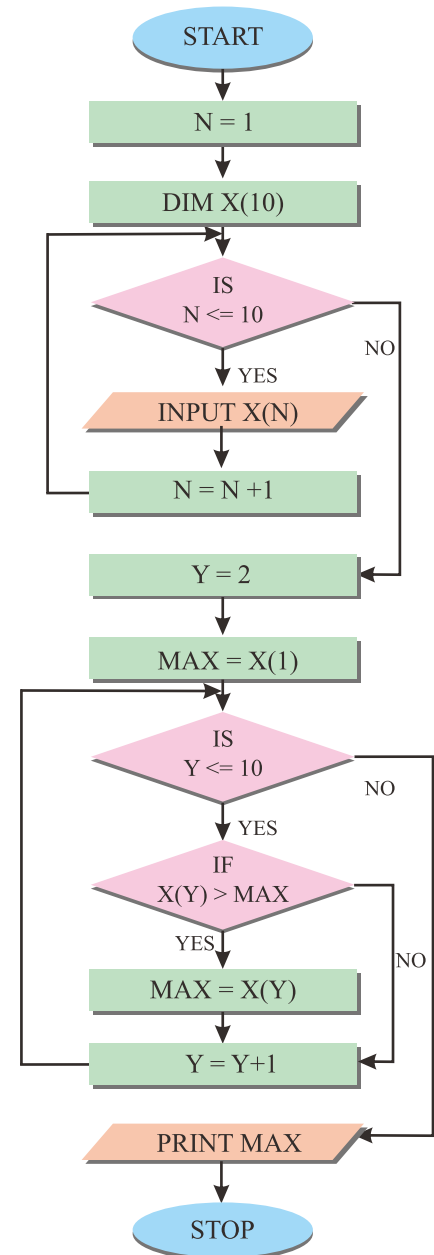
C:\GWBASIC.EXE
Enter number? 2
Enter number? 3
Enter number? 4
Enter number? 5
Enter number? 6
Enter number? 7
Enter number? 8
Enter number? 9
Enter number? 6
Enter number? 2
Enter number? 3
Enter number? 4
Enter number? 5
Enter number? 6
Enter number? 7
Enter number? 8
Enter number? 9
Enter number? 7
Enter number? 6
Enter number? 2
Product = 6.636768E+13
Ok
1LIST 2RUN- 3LOAD- 4SAVE- 5CONT- 6,"LPT1 7TRON- 8TROFF- 9KEY 0SCREEN
  
```



1. Algorithm

STEP 1 START
STEP 2 STORAGE $N = 1$
STEP 3 DIM $X(10)$
STEP 4 DECISION IS $N \leq 10$ IF FALSE THEN GOTO STEP 8
STEP 5 INPUT $X(N)$
STEP 6 COMPUTE $N = N + 1$
STEP 7 GOTO STEP 4
STEP 8 STORAGE $Y = 2$
STEP 9 STORAGE $MAX = X(1)$
STEP 10 DECISION IS $Y \leq 10$ IF FALSE THEN GOTO STEP 14
STEP 11 DECISION IF $X(Y) > MAX$ THEN $MAX = X(Y)$
STEP 12 COMPUTE $Y = Y + 1$
STEP 13 GOTO STEP 10
STEP 14 PRINT MAX
STEP 15 STOP

2. Flowchart



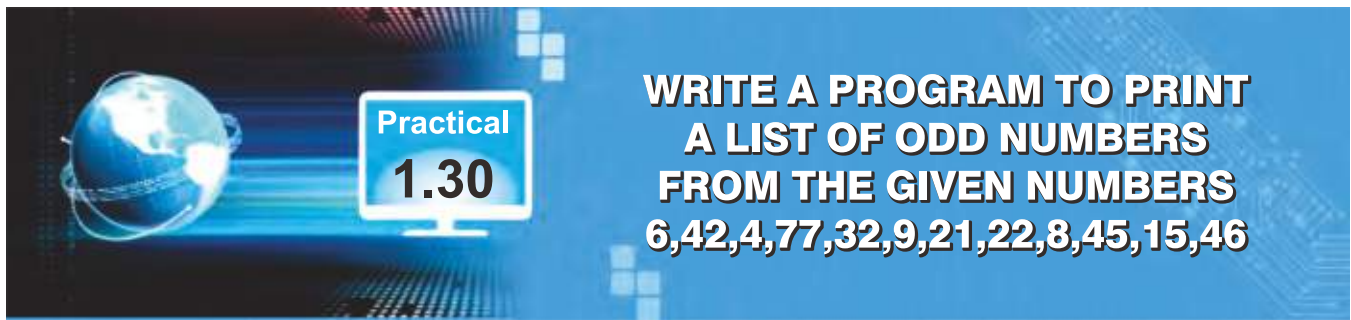
3. Program

```
10 CLS
20 REM Find out the largest number out of 10 given numbers
30 DIM X(10)
40 FOR N = 1 TO 10
50 INPUT "Enter number";X(N)
60 NEXT N
70 LET Y = 2
80 LET MAX = X(1)
90 WHILE Y <= 10
100 IF X(Y) > MAX THEN MAX = X(Y)
110 Y = Y + 1
120 WEND
130 PRINT "Largest number = ";MAX
140 END
```

4. Output



```
C:\GWBASIC.EXE
Enter number? 4
Enter number? 6
Enter number? 8
Enter number? 10
Enter number? 12
Enter number? 14
Enter number? 22
Enter number? 16
Enter number? 18
Enter number? 20
Largest number = 22
Ok
1LIST 2RUN 3LOAD 4SAVE 5CONT 6, 'LPT1 7TRON 8TROFF 9KEY 0SCREEN
```



1. Algorithm

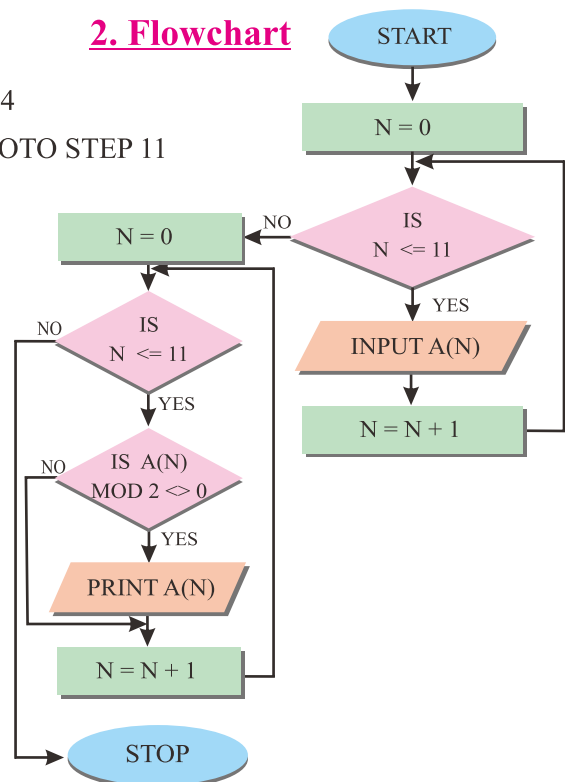
STEP 1 START
STEP 2 DIM A(11)
STEP 3 STORAGE N = 0
STEP 4 DECISION IS N <= 11 IF FALSE THEN GOTO STEP 8
STEP 5 READ values for A(N) from DATA statement
STEP 6 COMPUTE N = N + 1
STEP 7 GOTO STEP 4
STEP 8 DECISION IS (N <= 11) IF FALSE THEN GOTO STEP 14
STEP 9 DECISION IS A(N) MOD 2 <> 0 IF FALSE THEN GOTO STEP 11
STEP 10 PRINT A(N)
STEP 11 COMPUTE N = N + 1
STEP 12 GOTO STEP 8
STEP 13 DATA
STEP 14 STOP

3. Program

```

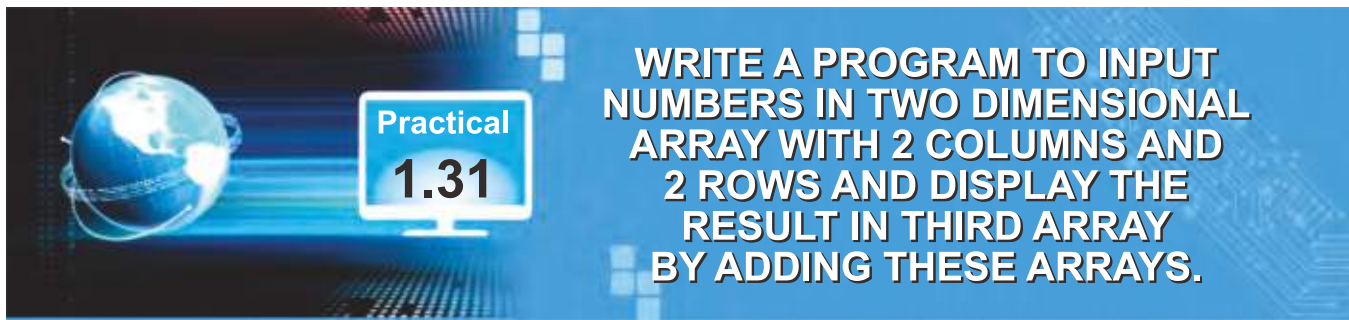
10 CLS
20 DIM A(11)
30 FOR N = 0 TO 11
40 READ A(N)
50 NEXT N
60 DATA 6, 42, 4, 77, 32, 9, 21, 22, 8, 45, 15, 46
70 FOR N = 0 TO 11
80 IF A(N) MOD 2 <> 0 THEN PRINT A(N)
90 NEXT N
100 END
  
```

2. Flowchart



4. Output





1. Algorithm

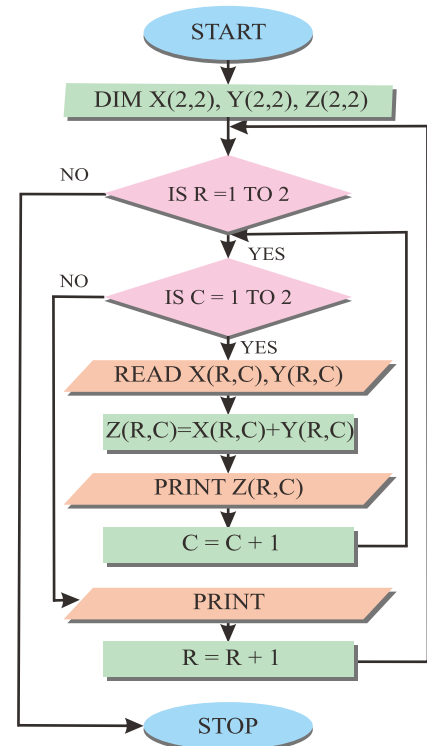
STEP 1 START
STEP 2 STORAGE R = 1
STEP 3 STORAGE C = 1
STEP 4 DECISION IS R <= 2 IF FALSE THEN GOTO STEP 14
STEP 5 DECISION IS C <= 2 IF FALSE THEN GOTO STEP 11
STEP 6 READ Values in X(R,C), Y(R,C) from DATA Statement
STEP 7 COMPUTE $Z(R,C) = X(R,C) + Y(R,C)$
STEP 8 PRINT Z(R,C)
STEP 9 COMPUTE C = C+1
STEP 10 GOTO STEP 5
STEP 11 PRINT
STEP 12 COMPUTE R = R+1
STEP 13 GOTO STEP 4
STEP 14 STOP

3. Program

```

10 CLS
20 DIM X(2,2), Y(2,2), Z(2,2)
30 FOR R = 1 TO 2
40 FOR C = 1 TO 2
50 READ X(R,C), Y(R,C)
60 Z(R,C) = X(R,C) + Y(R,C)
70 PRINT Z(R,C),
80 NEXT C
90 PRINT
100 NEXT R
110 DATA 7,5,7,6
120 DATA 4,3,6,5
130 END
  
```

2. Flowchart



4. Output



1. Algorithm

STEP 1 START

STEP 2 STORAGE $N = 1$

STEP 3 DECISION IS $(N \leq 20)$ IF FALSE THEN GOTO STEP 7

STEP 4 INPUT $A(N)$

STEP 5 COMPUTE $N = N + 1$

STEP 6 GOTO STEP 3

STEP 7 DECISION IS $(K = 1 \text{ TO } 20)$ IF FALSE THEN GOTO STEP 13

STEP 8 DECISION IS $(L = K + 1 \text{ TO } 20)$ IF FALSE THEN GOTO STEP 12

STEP 9 DECISION IF $A(K) < A(L)$ THEN $TEMP = A(K); A(K) = A(L); A(L) = TEMP$

STEP 10 COMPUTE $L = L + 1$

STEP 11 GOTO STEP 8

STEP 12 COMPUTE $K = K + 1$

STEP 13 GOTO STEP 7

STEP 14 PRINT "Names in descending order:";

STEP 15 DECISION IS $(N = 1 \text{ TO } 20)$ IF FALSE THEN GOTO STEP 18

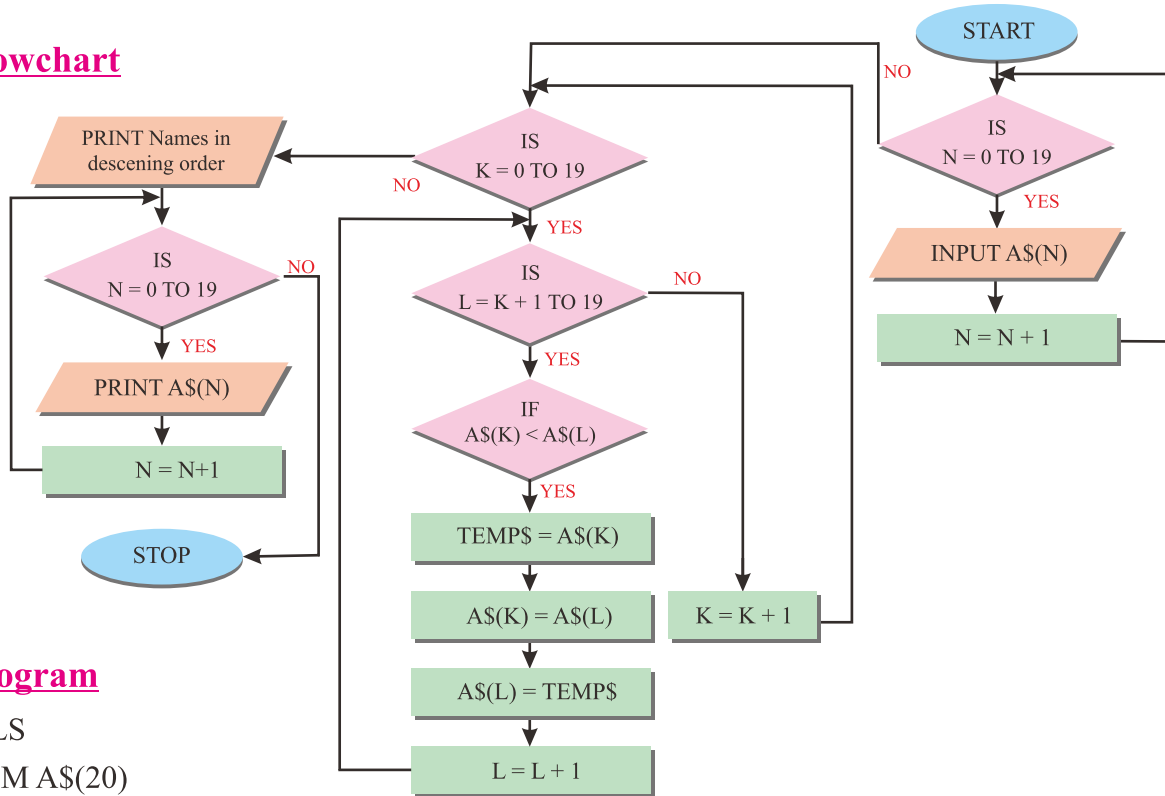
STEP 16 PRINT $A(N)$

STEP 17 COMPUTE $N = N + 1$

STEP 18 GOTO STEP 14

STEP 19 STOP

2. Flowchart



3. Program

```

10 CLS
20 DIM A$(20)
30 FOR N = 1 TO 20
40 INPUT "Enter name";A$(N)
50 NEXT N
60 FOR K = 1 TO 20
70 FOR L = K + 1 TO 20
80 IF A$(K)<A$(L) THEN TEMP$=A$(K):A$(K)=A$(L):A$(L)=TEMP$
90 NEXT L
100 NEXT K
110 PRINT "Names in descending order: ";
120 PRINT
130 FOR N = 1 TO 20
140 PRINT A$(N)
150 NEXT N
160 END
  
```

4. Output

```

C:\GWBASIC.EXE
Enter name? AHMED
Enter name? AIMAN
Enter name? ANAM
Enter name? ASGHAR
Enter name? BILAL
Enter name? FAROOQ
Enter name? FATIMA
Enter name? KHALID
Enter name? KHALIL
Enter name? MEHWISH
Enter name? RAMZAN
Enter name? SABA
Enter name? SAJID
Enter name? SAQIB
Enter name? SHAFIQ
Enter name? SIDRA
Enter name? SONIA
Enter name? TARIQ
Enter name? ZAFAR
Enter name? ZUBAIR
Names in descending order:
ZUBAIR
ZAFAR
TARIQ
SONIA
SIDRA
SHAFIQ
SAQIB
SAJID
SABA
RAMZAN
MEHWISH
KHALIL
KHALID
FATIMA
FAROOQ
BILAL
ASGHAR
ANAM
AIMAN
AHMED
Ok
  
```


Practical
1.33

WRITE A PROGRAM USING SUBROUTINE NAMED MEAN AND CALL THIS IN MAIN FUNCTION

1. Algorithm

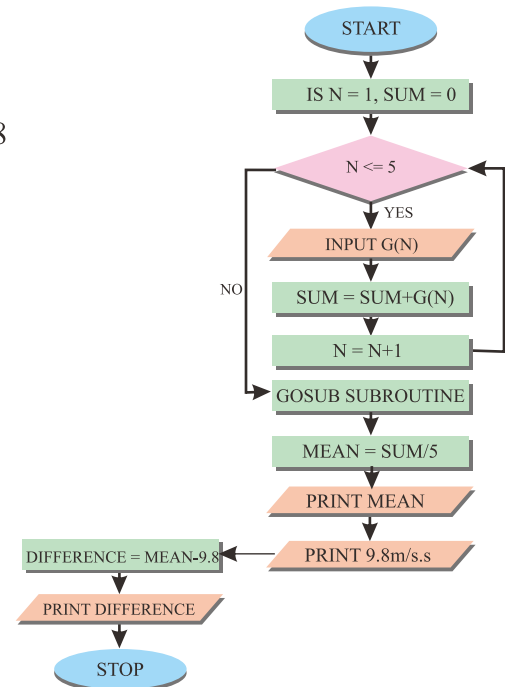
STEP 1 START
STEP 2 DIM G(5)
STEP 3 STORAGE N = 1, SUM= 0
STEP 4 DECISION IS N <= 5 IF FALSE THEN GOTO STEP 8
STEP 5 INPUT G(N)
STEP 6 COMPUTE SUM = SUM+G
STEP 7 COMPUTE N = N+1
STEP 8 GOTO STEP 3
STEP 9 SUBROUTINE MEAN
STEP 10 COMPUTE MEAN = SUM/5
STEP 11 PRINT MEAN
STEP 12 PRINT Actual value of g
STEP 13 COMPUTE DIFFERENCE = MEAN-9.8
STEP 14 PRINT DIFFERENCE
STEP 15 STOP

3. Program

```

10 CLS
20 REM How subroutine is called in main function
30 DIM G(5)
40 FOR N = 1 TO 5
50 INPUT "Enter the value of g";G(N)
60 LET SUM = SUM + G(N)
70 NEXT N
80 GOSUB 100
90 END
100 MEAN = SUM/5
110 PRINT "Mean value of g is ";MEAN
120 PRINT "Actual value of g is 9.8 m/sec.sec"
130 LET DIFFERENCE = MEAN-9.8
140 PRINT "Difference is ";DIFFERENCE
150 RETURN
  
```

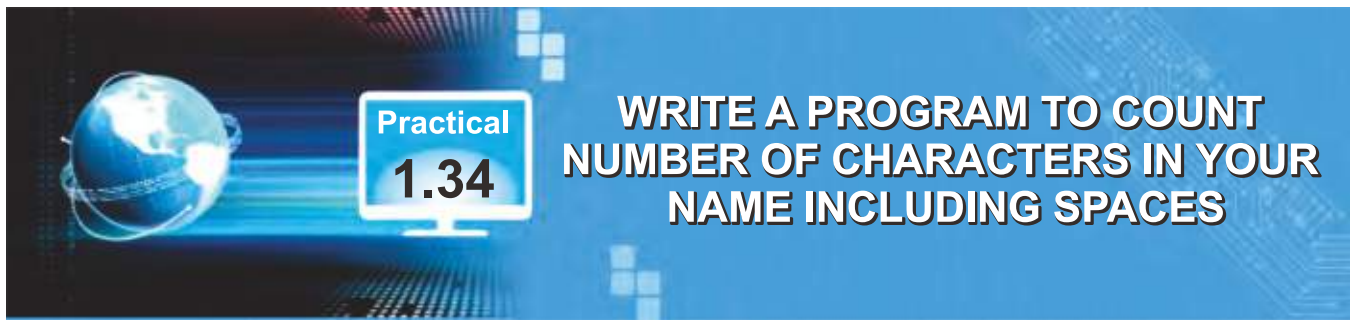
2. Flowchart



4. Output

```

C:\GW BASIC.EXE
Enter the value of g? 9
Enter the value of g? 9.9
Enter the value of g? 9.8
Enter the value of g? 9.7
Enter the value of g? 9.8
Mean value of g is 9.640001
Actual value of g is 9.8 m/sec.sec
Difference is -.1599999
Ok
  
```



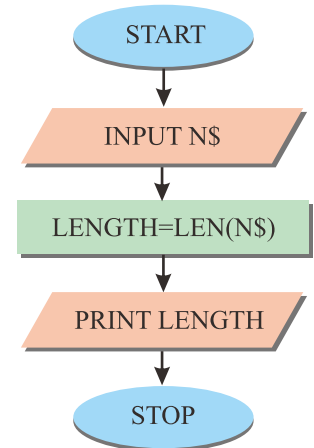
1. Algorithm

STEP 1 START
STEP 2 INPUT Name
STEP 3 COMPUTE Length of name = LEN (N\$)
STEP 4 PRINT Length of name
STEP 5 STOP

3. Program

```
10 CLS
20 INPUT "Enter your name";N$
30 LENGTH = LEN(N$)
40 PRINT LENGTH
50 END
```

2. Flowchart



4. Output



1. Algorithm

STEP 1 START
STEP 2 STORAGE $I = 1$
STEP 3 DECISION IS $I \leq 5$ IF FALSE THEN GOTO STEP 7
STEP 4 PRINT RANDOM NUMBER
STEP 5 COMPUTE $I = I + 1$
STEP 6 GOTO STEP 3
STEP 7 STOP

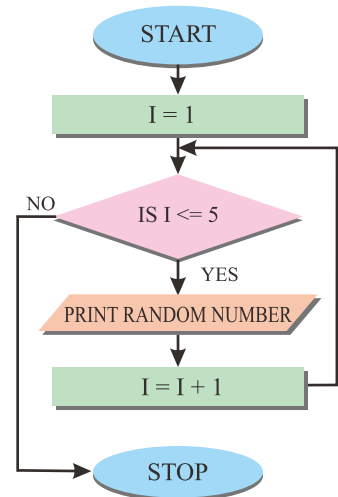
3. Program

```

10 CLS
20 FOR I = 1 TO 5
30 PRINT INT(RND * 100)
40 NEXT I
50 END
  
```

4. Output

2. Flowchart





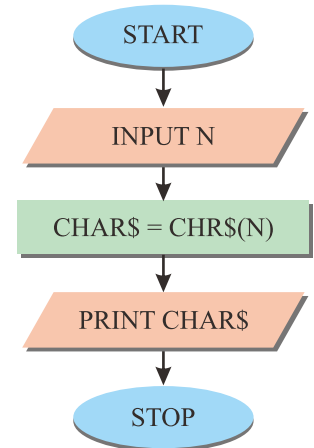
1. Algorithm

STEP 1 START
STEP 2 INPUT N
STEP 3 COMPUTE CHAR\$ = CHR\$(N)
STEP 4 PRINT CHAR\$
STEP 5 STOP

3. Program

```
10 CLS
20 INPUT "Enter ASCII code";N
30 CHAR$ = CHR$(N)
40 PRINT "Character = ";CHAR$
50 END
```

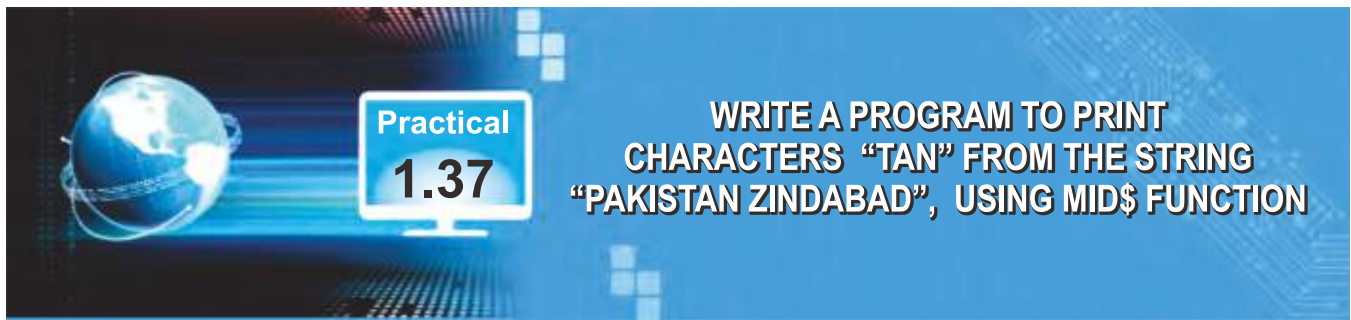
2. Flowchart



4. Output

```
C:\GWBASIC.EXE
Enter ASCII code? 65
Character = A
Ok

1LIST 2RUN 3LOAD 4SAVE 5CONT. 6, "LPT1 7TRON 8TROFF 9KEY 0SCREEN
```



1. Algorithm

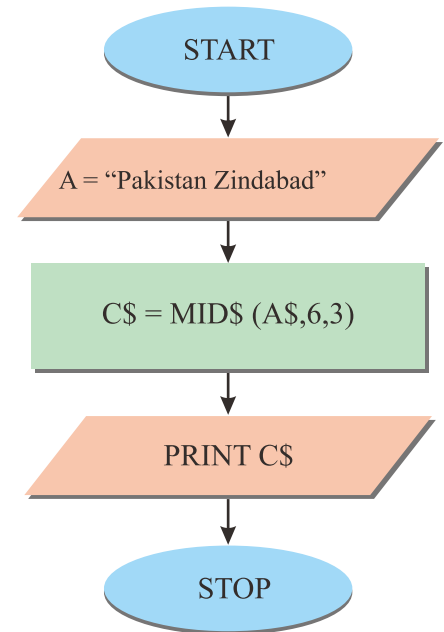
STEP 1 START
STEP 2 STORAGE A = "Pakistan Zindabad"
STEP 3 Extract string using MID\$ function
STEP 4 PRINT Extracted string
STEP 5 STOP

3. Program

```

10 CLS
20 LET A$ = "Pakistan Zindabad"
30 C$ = MID$(A$,6,3)
40 PRINT C$
50 END
  
```

2. Flowchart



4. Output





1. Algorithm

STEP 1 START

STEP 2 INPUT a string from user

STEP 3 Extract first three characters from given string using Left\$ function.

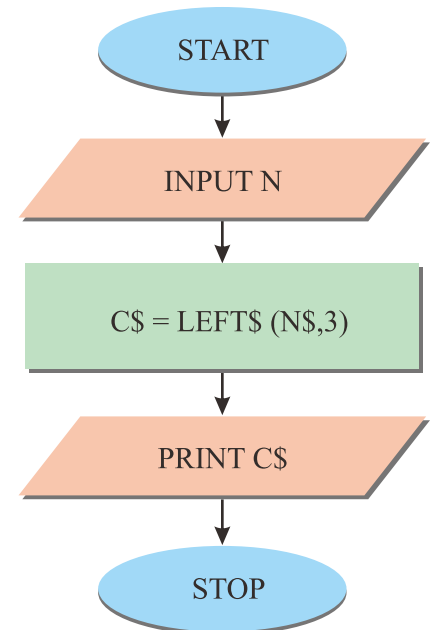
STEP 4 PRINT Extracted string

STEP 5 STOP

3. Program

```
10 CLS
20 INPUT "Enter your name";N$
30 C$ = LEFT$(N$,3)
40 PRINT "First three characters of your name are : ";C$
50 END
```

2. Flowchart



4. Output

```

C:\GWBASIC.EXE
Enter your name? Atif
First three characters of your name are : Ati
Ok
1LIST 2RUN= 3LOAD" 4SAVE" 5CONT= 6,"LPT1 7TRON= 8TROFF= 9KEY 0SCREEN
  
```



1. Algorithm

STEP 1 START

STEP 2 User defined function DEF FN to find area as DEF FN A(Y,Z) = Y*Z

STEP 3 INPUT L, W

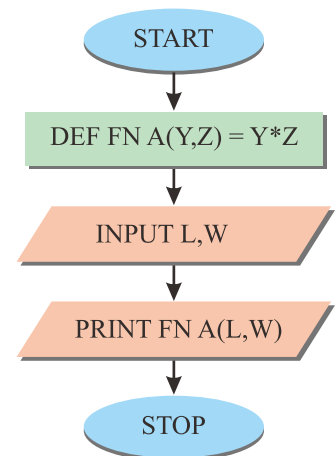
STEP 4 PRINT FN A(L,W)

STEP 5 STOP

3. Program

```
10 CLS
20 DEF FN A(Y,Z) = Y * Z
30 INPUT "Enter length of rectangle";L
40 INPUT "Enter width of rectangle";W
50 PRINT "The area of rectangle is"; FN A(L,W)
60 END
```

2. Flowchart



4. Output

```
C:\GWBASIC.EXE
Enter length of rectangle? 6
Enter width of rectangle? 7
The area of rectangle is 42
Ok

1LIST 2RUN 3LOAD 4SAVE 5CONT 6, "LPT1 7TRON 8TROFF 9KEY 0SCREEN
```



1. Algorithm

- STEP 1 START
- STEP 2 STORAGE S = "Y"
- STEP 3 OPEN file "MPHONE.TXT" for OUTPUT as #1
- STEP 4 DECISION IF S = "Y" OR S = "y" IF FALSE THEN GOTO STEP 9
- STEP 5 INPUT Name, Phone and Address
- STEP 6 WRITE Name Phone and Address in MPHONE.TXT file
- STEP 7 INPUT S
- STEP 8 GOTO STEP 4
- STEP 9 CLOSE #1
- STEP 10 STOP

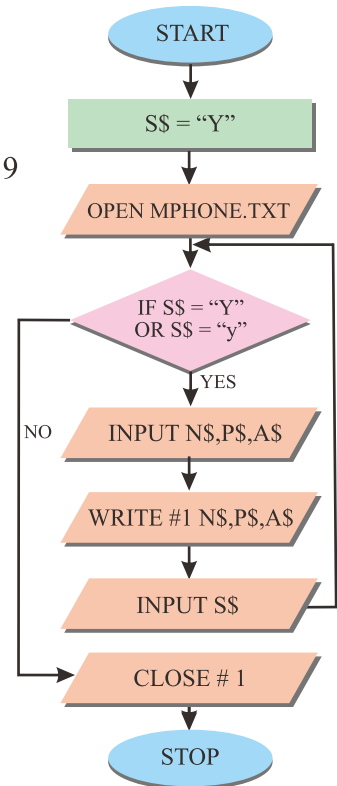
3. Program

```

10 CLS
20 S$ = "Y"
30 OPEN "MPHONE.TXT" FOR OUTPUT AS #1
40 WHILE S$ = "Y" OR S$ = "y"
50 INPUT "Enter name";N$
60 INPUT "Enter phone";P$
70 INPUT "Enter Address";A$
80 WRITE #1, N$, P$, A$
90 INPUT "Do you want ot enter more record [Y/N]";S$
100 WEND
110 CLOSE #1
120 END

```

2. Flowchart



4. Output

```

C:\GW\GWBASIC.EXE
Enter name? AHMED
Enter phone? 03064455667
Enter Address? LAHORE
Do you want ot enter more record [Y/N]? Y
Enter name? FAROOQ
Enter phone? 03337788995
Enter Address? RAWALPINDI
Do you want ot enter more record [Y/N]? N
Ok

```



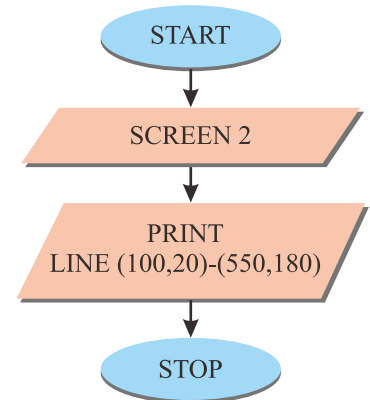
1. Algorithm

Step 1 START
Step 2 PRINT SCREEN 2
Step 3 PRINT LINE (100,20) - (550,180)
Step 4 STOP

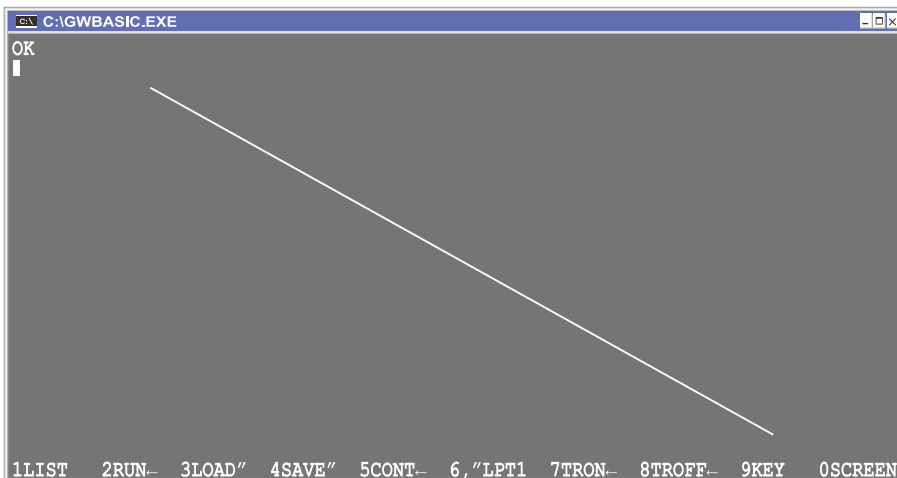
3. Program

```
10 CLS
20 SCREEN 2
30 LINE (100,20)-(550,180)
40 END
```

2. Flowchart



4. Output





1. Algorithm

Step 1 START

Step 2 PRINT SCREEN 2

Step 3 PRINT LINE(100,50) - (540,150),, B

Step 4 STOP

3. Program

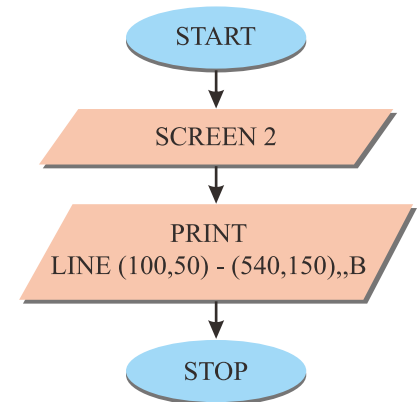
```
10 CLS
```

```
20 SCREEN 2
```

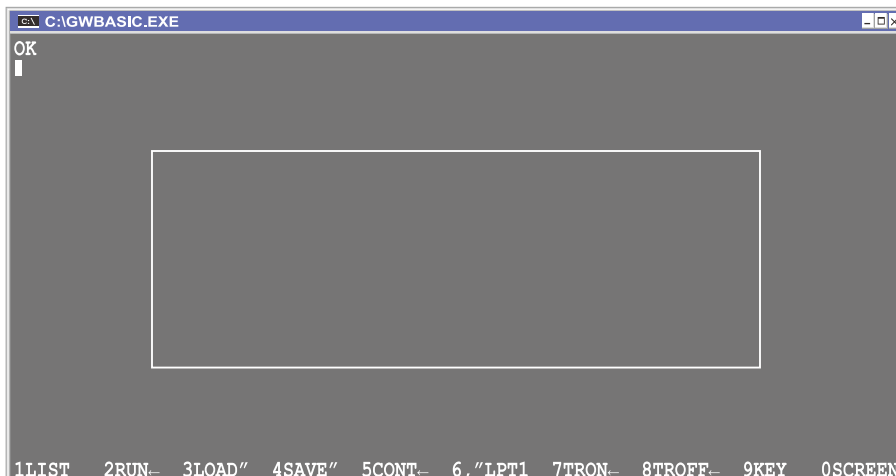
```
30 LINE (100,50) - (540,150),,B
```

```
40 END
```

2. Flowchart



4. Output



Practical 1.43

WRITE A PROGRAM TO DRAW A TRIANGLE USING LINE STATEMENT

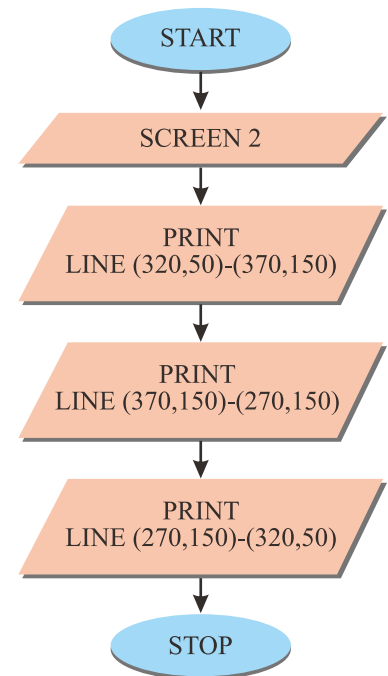
1. Algorithm

- STEP 1** START
STEP 2 PRINT SCREEN 2
STEP 3 PRINT LINE (320,50)-(370,150)
STEP 4 PRINT LINE (370,150)-(270,150)
STEP 5 PRINT LINE (270,150)-(320,50)
STEP 6 STOP

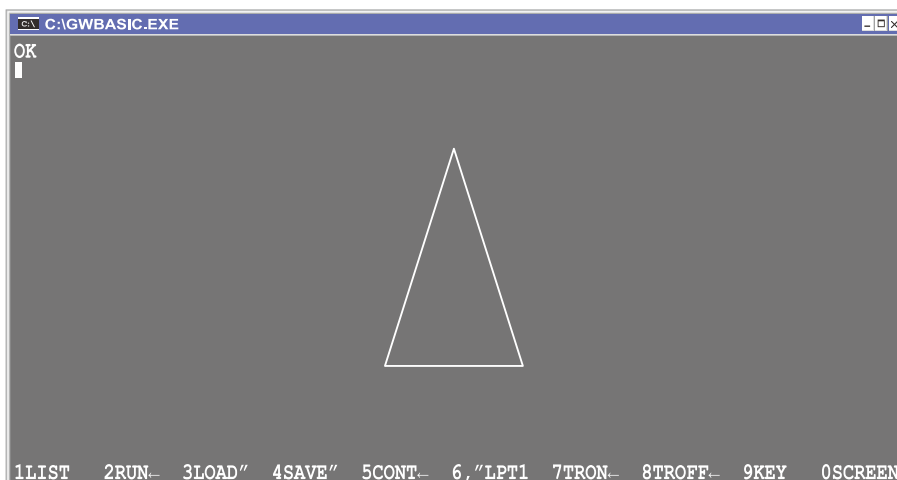
3. Program

```
10 CLS
20 SCREEN 2
30 LINE (320,50)-(370,150)
40 LINE (370,150)-(270,150)
50 LINE (270,150)-(320,50)
60 END
```

2. Flowchart



4. Output





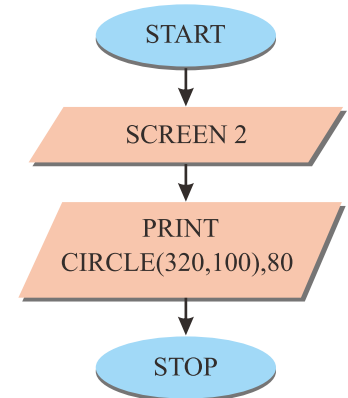
1. Algorithm

Step 1 START
Step 2 PRINT SCREEN 2
Step 3 PRINT CIRCLE(320,100),80
Step 4 STOP

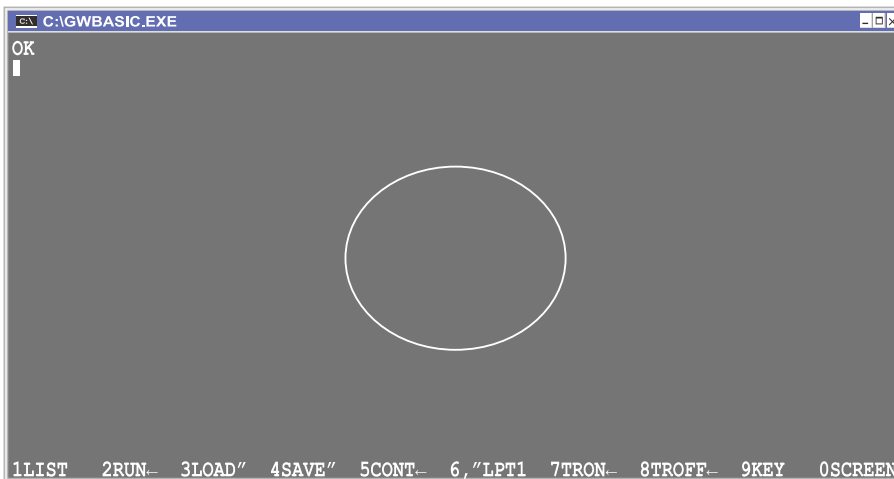
3. Program

```
10 CLS
20 SCREEN 2
30 CIRCLE (320,100),80
40 END
```

2. Flowchart



4. Output





Practical
1.45

WRITE A PROGRAM TO DRAW CONCENTRIC CIRCLES USING CIRCLE STATEMENT

1. Algorithm

STEP 1 START

STEP 2 PRINT SCREEN 2

STEP 3 PRINT CIRCLE (320,100),60

STEP 4 PRINT CIRCLE (320,100),80

STEP 5 STOP

3. Program

```
10 CLS
```

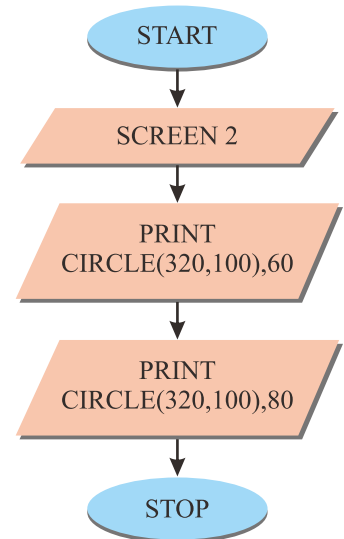
```
20 SCREEN 2
```

```
30 CIRCLE (320,100),60
```

```
40 CIRCLE (320,100),80
```

```
50 END
```

2. Flowchart



4. Output





1. Algorithm

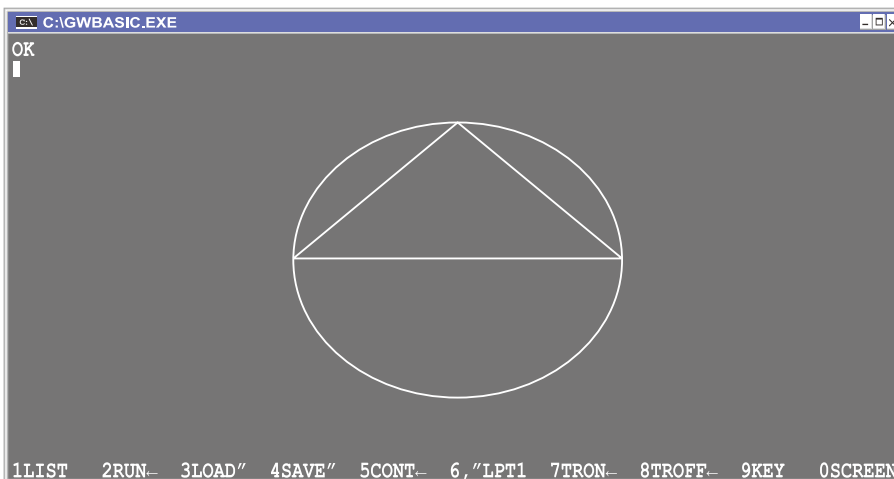
STEP 1 START
 STEP 2 PRINT SCREEN 2
 STEP 3 PRINT CIRCLE (320,100),150
 STEP 4 PRINT LINE(470,100)-(170,100)
 STEP 5 PRINT LINE(170,100)-(320,38)
 STEP 6 PRINT LINE (320,38)-(470,100)
 STEP 7 STOP

3. Program

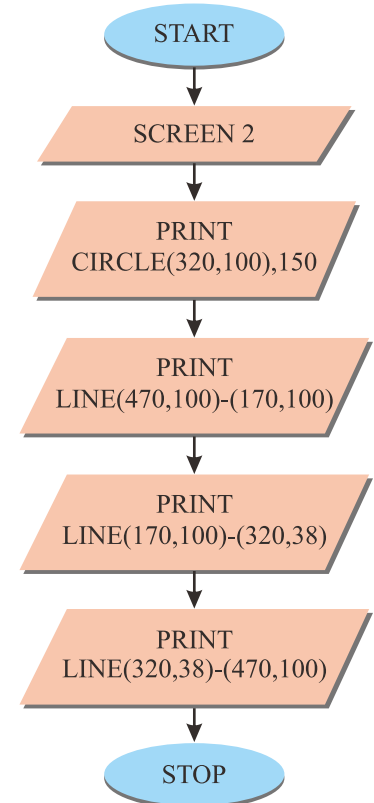
```

10 CLS
20 SCREEN 2
30 CIRCLE (320,100),150
40 LINE (470,100)-(170,100)
50 LINE (170,100)-(320,38)
60 LINE (320,38)-(470,100)
70 END
  
```

4. Output



2. Flowchart



Practical 1.47

WRITE A PROGRAM TO DRAW A TRIANGLE USING DRAW STATEMENT

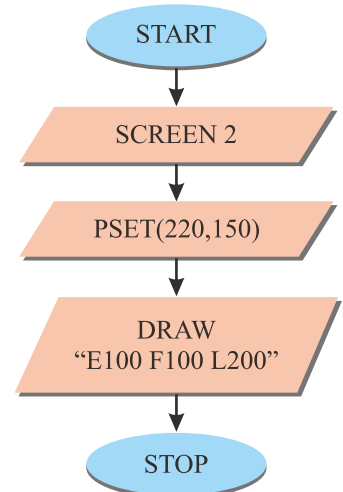
1. Algorithm

STEP 1 START
STEP 2 PRINT SCREEN 2
STEP 3 PSET (220,150)
STEP 4 DRAW "E100 F100 L200"
STEP 5 STOP

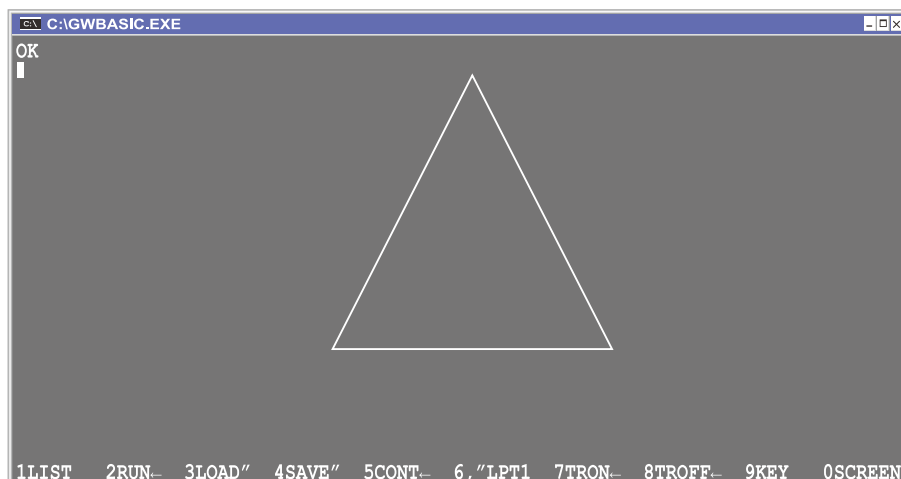
3. Program

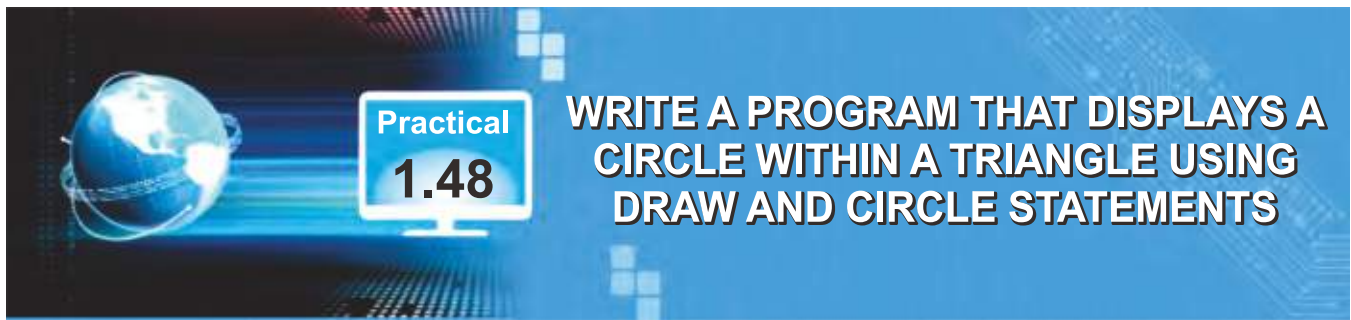
```
10 CLS
20 SCREEN 2
30 PSET(220,150)
40 DRAW "E100 F100 L200"
50 END
```

2. Flowchart



4. Output





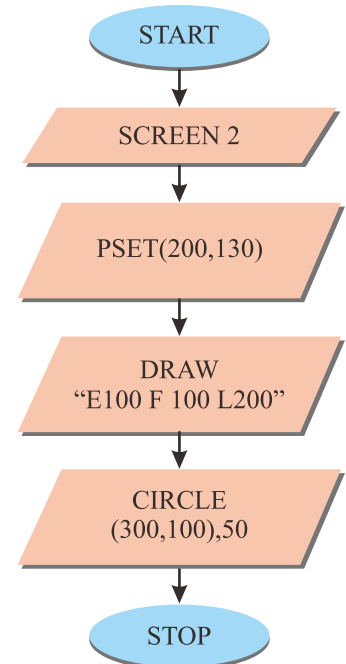
1. Algorithm

STEP 1 START
STEP 2 SCREEN 2
STEP 3 PSET(200,130)
STEP 4 DRAW "E100 F100 L200"
STEP 5 CIRCLE(300,100),50
STEP 6 STOP

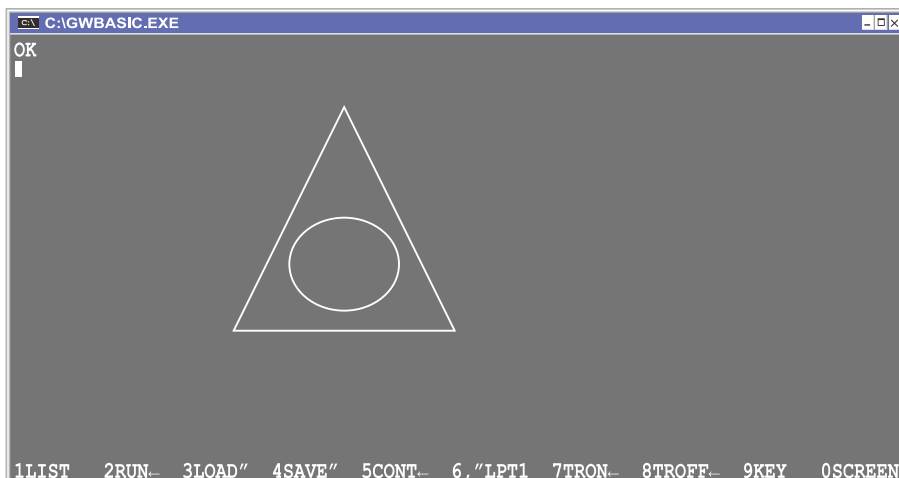
3. Program

```
10 CLS
20 SCREEN 2
30 PSET(200,130)
40 DRAW "E100 F100 L200"
50 CIRCLE (300,100),50
60 END
```

2. Flowchart



4. Output





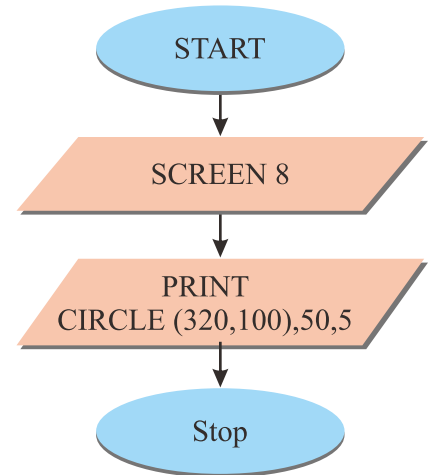
1. Algorithm

STEP 1 START
STEP 2 SCREEN 8
STEP 3 CIRCLE (320,100),50,5
STEP 4 STOP

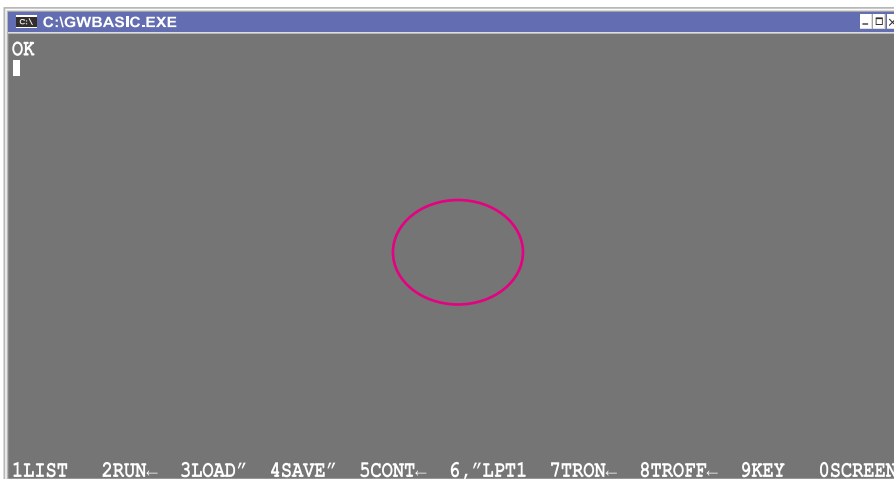
3. Program

```
10 CLS
20 SCREEN 8
30 CIRCLE (320,100),50,5
40 END
```

2. Flowchart



4. Output



Q. 1 What does BASIC means?

Ans. BASIC is the abbreviation of Beginner's All-Purpose Symbolic Instruction Code. It is a language which was invented to teach students a fundamental concept of programming.

Q. 2 Who invented the BASIC Language?

Ans. In 1963 two Americans John Kemeny and Thomas Kurtz developed BASIC (Beginner's All-Purpose Symbolic Instruction Code) language for computers at Dartmouth College.

Q. 3 What are the basic rules of a GW-BASIC program?

Every GW-BASIC program should have the following rules:

- Every program statement must begin with line number.
- Every program should end with an END statement.
- There should be no repetition of lines.
- Every statement should be separated by (:) colon.

Q. 4 How many types of variables are used in GW-BASIC?

Ans. Two types of variables are used in GW-BASIC. They are called numeric variables and string variables.

Q. 5 What are Numeric Variables?

Ans. Numeric variables are those variables that can store numeric values.

Q. 6 What are String Variables?

Ans. String variables are those variables that can store sequence of characters.

Q. 7 What is a constant ?

Ans. Constant is a quantity whose value cannot be changed; it cannot be changed like a variable. There are numeric constants and string constants.

Q. 8 What is a Numeric Constant?

Ans. Numeric constant consists of integers, single-precision or double-precision numbers.

Q. 9 What is a String Constant?

Ans. A String constant is a sequence of alphanumeric characters enclosed in double quotation marks. The maximum length of a string constant is 255 characters.

Q. 10 What is a Direct Mode?

Ans: When GW-BASIC is loaded, it shows **OK** message, it is in Direct Mode. In this mode GW-BASIC commands are executed as they are typed. Results are displayed immediately but the commands are lost after execution.

Q. 11 What is an Indirect Mode?

Ans. The Indirect mode is used to type the programs. The program loaded in memory is executed by entering **RUN** command.

Q. 12 What is a Flow Chart?

Ans. Flowchart is the pictorial representation of an algorithm. We can present the flow of data in visual form with a Flowchart.

Q. 13 What is an Algorithm?

Ans. An Algorithm is a step by step procedure for solving a problem e.g., a recipe for baking a cake is an algorithm?

Q. 14 What are logical errors?

Ans. Such errors are called logical errors that are caused in a program due to improper use of symbols and data or wrong use of formula.

Q. 15 What are Syntax Errors?

Ans. Syntax errors occur when the program violates one or more grammatical rules of the programming language. These errors are detected at compile time.

Q. 16 What is a Loop?

Ans. Loop is a technique to execute a set of statements repeatedly.

Q.17 What is an array?

Ans. Such collection of contiguous memory collections is called array which can store data of same type.

Q. 18 What is a pixel?

Ans. A tiny dot that is used to represent a picture is called a pixel.

Q.19 What are reserved words or Key words?

Ans. In GW-BASIC some words have fixed meanings and cannot be used as a variable, such words are called keywords or reserved Words e.g., IF, THEN, NEXT, FOR.

Q.20 What is the use of REM statement?

Ans. We use REM statement to add remarks in our GW-BASIC programs.

Q.21 What is a Screen statement?

Ans. In GW-BASIC programming, screen statement is used to change the text mode into graphic mode or to change graphic mode into text mode.

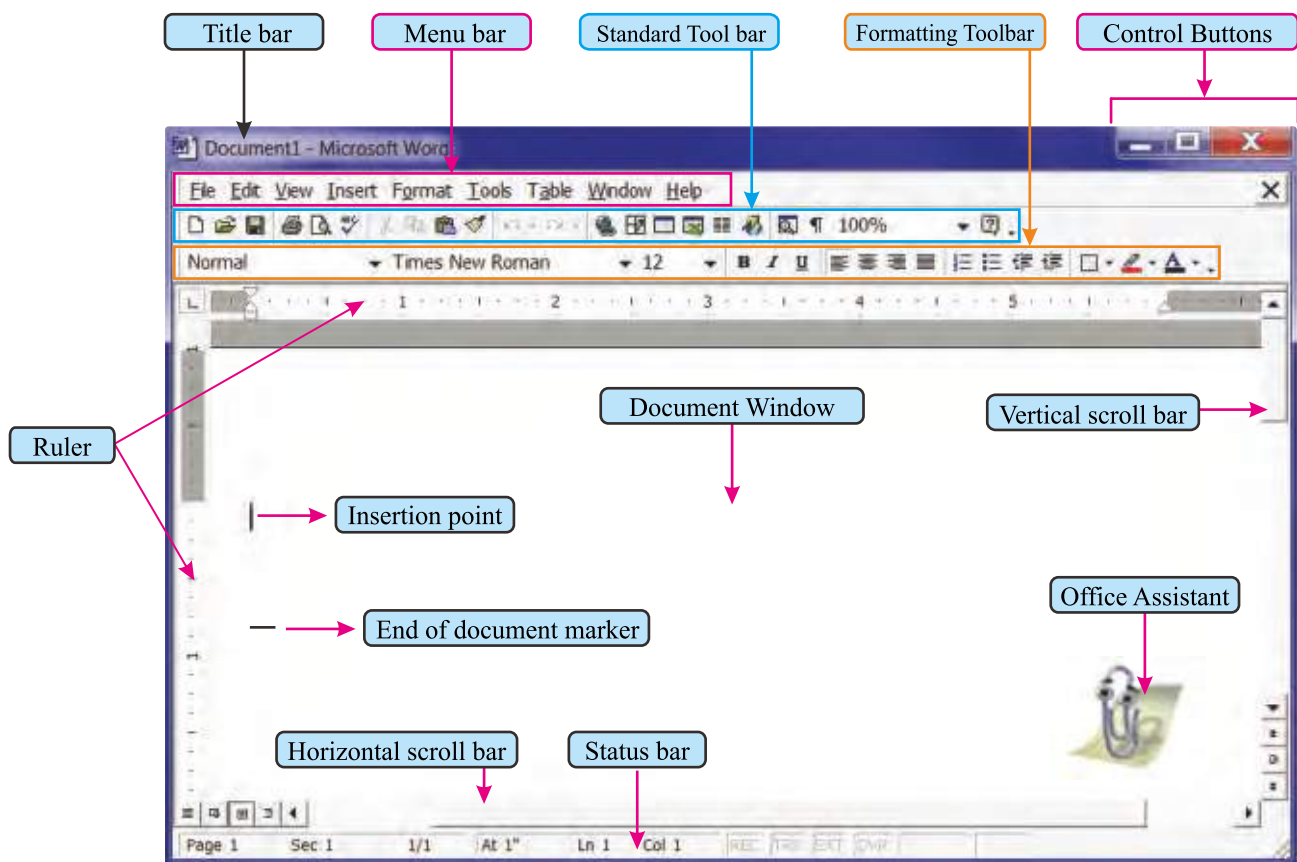
Unit 2

MICROSOFT WORD

Microsoft Word is the Word processing application in the Microsoft Office Suite. User can create professional-looking, formatted text documents such as letters, flyers, memos and more.

MS-Word Application Window

Besides Word processing, MS-Word allows users to perform many tasks in a typical office environment. Shown below is the Microsoft Word **default** window. When MS-Word is launched, a **new blank document** or default window opens in **Print Layout** view. Although window elements are fully explained in our class, here a brief explanation of the MS-Word window.



MS-Word Application Window

Title bar

Title bar is located at the top of Word window. It displays the document name followed by a program name.



Menu bar

Menu bar consists of different menus. Menu bar begins with the **File** menu item. The next choice is **Edit** followed by **View**, **Insert**, etc. The last two choices are always **Window** and **Help**. Every menu consists of commands to perform operations on present data.



Standard toolbar

Standard Toolbar consists of a group of buttons labeled with icons. The Standard Toolbar in WORD 2000 is used to **Create** a new document, **Open** an existing document, **Save** a document, **Print** a document, **Preview** what the printed output will look like. There are also buttons for frequently used functions, such as **Spell Checking**, **Cut**, **Copy**, **Paste**, **Undo**, **Redo**, etc. The Standard Toolbar may be customized to meet individual preferences.



Formatting toolbar

Formatting Toolbar contains buttons used for formatting text. It consists of a group of buttons labeled with icons. The Formatting Toolbar in WORD 2000 is used to select **Font**, **Font size**, **Font style**, such as **Bold**, **Italics**, or **Underline**. The formatting toolbar is also used to **Align** text and apply **Bullets** and **Numbering** within a document. The Formatting Toolbar may be customized to meet individual preferences.



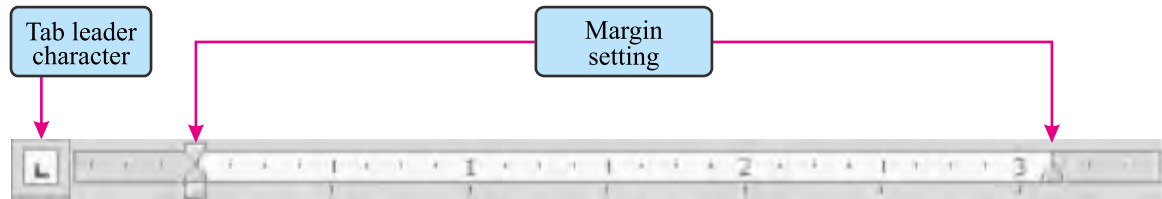
Ruler

Ruler is used to set margins, indents, and tabs. It allows tab stops to be set. To set tabs, follow these steps:



- Select the paragraphs in which user wants to set tab stops.
- Click the tab character at the far left of the horizontal ruler until it changes to the type of tab user wants.
- Click on the horizontal ruler where user wants to set a tab stop.
- Vertical ruler is used to set margins, indents and tabs vertically.

Ruler with Tab Leader Characters



Each Tab Leader Character is briefly described.

- Select this tab leader character to set a **decimal alignment** () tab stop.
- Select this tab leader character to set a **right-justify** () tab stop.
- Select this tab leader character to set a **left-justify** () tab stop.
- Select this tab leader character to set a **center** () tab stop..
- To change margins, click and drag the margin settings left or right

Document Window

It is used to create, save and edit the document.

Insertion Point

It is the location where the character typed will appear in the document.

End-of-document marker

It indicates the end of the document.

Scroll bars

These are used to view parts of the document. There are two types of scroll bars; **Horizontal Scroll Bar** is used to view the document from left to right and **vertical scroll bar** is used to view the document from top to bottom.



Status bar

Status bar, which is a horizontal area at the bottom of the document window in Microsoft Word, provides information about the location of insertion point like **Page number**, **Section number**, **At measurement**, **Line number**, **Column number**, etc.



Office Assistant

It is used to open Microsoft Office Help feature. User can take help by typing the keyword through Office Assistant.

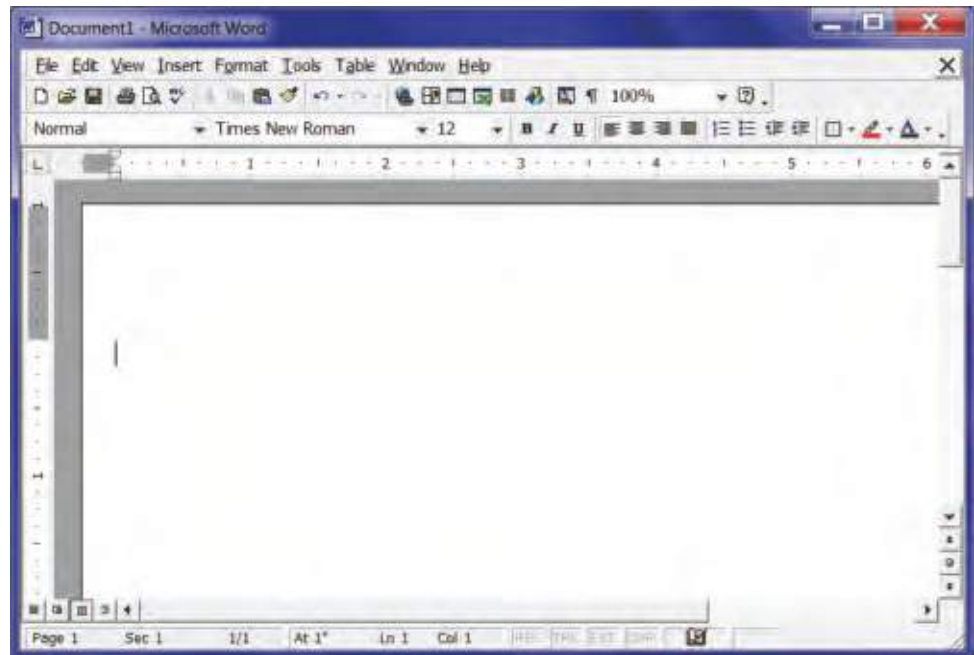


Practical 2.1 CREATING AND OPENING DOCUMENTS

There are several ways to create new documents and to open existing documents in MS-Word.

Create a New Document

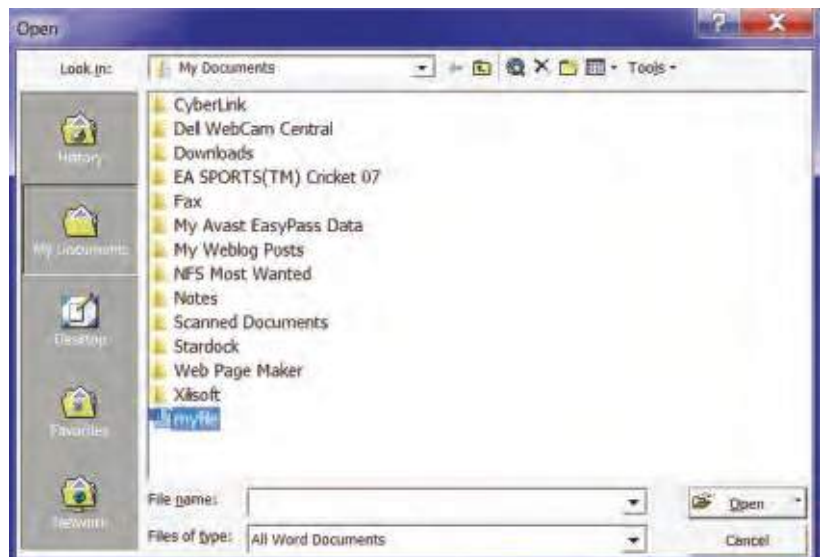
- Click the New Document button on the standard tool bar. **OR**
- Choose **File** and then **New** from the menu bar. **OR**
- Press **Ctrl + N** (press and hold the **Ctrl** key while pressing "N" on the keyboard).



Open an Existing Document

- Click the **Open File** button on the standard tool bar. **OR**
- Choose **File** and then **Open** from the Menu bar. **OR**
- Press **Ctrl + O** (press and hold the **Ctrl** key while pressing "O" on the keyboard).

Each method will show **Open dialog box**. Choose the required file and click the **Open** button.





There are several ways to save new documents in MS-Word.

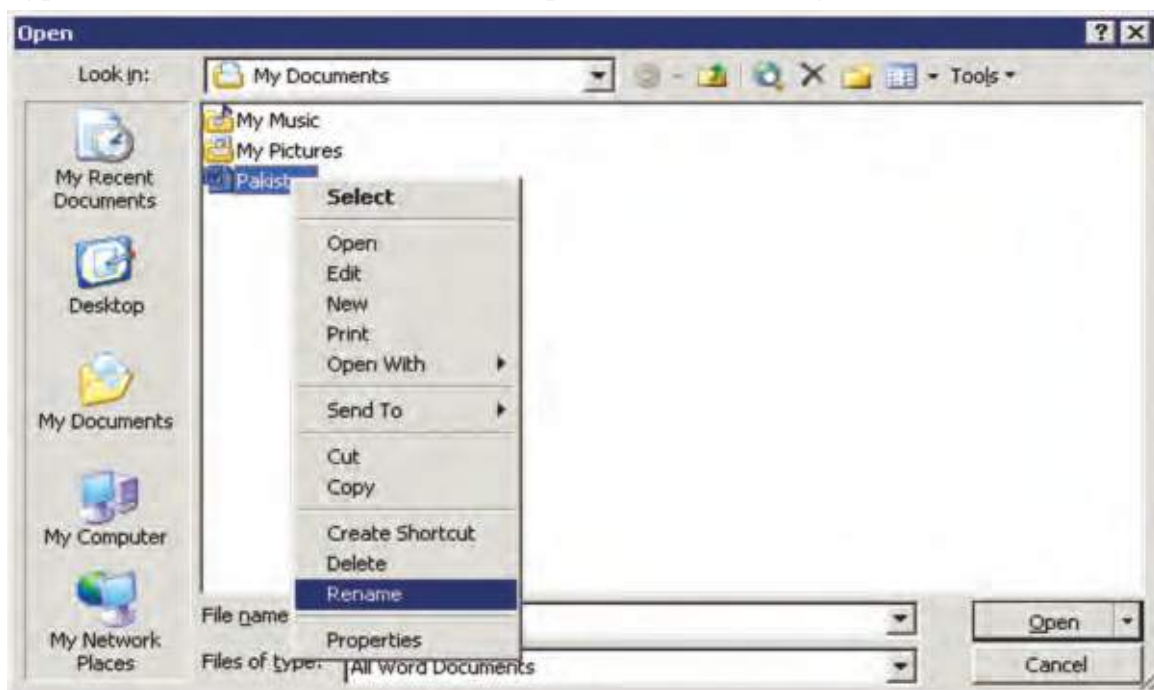
Save a Document

- Click the **Save**  button on the Tool bar. **OR**
- Select **File** and then **Save** from the Menu bar. **OR**
- Press **Ctrl + S** (press and hold the **Ctrl** key while pressing "S" on the keyboard).

Renaming Documents

To rename MS-Word document while using the program:

- Select **File** and then **Open** and find the document to be renamed.
- **Right-click** on the document name with the mouse and select **Rename** from the shortcut menu.
- Type the new name for the document and press the **ENTER** key.



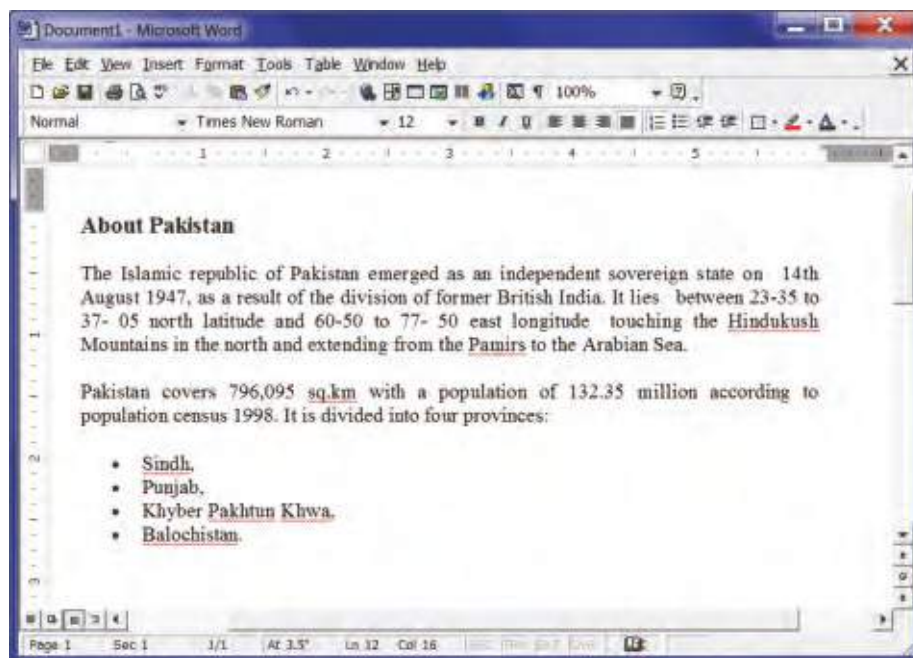
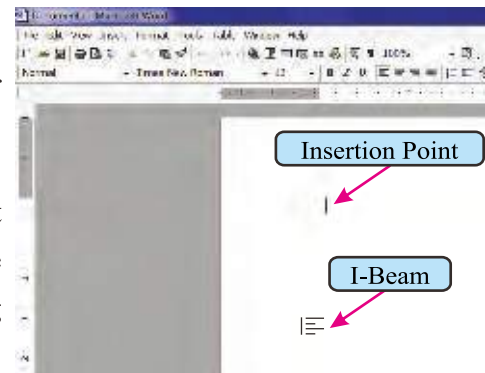
Close a Document

- Close the current document by selecting **File** and then **Close** from menu bar. **OR**
- Click the Close icon  on the **Title bar**. **OR**
- Press **Alt + F4** (press and hold the **Alt** key while pressing **F4** key on the keyboard).

Practical **2.3** **TYPING, INSERTING, SELECTING AND DELETING TEXT**

Typing and Inserting Text

- To enter text, just start typing. The text will appear where the blinking cursor is located.
- To insert text, somewhere else in the document move the cursor by using the arrow buttons on the keyboard or positioning the mouse and clicking the left button.



The keyboard shortcuts listed below are also helpful when moving through the text of a document.

MS Word Shortcuts

Keystroke

HOME

END

Ctrl + HOME

Ctrl + END

Action

Beginning of the line

End of the line

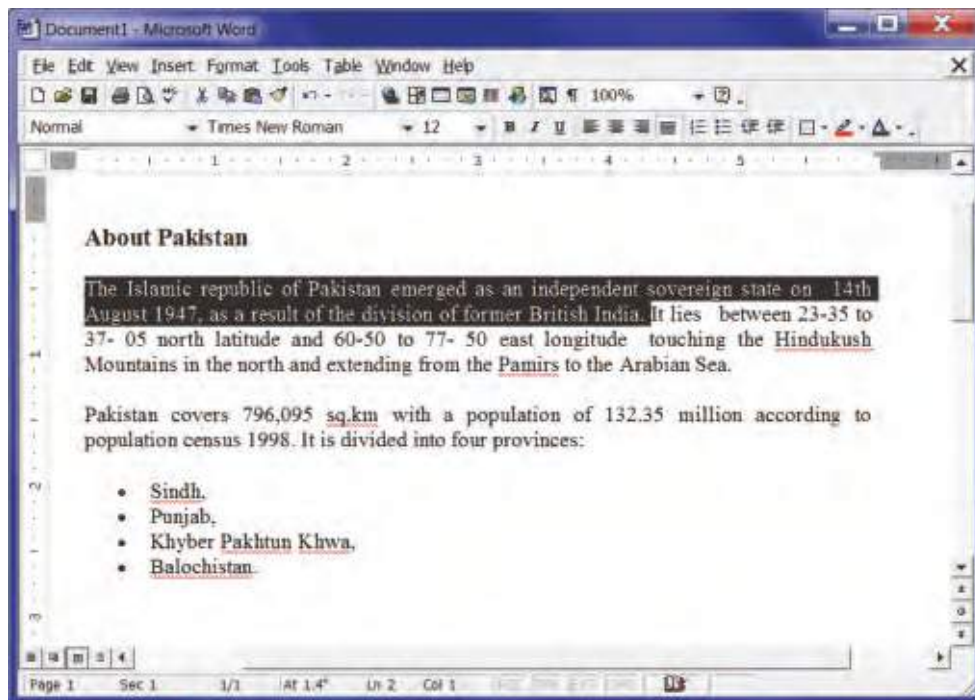
Top of the document

End of the document

Selecting Text

To change any attribute of text it must be selected first.

- Select the text by dragging the mouse over the desired text while keeping the left mouse button pressed. **OR**
- Hold down the **Shift** key on the keyboard while using the arrow keys to select the text.



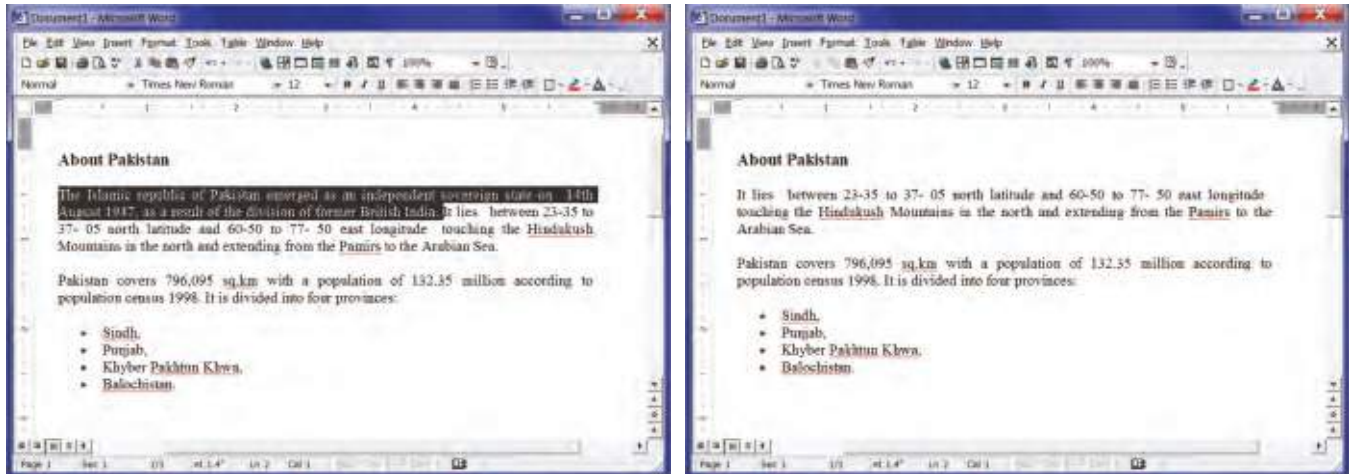
The following table contains shortcuts for selecting a portion of the text.

Technique	Selection
Double-click within the word	Whole word
Triple-click within the paragraph	Whole paragraph
Drag the mouse over the words, or hold down SHIFT while using the arrow keys	Several words or lines
Choose Edit and then Select All from the menu bar, or press Ctrl + A	Entire document

To remove the selection, click anywhere outside of the selection on the page or press an arrow key on the keyboard.

Deleting Text

- Use the **Backspace** and **Delete** keys on the keyboard to delete text.
- **Backspace** will delete text to the left of the cursor and **Delete** will erase text to the right.
- To delete a large selection of text, highlight it using any of the methods described above and press the **Delete** key.



Undo

Undo feature lets users to revert the last change/action made to the document. MS-Word remembers up to **300** actions in a document and allows users to undo any or all of them as long as they haven't closed the document first.

To use Undo:

- Choose **Edit** and then **Undo** from the menu bar. **OR**
- Press **Ctrl + Z** (press and hold the **Ctrl** key while pressing “**Z**” key on the keyboard).
- Undo all recent actions by repeatedly clicking the **Undo** button located on the **Standard** toolbar.

Notice the small **list arrow** next to the **Undo** button. When user clicks on it, he/she will see a list of all the separate actions performed on the document. Users can select as many actions as they want to undo.

Redo

Redo feature allows users to reverse the last **Undo**.

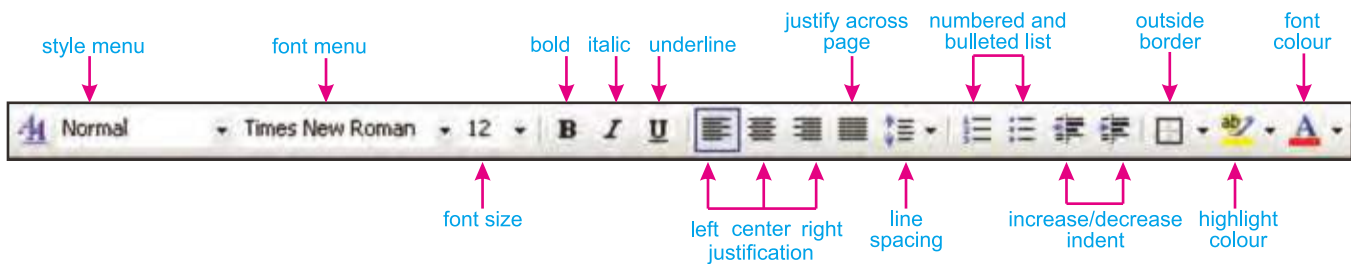
To use Redo:

- Choose **Edit** and then **Redo** from the menu bar. **OR**
- Press **Ctrl + Y** (press and hold the **Ctrl** key while pressing “**Y**” key on the keyboard).

Practical **2.4** FORMATTING TEXT (PART 1)

Formatting Text

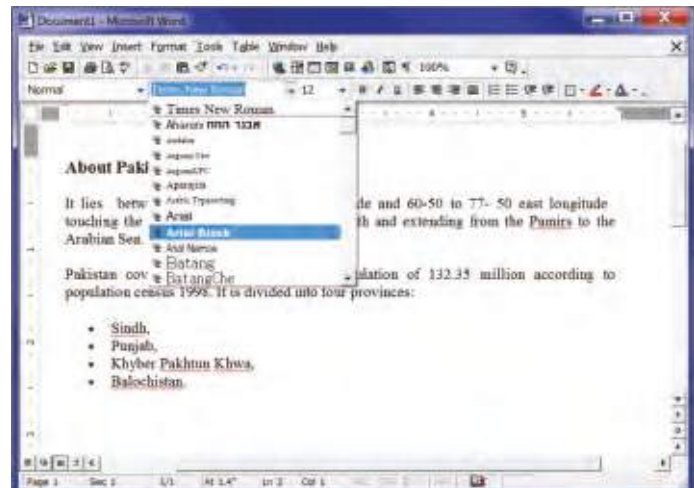
The formatting toolbar is the easiest way to change many attributes of text. If the toolbar as shown below is not displayed on the screen, select **View** and then **Toolbars** and choose **Formatting** from menu bar.



Font:

Font is the typeface used to display characters.

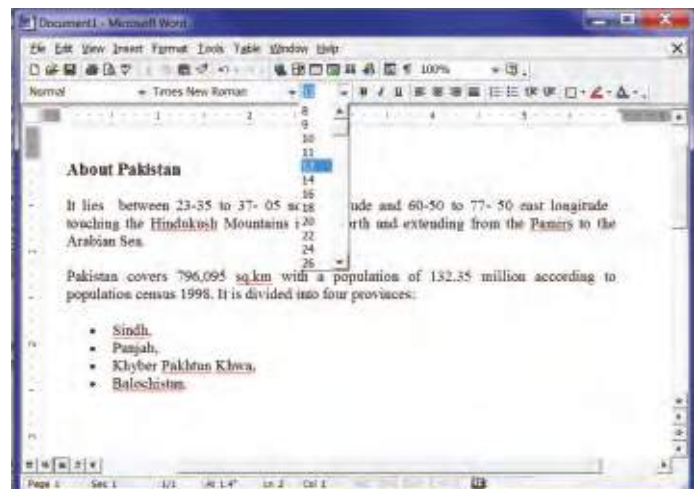
- Click the arrowhead to the right of the font name box to view the list of fonts available.
- Scroll down to the font, you want to apply on the text and select it by clicking on the name once with the mouse.



Font Size:

Font Size refers to the size of the characters expressed in points.

- Click on the white part of the font size box to enter a value for the font size. **OR**
- Click the arrowhead to the right of the box to view a list of font sizes available.
- Select a size by clicking on it once. A font size of 10 or 12 is best for paragraphs of text. (Font size range is between 1 to 1638)

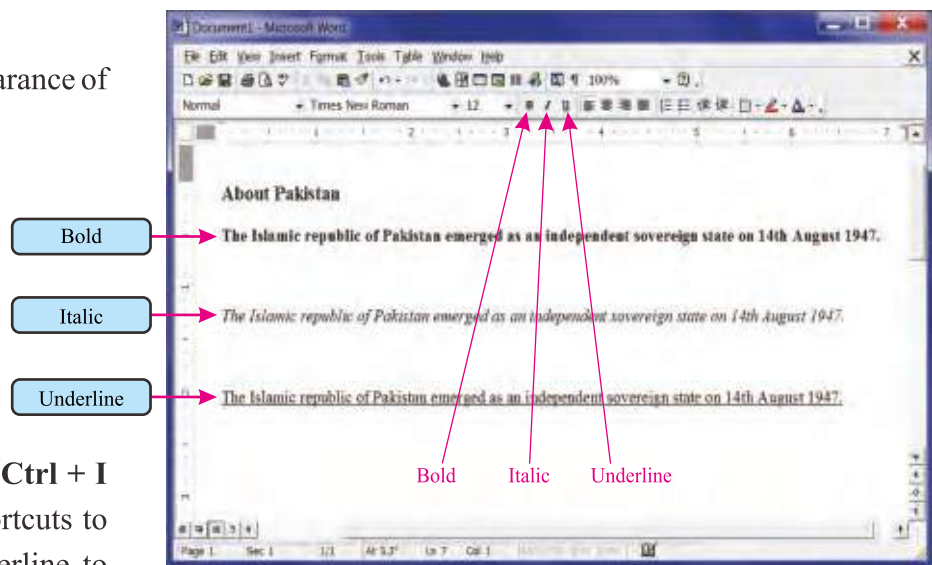


Font Style:

Font Style refers to the appearance of the font characters.

- Use the buttons shown in figure to bold, italicize, and underline text.

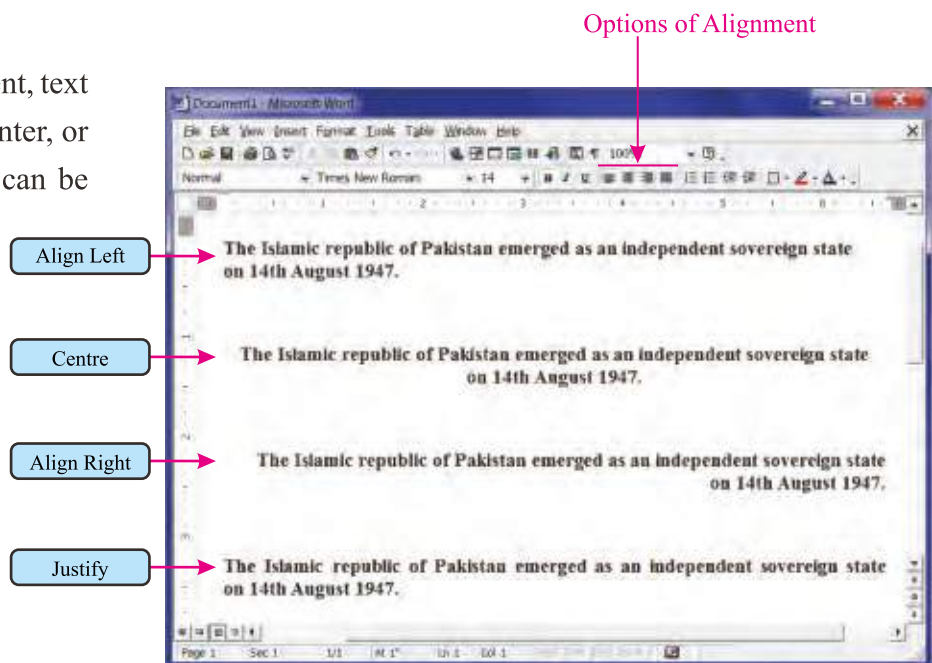
Users can also use **Ctrl+B**, **Ctrl + I** and **Ctrl + U** Keyboard shortcuts to apply Bold, Italic and Underline to selected text respectively.



Alignment

Using the options of alignment, text can be aligned to the left, center, or right side of the page or it can be justified across the page.

Users can also use **Ctrl + L**, **Ctrl + E**, **Ctrl + R** and **Ctrl+ J** keyboard shortcuts to apply Left, Center, Right and Justify alignments to selected a text, respectively.

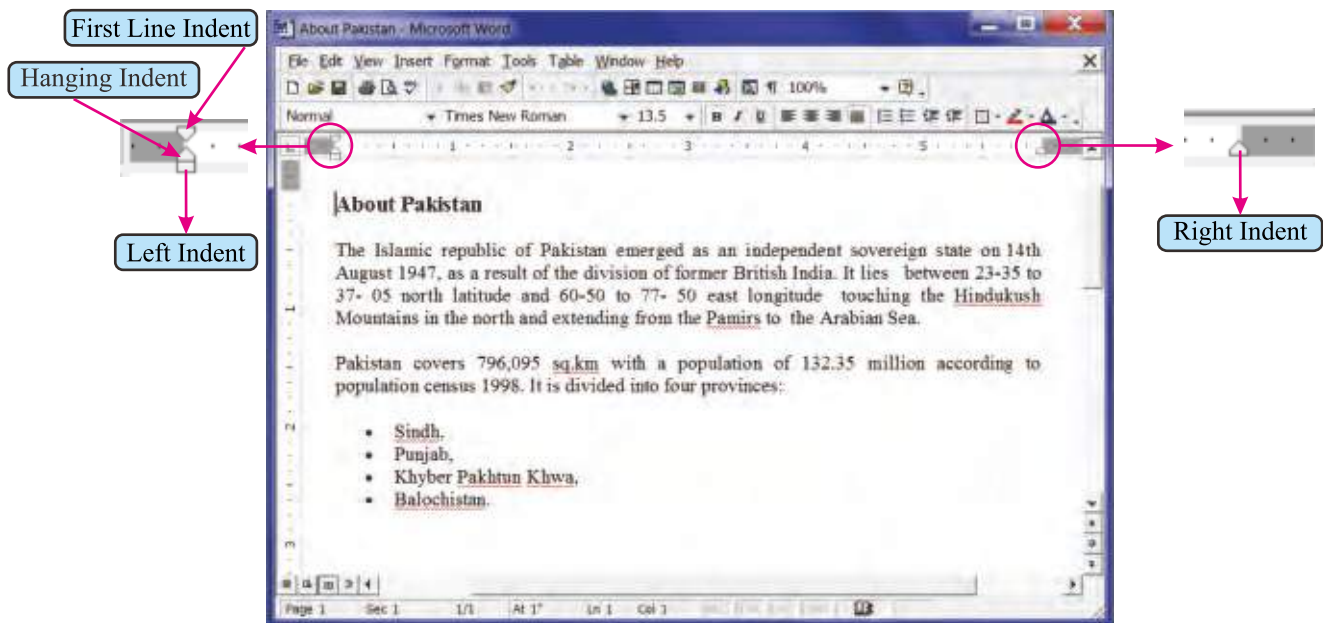


Practical 2.5

FORMATTING TEXT (PART 2)

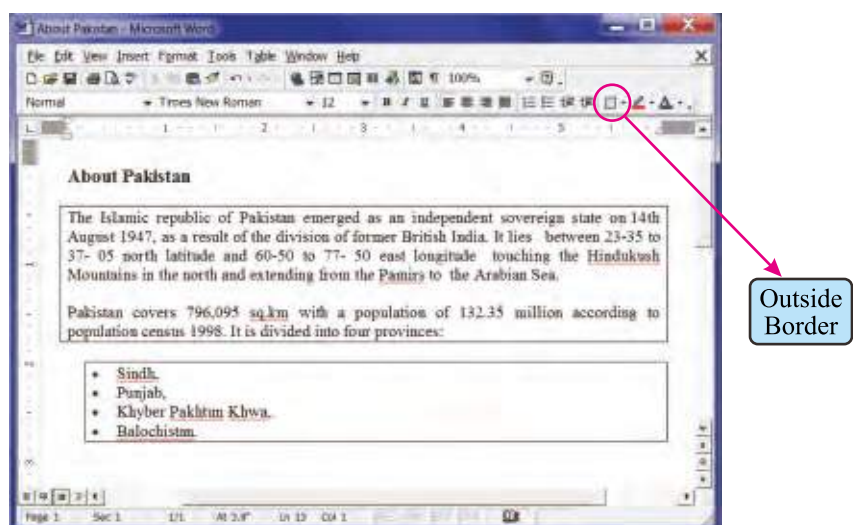
Increase/Decrease Indent:

- Change the indentation of a paragraph in relation to the side of the page.



Outside Border:

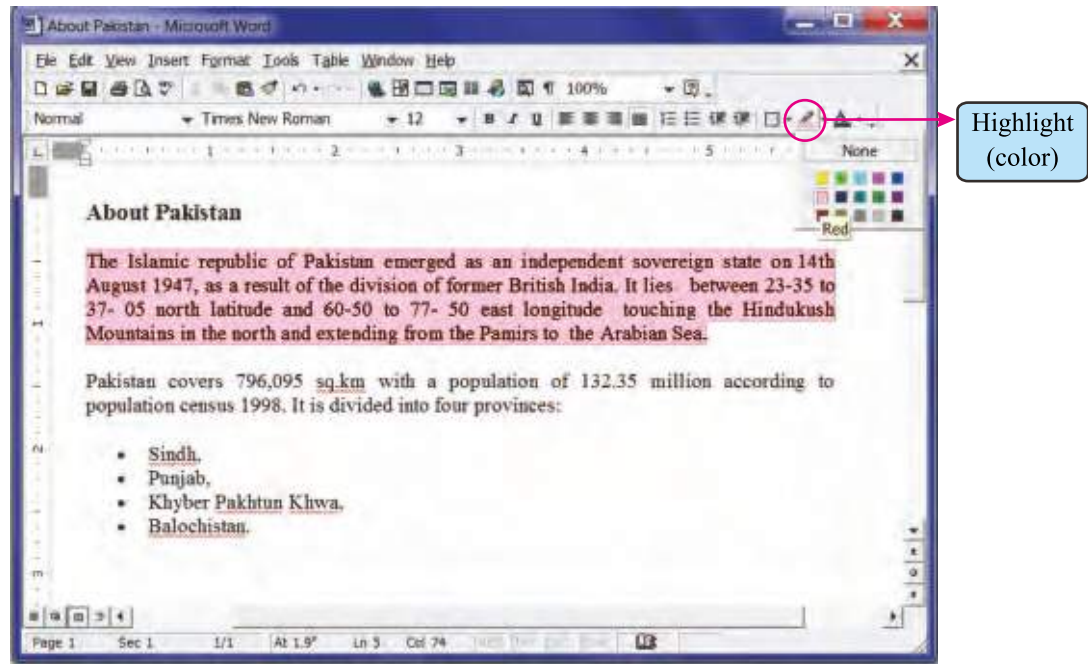
- Select the text to insert the border.
- Move the mouse pointer over the outside border icon and press left button.
- Border will be inserted.



Highlight Color:

Use this option to change the color behind a text selection. The color shown on the button is the last color used. To select a different color:

Click the arrowhead next to the image  on the bar.

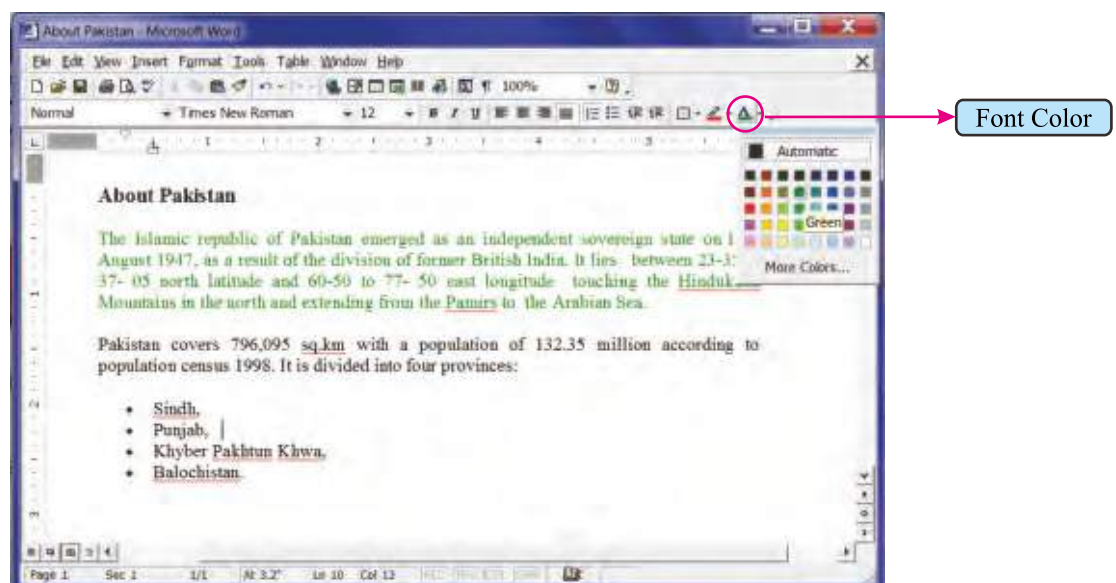


Text Color:

This option changes the color of the selected text. The color shown on the button is the last color chosen.

Click the arrowhead next to the button image  to select another color.

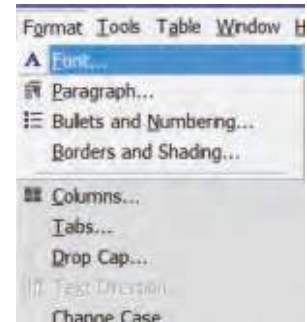
The Font Dialog Box



Use the **Font** dialogue box (found in the **Format** menu) to change font, preview it, and adjust its **size** and **style**.

Font List

To select a font, user can scroll through the **Font list**. The list shows all the fonts that are available on the computer.



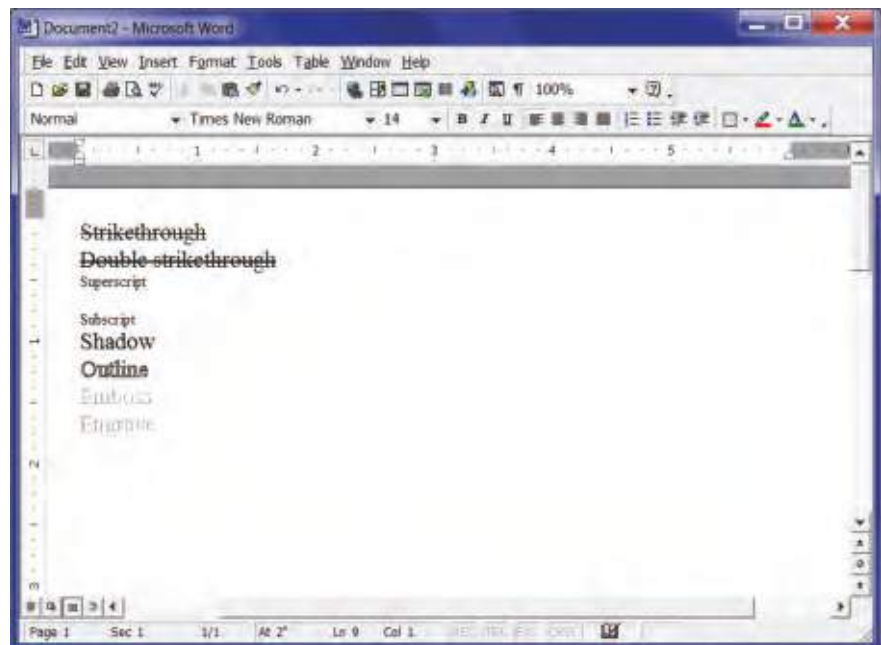
Preview:

User can preview a particular font before selecting it for the document. The **preview window** in the **Font** dialog box allows to see what a particular font looks like. Previewing helps users to select an appropriate font for the document.



Effects

Font Effects formatting refers to special effects that change the appearance of characters. These options include strikethrough, double strikethrough, superscript, subscript, shadow, outline, emboss, engrave, small caps, all caps or hidden.

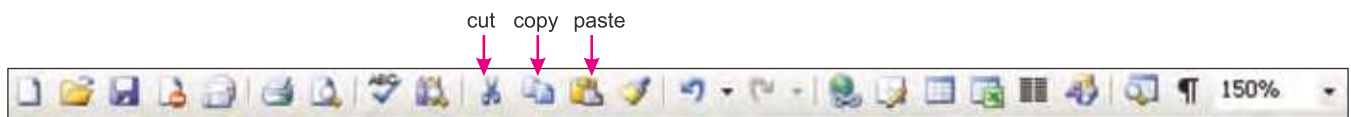


Practical 2.6 CUTTING, COPYING AND PASTING TEXT

Cut, Copy, Paste

These features allow copying or moving a block of text (a word, sentence, paragraph, page, document, or graphics) within a document or to another document.

Standard toolbar contains buttons for these features as shown:



Cut and Paste:

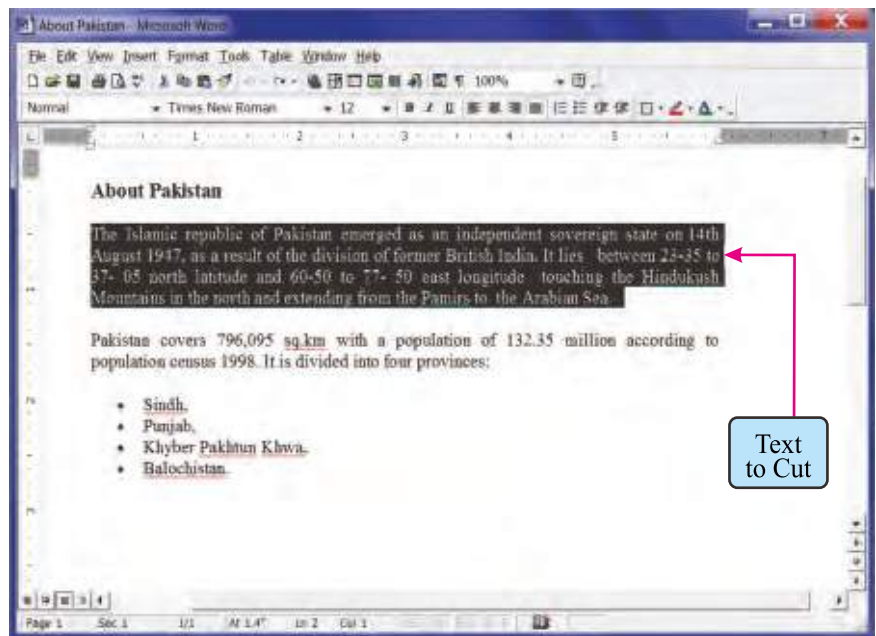
The **Cut**  Command allows deleting selected text from the document.

The **Paste**  Command allows placing the cut text in another location in the same document or even into another document.

Copy and Paste:

The **Copy**  Command allows copying selected text from the screen.

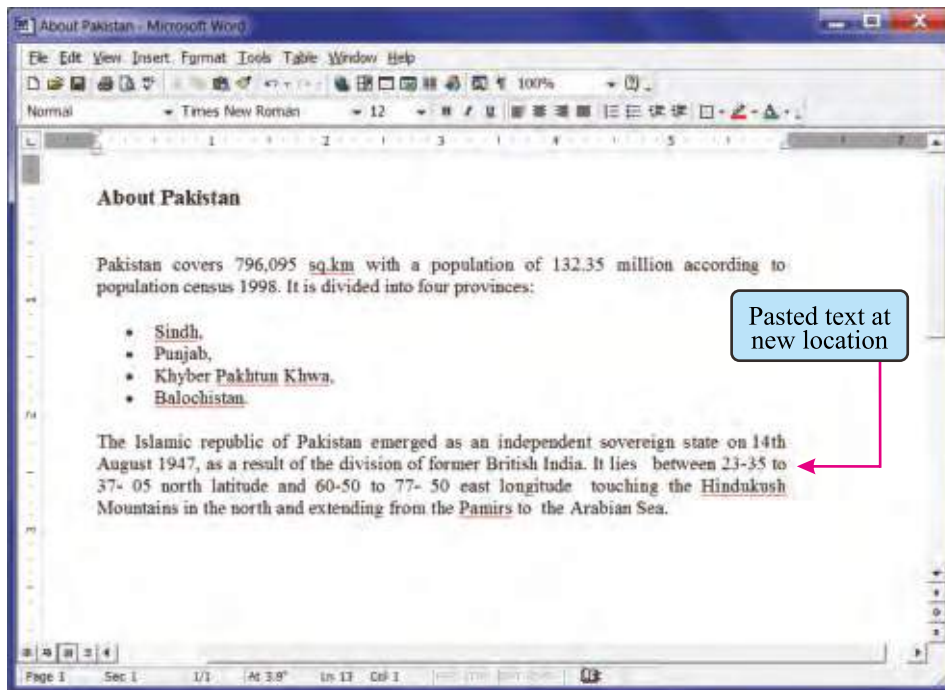
The **Paste**  Command allows placing the copied text in another location in the same document or even into another document.



To Cut and Paste a Block of Text:

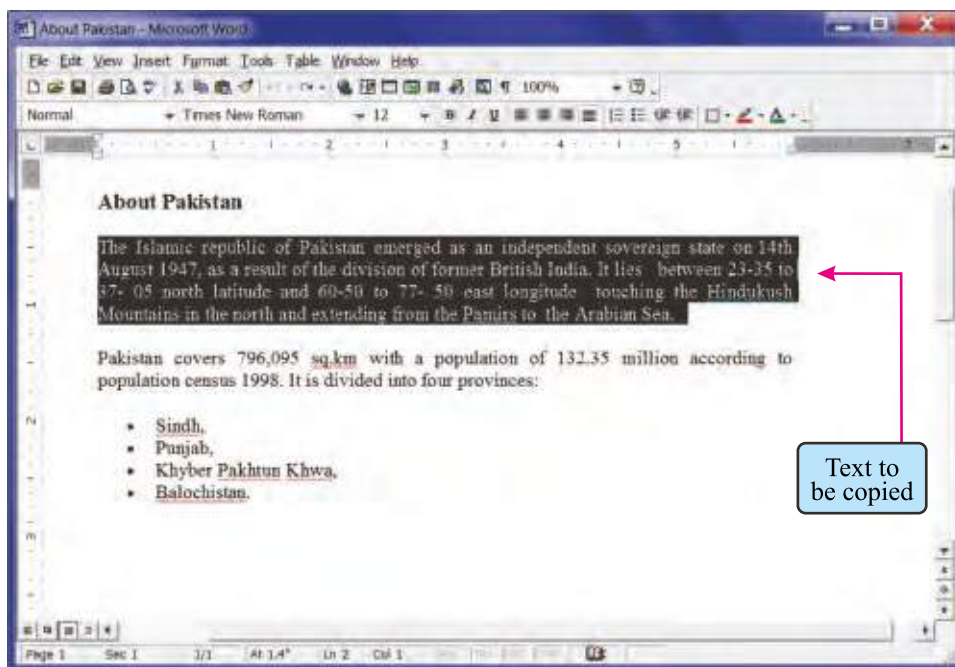
- Select the text to be moved.
- Click the Cut button on the Standard toolbar .

- Place the insertion point where the text is to be inserted.
- Click the **Paste**  button on the Standard toolbar.

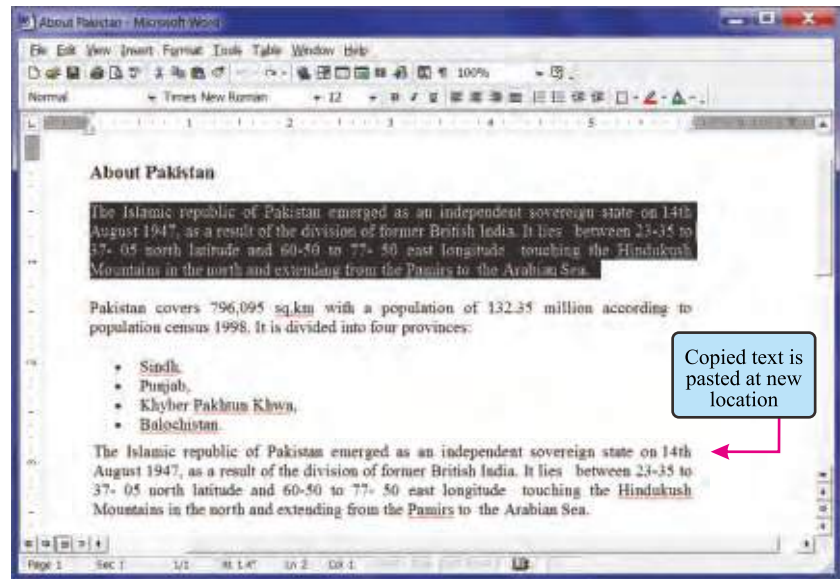


To Copy and Paste a Block of Text:

- Select the text to be copied.
- Click the **Copy**  button on the Standard toolbar.



- Place the insertion point where to insert the text.
- Click the **Paste** button on the Standard toolbar.



Other method to use Cut, Copy and Paste:

- Edit → Cut
- Edit → Copy
- Edit → Paste

Keyboard Shortcuts to perform Cut, Copy, Paste:

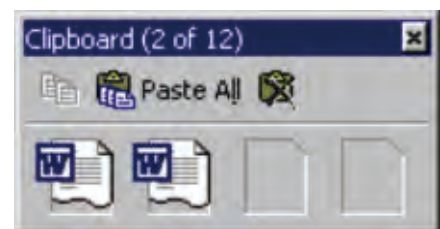
- Ctrl + C = Copy
- Ctrl + X = Cut
- Ctrl + V = Paste



Clipboard

The **clipboard** is a feature on Microsoft Word that temporarily stores text or pictures which user has copied or cut. The **last 12 elements** that were cut or copied are placed onto MS-Word's clipboard. User can view the elements on the clipboard by:

- Selecting **View** and then **Toolbars** and then **Clipboard** from the Menu bar.
- Place the mouse arrow over each element in the **clipboard** to view the contents of each item.
- Click on an element to add its contents to the document.
- Click **Paste All** to add all of the items to the document at once. Click the Clear Clipboard button (the icon with an "X" over the clipboard image) to clear the contents of the clipboard.



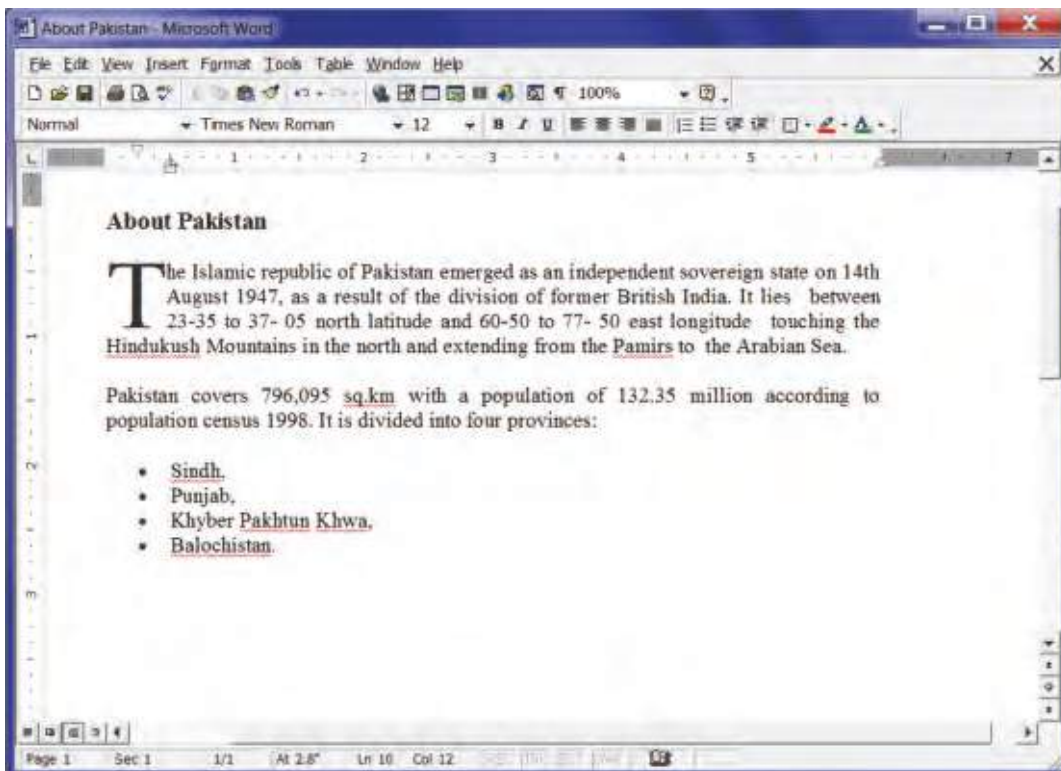
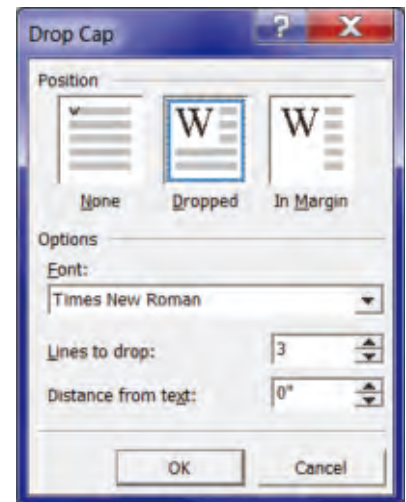


Drop Cap

A drop cap is a large letter that begins a paragraph and drops through several lines of text as shown.

Add a drop cap to a paragraph by following these steps:

- Place the cursor within the paragraph whose first letter will be dropped.
- Select **Format** and then **Drop Cap** from the Menu bar.
- The **Drop Cap** dialog box allows users to select the position of the drop cap, the font, the number of lines to drop, and the distance from the body text.
- Click **OK** when all selections have been made.
- To modify a drop cap, select **Format** and then **Drop Cap** again to change the attributes, or click on the letter and use the handles to move and resize the letter.



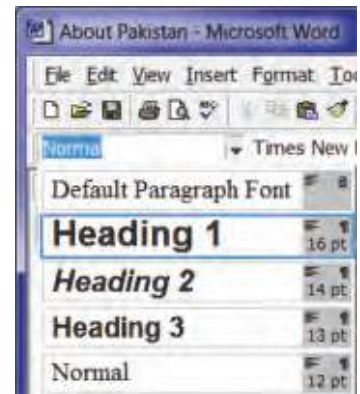


Styles

The use of styles in MS-Word allows users to quickly format a document with a consistent and professional look. Paragraph and character styles can be saved to use in many documents.

Applying a Style

- Place the cursor in the paragraph where the style will be applied.
- Click the Style drop-down menu on the Formatting toolbar and select a style by clicking on it.
- To apply the same style to multiple paragraphs, double click the Format Painter button on the Standard toolbar and click in all the paragraphs that the style should be applied to.
- Press the **ESC** key to disable the **Format Painter**.



Apply a Style from the Style Dialog Box

- Choose from a larger selection of styles from the **Style** dialog box.
- Click on the paragraph, user wants to add a style to.
- Select **Format** and then **Style** from the Menu bar.
- From the List drop-down menu, choose **All styles** to view all the styles available.
- The styles are displayed in the Styles list. Preview each style by clicking once on the name. Paragraph styles are preceded by the paragraph symbol (¶) and character styles are preceded by an "a" icon.
- A pointer arrow is located next to the current style. Highlight the style to apply to the paragraph and click **Apply**.



Create a Simple Style from the Style Dialog Box

Select **Format** and then **Style** from the Menu bar and click the **New** button on the **Style** dialog box to access the New Style dialog box.

- Type the name for the new style in the **Name** field.

- Select "Paragraph" or "Character" from the Style type drop-down menu.
- Click the **Format** button at the bottom of the window and choose the paragraph element that will be formatted for the style.
- Continue to make changes from the options from the Format button menu, making changes to the dialog boxes for each element user chooses.
- Click **OK** to set the style and close the **New Style** dialog box.
- Click **Apply** on the **Style** dialog box to apply the new style to the current paragraph.



Modify or Rename a Style

An existing style can be changed from the **Style** dialog box.

- Select **Format** and then **Style** from the Menu bar.
- Highlight the style from the Styles list that to modify and click the Modify button.
- Use the same methods to modify the style from the **Modify Style** dialog box that were used for the **New Style** box.
- To only rename the style, type a new name in the Name field.
- Click **OK** when you have finished making modifications.
- Click **Apply** to update the style in the document.



Delete a Style

- Preset styles created by MS-Word cannot be deleted, but to delete a style the user has made, follow these steps:
- Select **Format** and then **Style** from the Menu bar.
- Highlight the style from the **Styles** list to delete.
- Click the **Delete** button.
- Users will be asked if they really want to delete the style. Click **Yes**.
- Click **Close** on the dialog box.

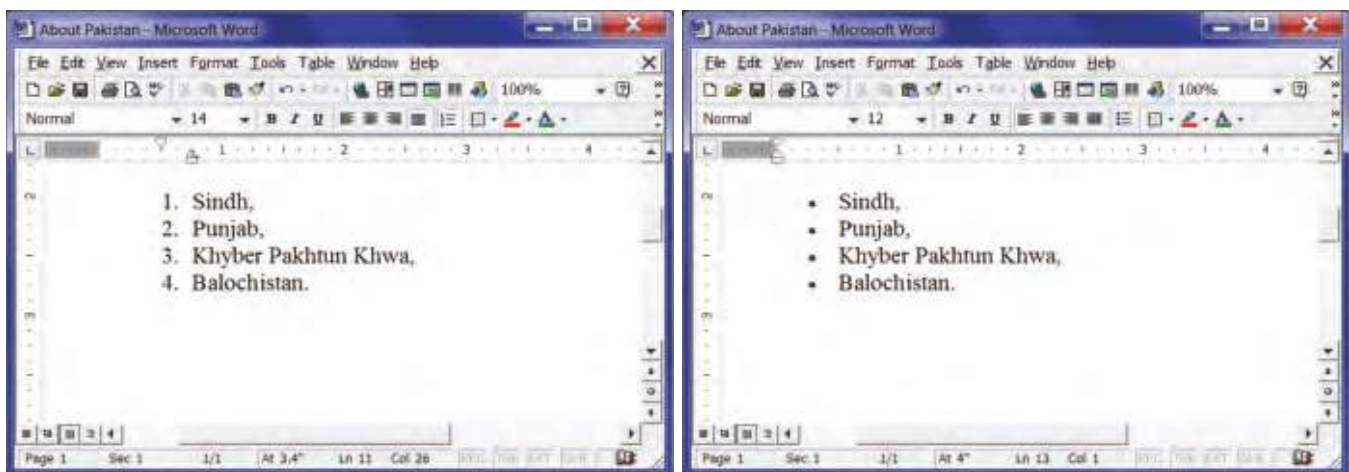


Lists

To create a bulleted or numbered list, use the list features provided by MS-Word.

Bulleted and Numbered Lists

- Click the **Bulleted List** button  or **Numbered List** button  on the Formatting toolbar.
- Type the first entry and press **ENTER**. This will create a new bullet or number on the next line. If user wants to start a new line without adding another bullet or number, hold down the **SHIFT** key while pressing **ENTER**.
- Continue to typing entries and press **ENTER** twice when the list is finished.



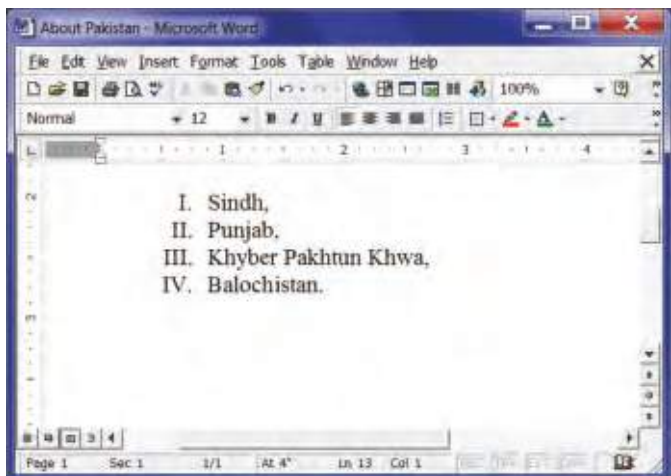
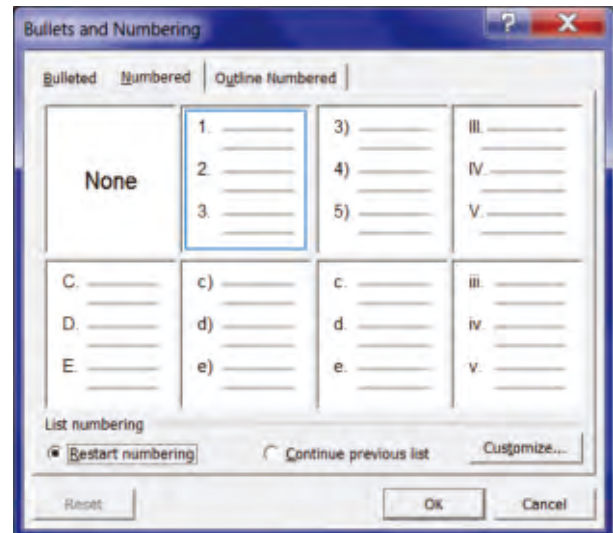
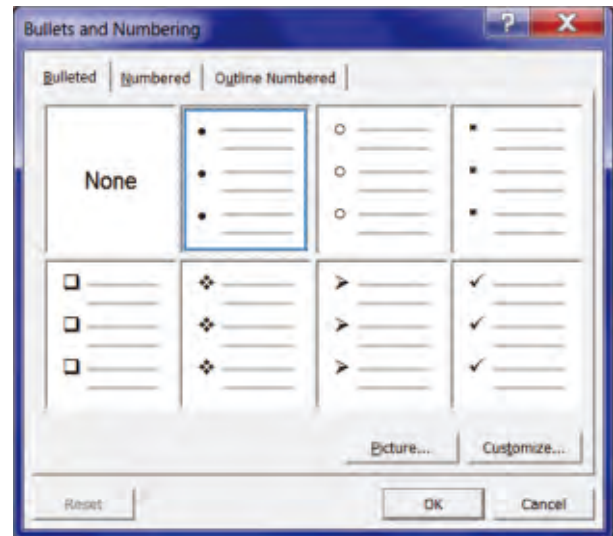
Nested Lists

To create a nested list, such as a numbered list inside of a bulleted list, follow these steps:

- Type the list and increase the indentation of the items that will make up the nested list by clicking the Increase Indent button for each item.
- Highlight the items and click the Numbered List button on the Formatting toolbar.

Formatting Lists

- The bullet image and numbering format can be changed by using the **Bullets and Numbering** dialog box.
- Highlight the entire list to change all the bullets or numbers, **OR**
- Place the cursor on one line within the list to change a single bullet.
- Access the dialog box by selecting **Format** and then **Bullets and Numbering** from the Menu bar. **OR**
- By right-clicking within the list and selecting **Bullets and Numbering** from the shortcut menu.
- Select the list style from one of the seven choices given, or click the **Picture** button to choose a different icon. Click the **Numbered** tab to choose a numbered list style.
- Click **OK** when finished.





Tables

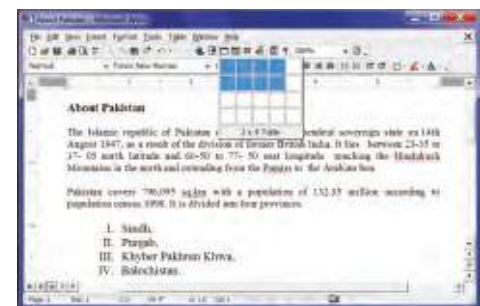
Tables are used to display data and there are several ways to build them in MS-Word.

Insert a Table

There are two ways to add a table to the document, begin by placing the cursor where user wants the table to appear in the document and choose one of the following methods.

Using the Insert feature:

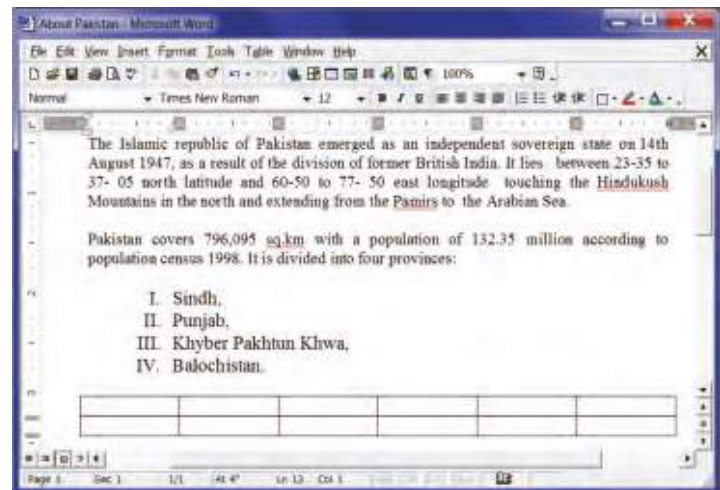
- Click the **Insert Table** button on the Standard toolbar. Drag the mouse along the grid, highlighting the number of rows and columns for the table. **OR**
- Select **Table** and then **Insert** and then **Table** from the Menu bar. Select the number of **rows** and **columns** for the table and click **OK**.



Draw the Table

A table can also be drawn onto the document:

- Draw the table by selecting **Table** and then **Draw Table** from the Menu bar. The cursor is now the image of a pencil and the **Tables and Borders** toolbar has appeared.
- Draw the cells of the table by using the mouse. If user makes a mistake, click the Eraser button  and drag the mouse over the area to be deleted.
- To draw more cells, click on the Draw Table button .



Inserting Rows and Columns

Once the table is drawn, insert additional rows by placing the cursor in the row user wants to be adjacent to.



- Select **Table, Insert** and then **Rows Above** or **Rows Below**. **OR**
- Select an entire row and right-click with the mouse.

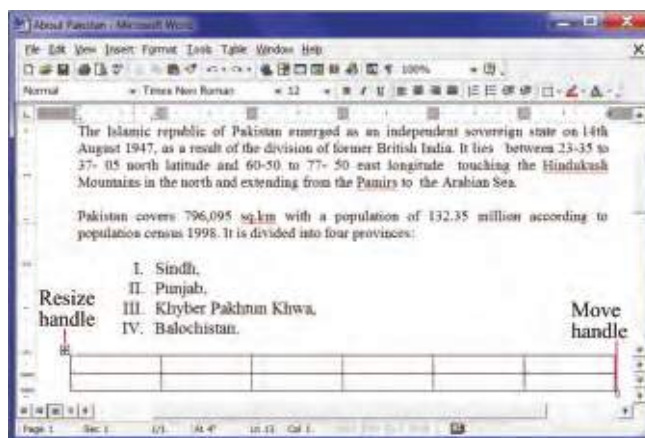
Choose **Insert Rows** from the shortcut menu. Much like inserting a row, add a new column by placing the cursor in a cell adjacent to where the new column will be added.

- Select **Table, Insert** and then **Columns to the Left** or **Columns to the Right**. **OR**
- Select the column, right-click with the mouse, and select **Insert Columns**.

Moving and Resizing a Table

A four-sided moving arrow and open box resizing handle will appear on the corners of the table if the mouse is placed over the table.

- Click and drag the four-ended arrow to move the table and release the mouse button when the table is positioned where you want it.
- Click and drag the open box handle to resize the table.
- Change the column width and row height by clicking the cell dividers and dragging them with the mouse.



Tables and Borders Toolbar

The Tables and Borders toolbar allows users to add border styles, shading, text effects, alignment, and more options to the table.

- Access the toolbar by clicking **Table** and then **Draw Table** on the Menu bar. **OR**
- Choose **View** and then **Toolbars** and then **Tables and Borders** from Menu bar.
- Highlight the cells of the table to format.
- Click and drag the mouse over the cells. **OR**
- Use the following shortcuts:

Selection	Menu Method	Mouse Method
One cell	Table, Select and then Cell	Click the bottom, left corner of the cell when a black arrow appears
One row	Table, Select and then Row	Click outside the table to the left of the row
One column	Table, Select and then Column	Click outside the table above the column when a black arrow appears
Several rows	(none)	Click outside the table to the left of the row and drag the mouse down
Several columns	(none)	Click outside the table above the column
Entire table	Table, Select and then Table	Triple-click to the left of the table

Table Properties

Use the Table Properties dialog box to modify the alignment of the table with the body text and the text within the table. Access the box by selecting **Table** and then **Table Properties** from Menu bar.

Size

Check the Preferred width box or enter a value if the table should be an exact width.

Alignment

Highlight the illustration that represents the alignment of the table in relation to the text of the document.

Text wrapping

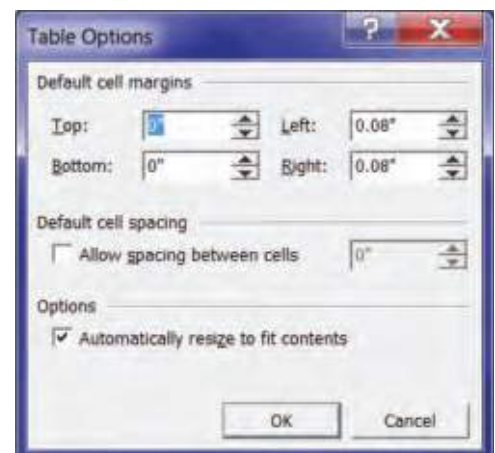
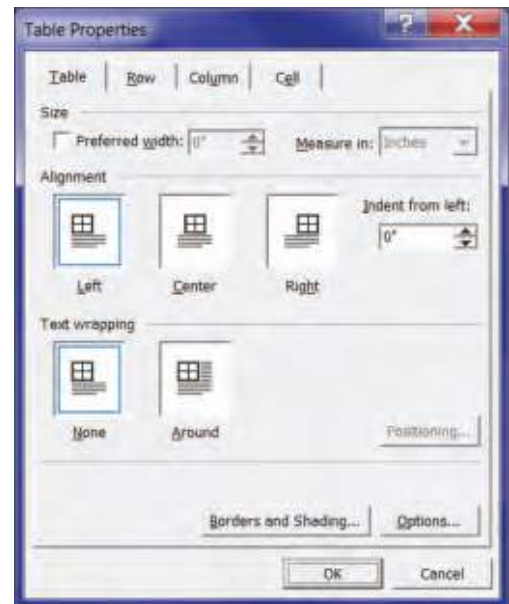
Highlight "None" if the table should appear on a separate line from the text or choose "Around" if the text should wrap around the table.

Borders and Shading

Click the Borders and Shading button on the Table properties window to change the Borders and Shading. Select from a number of border styles, colors, and widths. Click the Shading tab to change the background color and pattern.

Options

Click the **Options** button on the **Table Properties** window to change the spacing between the document text and the table borders under **Default cell margins**. Check the **Allow spacing between cells** box and enter a value to add space between the table cells.



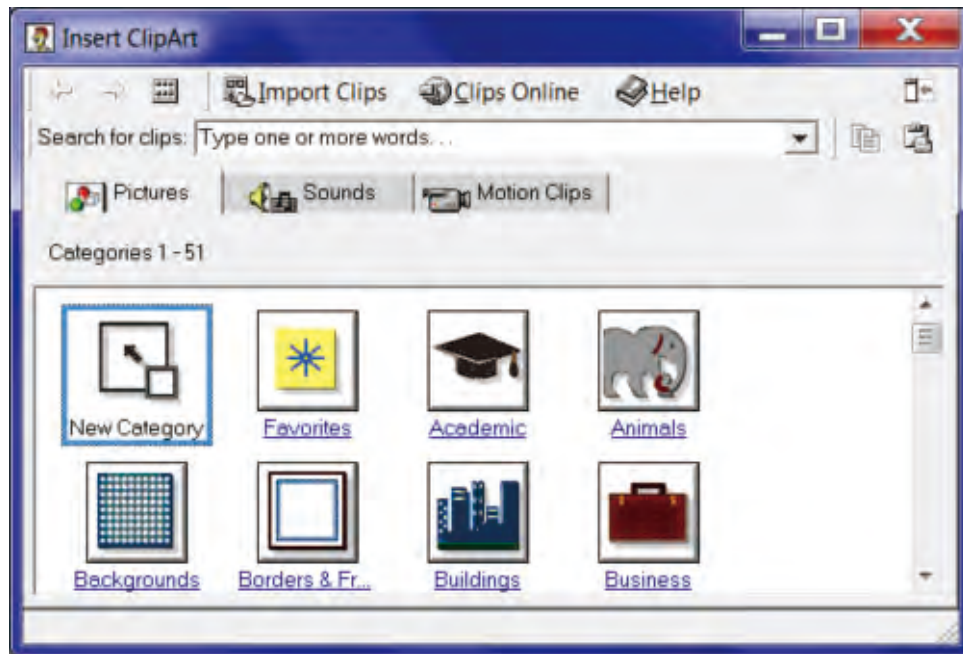


Inserting ClipArt

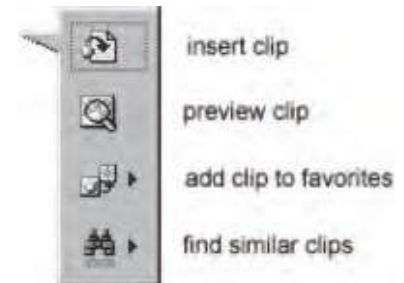
ClipArt is a collection of pictures or images that can be imported into a document or another program. **ClipArt** is typically organized into categories, such as people, objects, nature, etc., which is especially helpful when browsing through thousands of images.

To add a **ClipArt** image from the Microsoft library to a document, follow these steps:

- Select **Insert** and then **Picture** and then **Clip Art** from the Menu bar.



- To find an image, click in the white box following Search for clips. Delete the Words "Type one or more Words. . ." and enter key Words describing the image user wants to use. **OR**
- Click one of the **category** icons.
- Click on the image user wants to add to the document and the following **pop-up** menu will appear:
- **Insert Clip** to add the image to the document.
- **Preview Clip** to view the image full-size before adding it to the document. Drag the bottom, right corner of the preview window to resize the image and click the "x" close button to end the preview.



- **Add Clip to Favorites** option will add the selected image to users' favorites directory that can be chosen from the **Insert ClipArt** dialog box.
- **Find Similar Clips** will retrieve images similar to the one user has chosen.
- Continue selecting images to add to the document and click the Close button at the top, right corner of the **Insert ClipArt** window to stop adding clipart to the document.



Insert an Image from a File

Follow these steps to add a image or graphic from an existing file:

- Select **Insert** and then **Picture** and then **From File** from the Menu bar.
- Click the down arrow button on the right of the **Look in:** window to find the image on the computer.
- Highlight the file name from the list and click the **Insert** button.



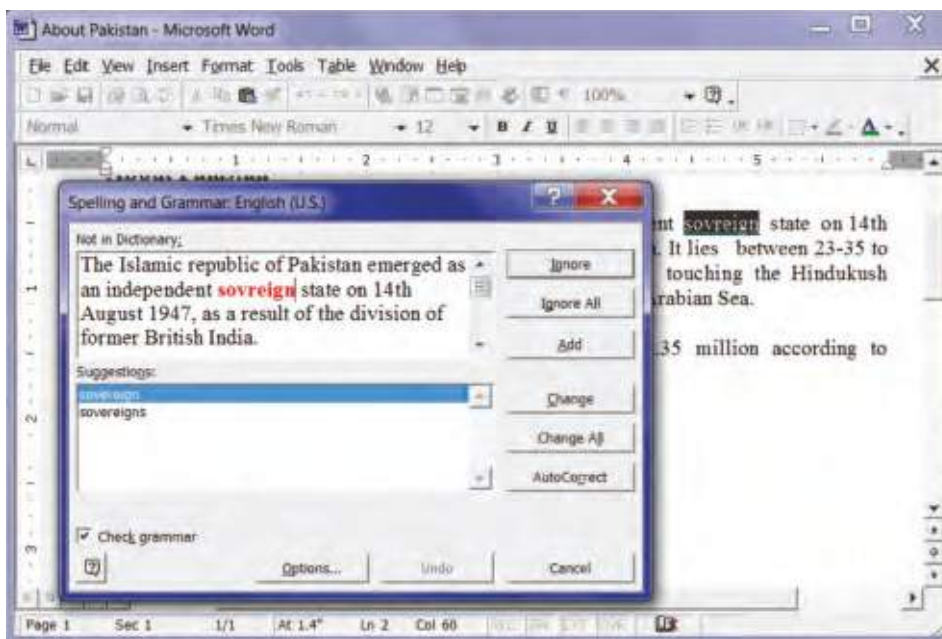


Spelling and Grammar Check

MS-Word will automatically check for spelling and grammar errors as user types unless this feature is turned off. Spelling errors are noted in the document with a red wavy underline. Grammar errors are indicated by a green wavy underline.

To use the spelling and grammar checker, follow these steps:

- Select **Tools** and then **Spelling and Grammar** from the Menu bar. **OR**
- Press **F7** key on the keyboard.
- The **Spelling and Grammar** dialogue box will notify the first mistake in the document and misspelled words will be highlighted in red.

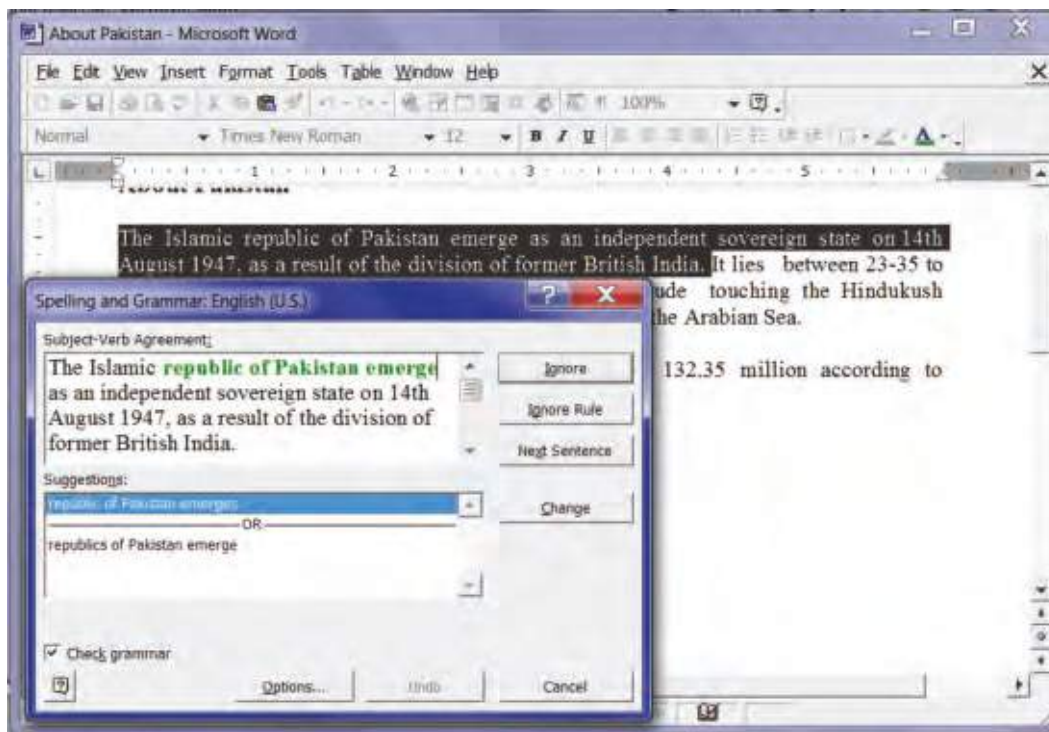


- If the word is spelled correctly, click the **Ignore** button or click the **Ignore All** button if the word appears more than once in the document.
- If the word is spelled incorrectly, choose one of the suggested spelling in the **Suggestions** box and click the **Change** button or **Change All** button to correct all occurrences of the word in the document. If the correct spelling is not suggested, enter the correct spelling in the **(Not In Dictionary)** box and click the **Change** button.

- If the word is spelled correctly and will appear in many documents (such as your name), click the **Add** button to add the word to the dictionary so it will no longer appear as a misspelled word.

As long as the **Check Grammar** box is checked in the **Spelling and Grammar** dialogue box, MS-Word will check the grammar of the document in addition to the spelling. If users do not want the grammar checked, remove the checkmark from this box. Otherwise, follow these steps for correcting grammar:

- If MS-Word finds a grammar mistake, it will be shown in the box as the spelling errors. The mistake is highlighted in green text.



Several suggestions may be given in the **Suggestions** box. Select the correction that best applies and click **Change**.

If no correction is needed (word is often wrong more than it is right), click the **Ignore** button.

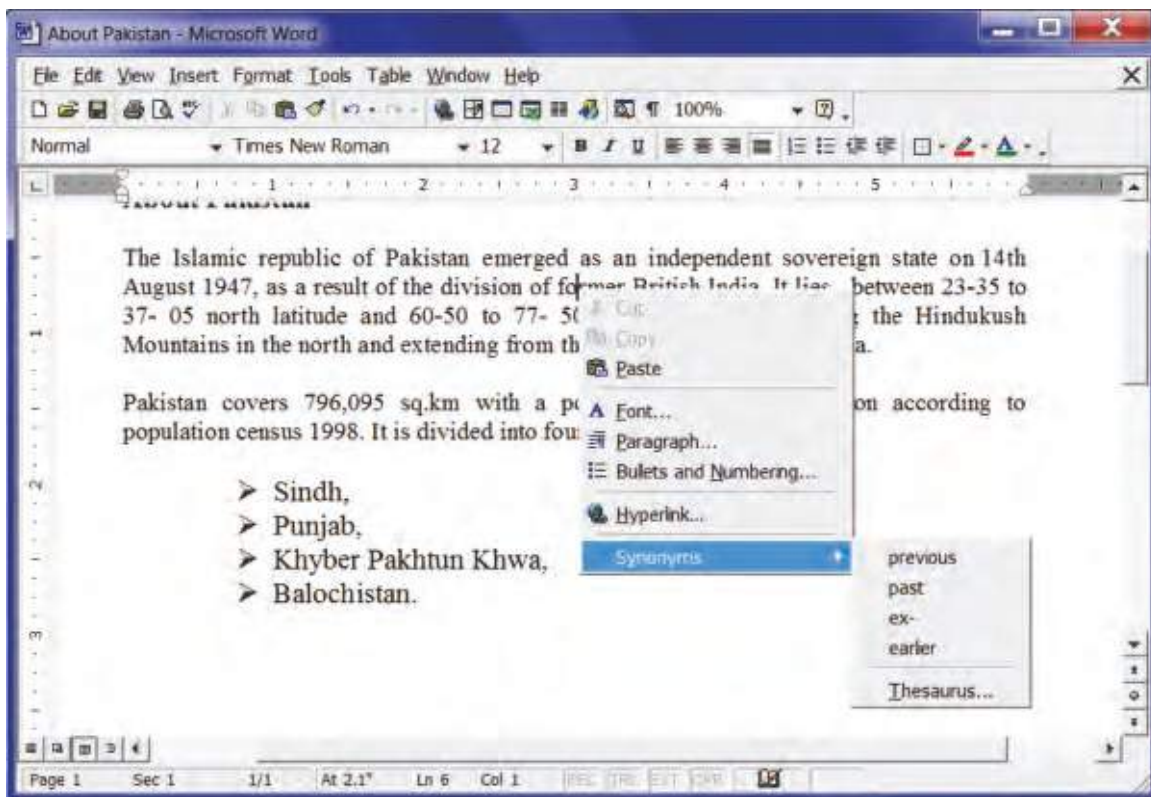
Practical 2.13 FINDING AND REPLACING SYNONYMS AND USING THESAURUS

Synonyms

Synonyms are words with the same or similar meanings. MS-Word has a feature for finding synonyms.

To use synonyms feature:

- **Right-click** on the word and a list of **Synonyms** will appear as a shortcut menu.
- From the list of suggested words, highlight the required word to be used or click.



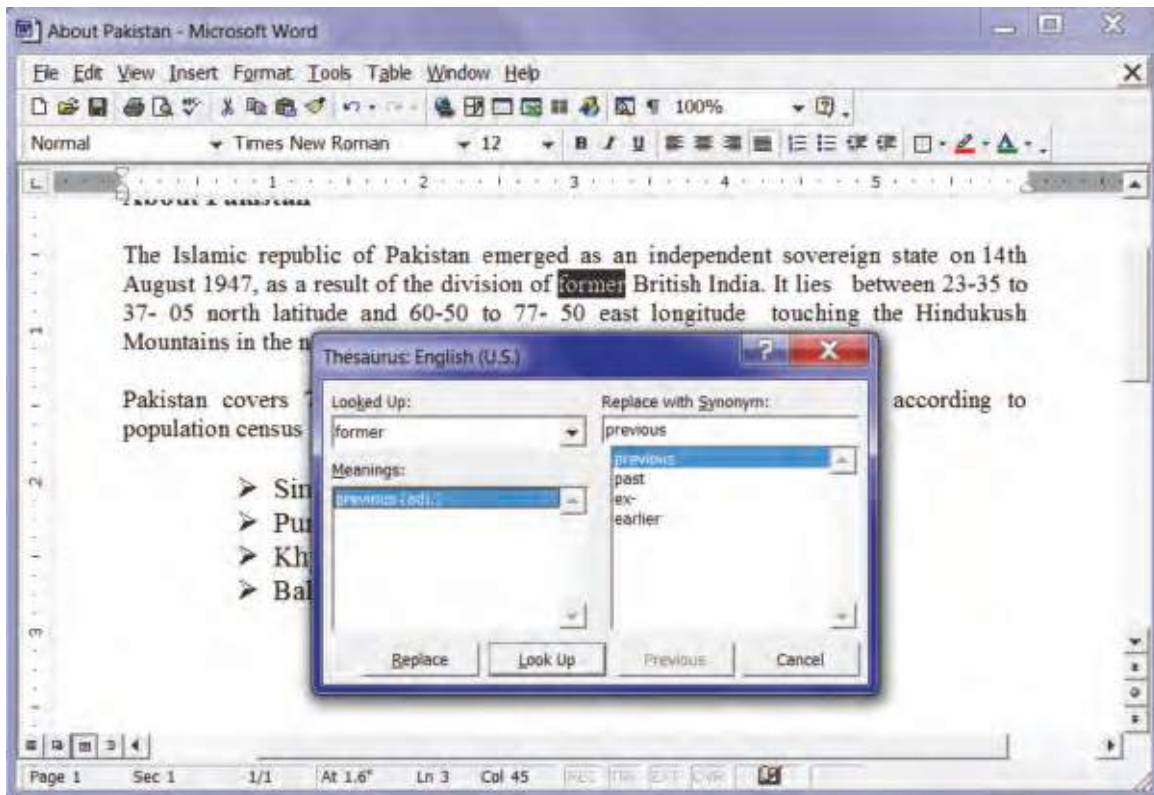
Thesaurus:

A **Thesaurus** is a dictionary of synonyms, words and phrases that mean the same thing as a particular word or phrase. MS-Word comes with a thesaurus feature that enables users to look up both synonyms and meanings. Using Word's thesaurus feature can help users add more variety to writing and suggest words and phrases that readers can better understand.

Here's how to use Word's thesaurus feature.

To use the thesaurus:

- Select **Tools** and then **Language** and then **Thesaurus** from the Menu bar. **OR**
- Press **Shift + F7** from the keyboard.
- A list of meanings and synonyms are given on the windows. Double-click on the words in the **Meanings** box. **OR**
- Click the **Look Up** button to view similar words.
- Double-click words in the **Replace with Synonym** box to view synonyms of those words.
- Highlight the required word to add and click the **Replace** button.





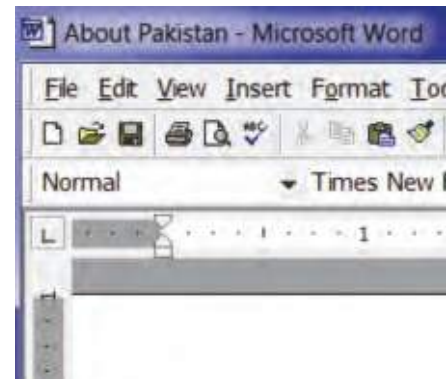
Page Margins

The page margins of the document can be changed using the **rulers** on the page and the Page Setup window. The ruler method is discussed first:

- Move the mouse over the area where the white ruler changes to grey.

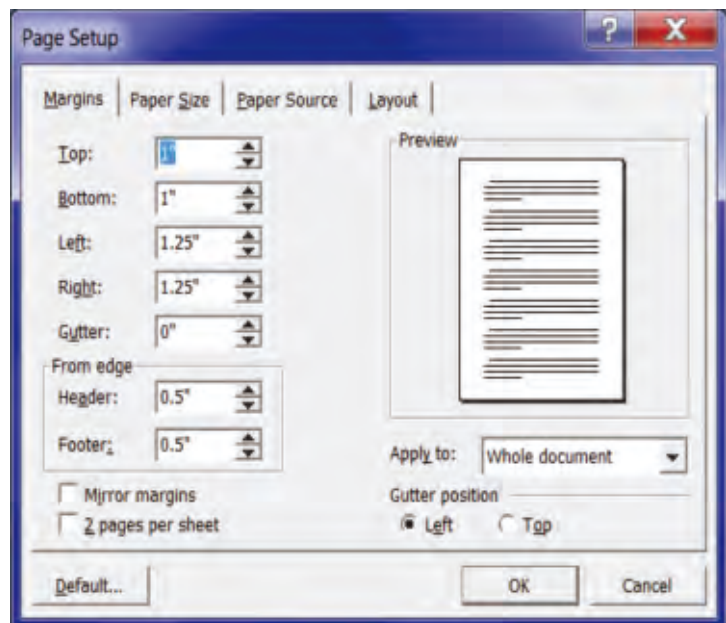
When the cursor becomes a double-ended arrow, click with the mouse and drag the margin indicator to the desired location.

- Release the mouse when the margin is set.



The margins can also be changed using the Page Setup dialogue box:

- Select **File** and then **Page Setup** from Menu bar and choose the **Margins** tab in the dialog box.
- Enter margin values in the Top, Bottom, Left, and Right boxes. The Preview window will reflect the changes.
- If the document has Headers and/or Footers, the distance of this text from the edge of the page can be changed.
- Click **OK** when finished.

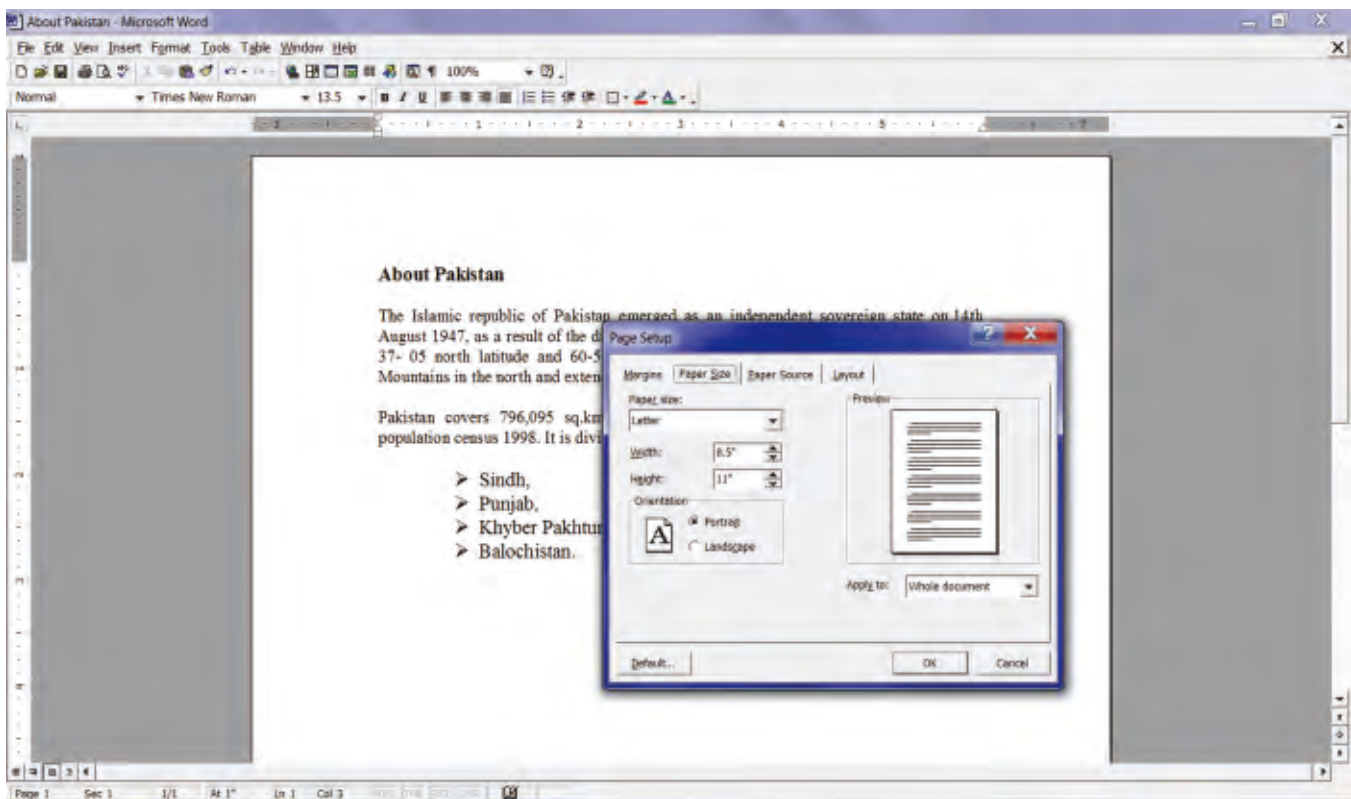




Page Size and Page Orientation

Change the page size and orientation within the **Page Setup** dialog box.

- Select **File** and then **Page Setup** and choose the **Paper Size** tab.
- Select the proper paper size using the drop-down menus.
- Change the **orientation** from **Portrait** or **Landscape** by checking the corresponding radio button.



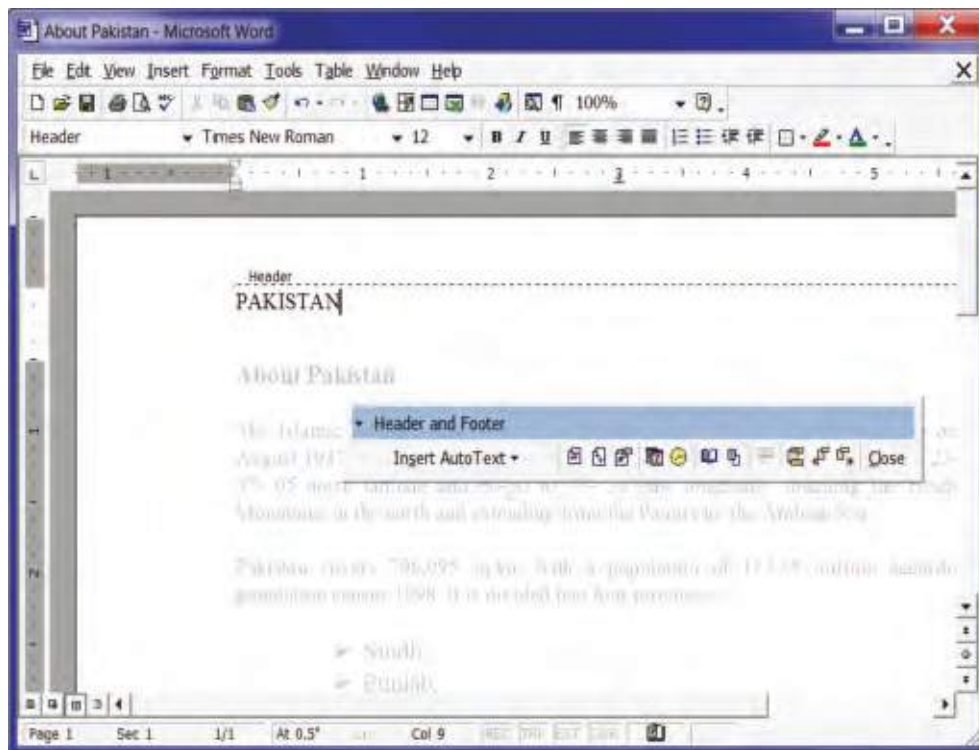


Header and Footer

A header is text that is added to the top margin of every page such as a document title or page number and a footer is text added to the bottom margin.

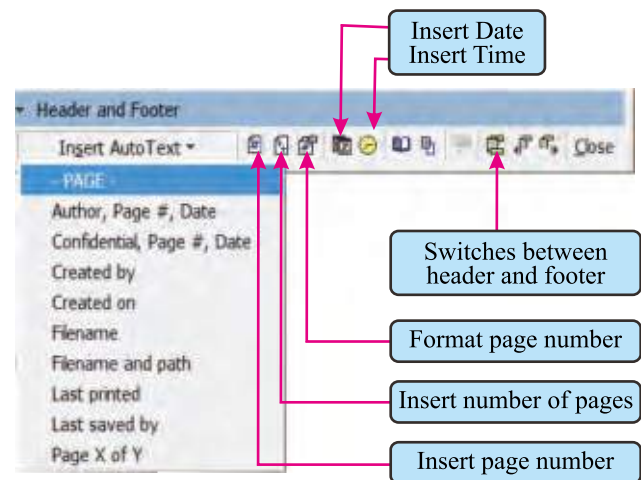
Follow these steps to add or edit headers and footers in the document:

- Select **View** and then **Header and Footer** from the Menu bar. The **Header and Footer toolbar** will appear and the top of the page will be highlighted as shown below.



- Type the heading in the **Header box**. User may use many of the standard text formatting options such as font face, size, bold, italics, etc.
- Click the **Insert AutoText** button to view a list of quick options available.
- Use the other options on the toolbar to add page numbers, the current date and time, etc.

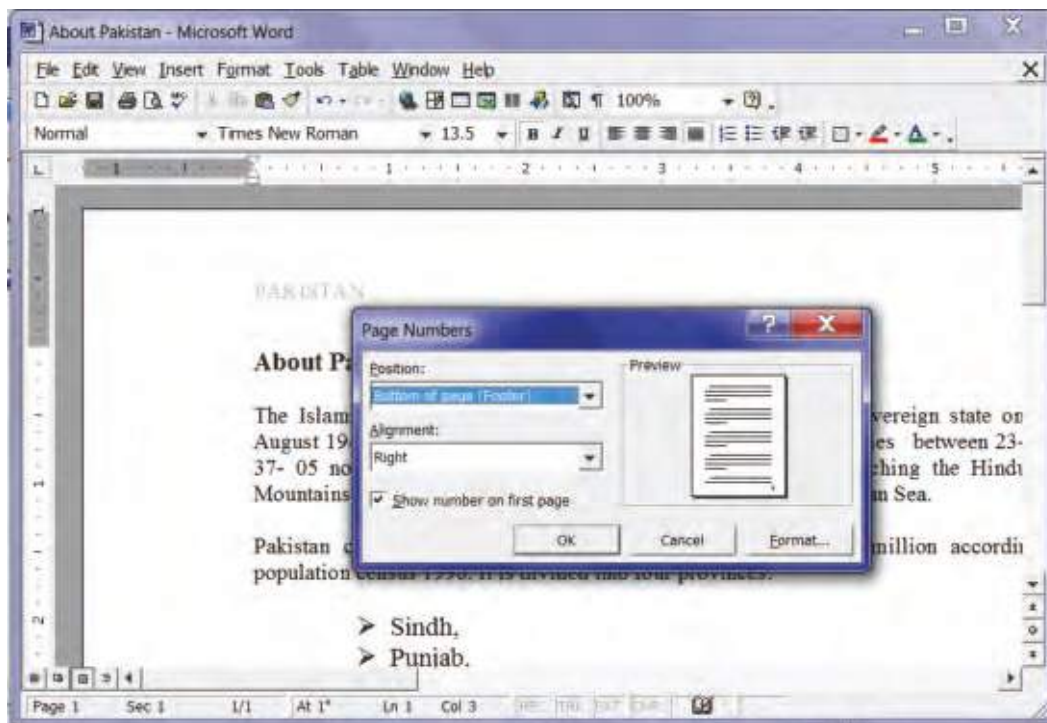
- To edit the footer, click the **Switch Between Header and Footer** button on the toolbar.
- When user has finished adding header and footer, click the **Close** button on the toolbar.



Page Numbers

Follow these instructions for another way to add page numbers to a document.

- Select **Insert** and then **Page Numbers** from the Menu bar and the following dialog box will appear.
- Select the position of the page numbers by choosing "**Top of page**" or "**Bottom of page**" from the **Position** drop-down menu.
- Select the alignment of the page numbers in the **Alignment** drop-down menu.
- If user does not want the page number to show on the first page (if it is a title page, for example), uncheck the **Show number of first page** box.
- Click **OK** when finished.





Print Preview and Printing

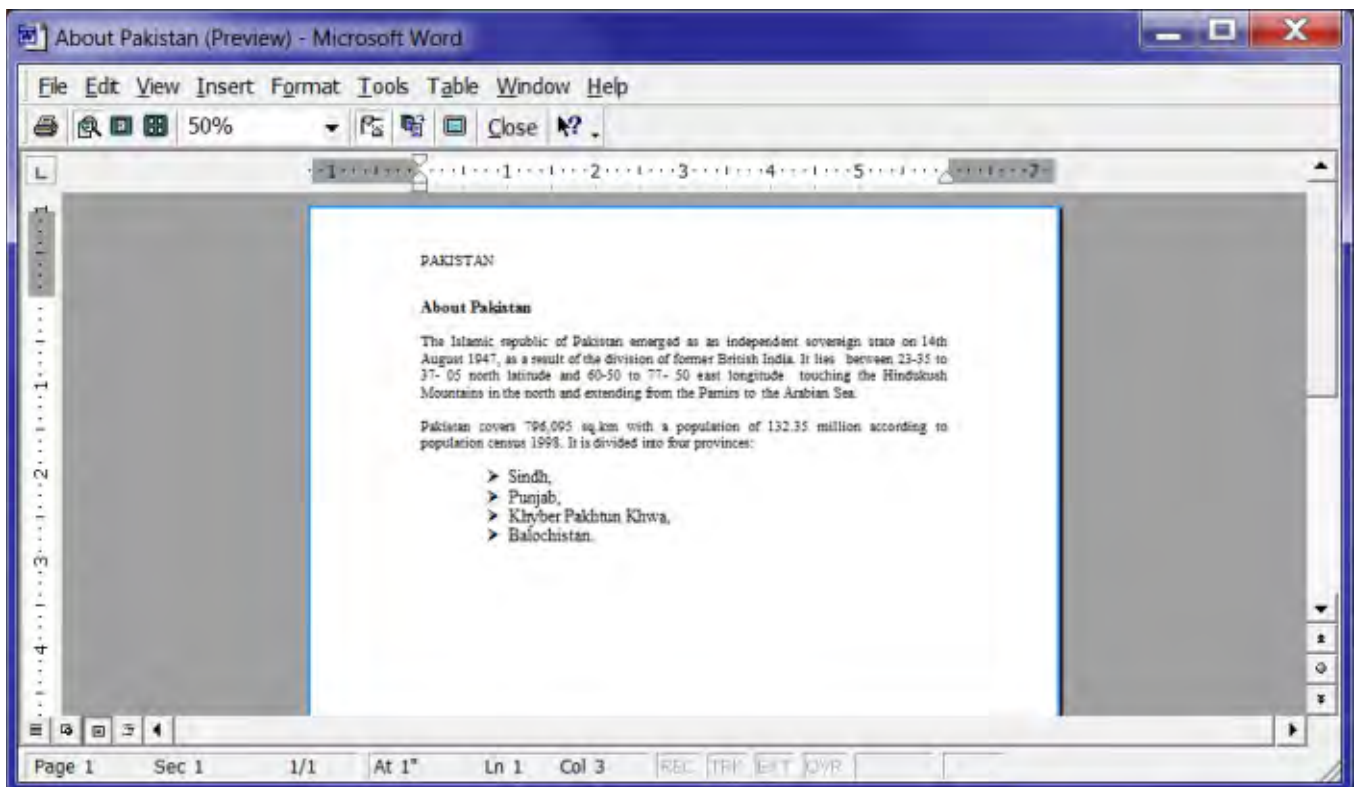
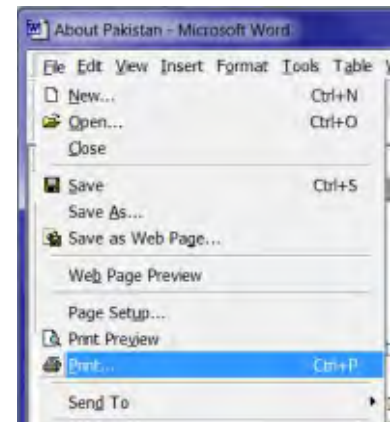
To Access Print Preview:

- Choose **File** and then **Print Preview** from the menu bar. **OR**

Use the Toolbar:

- Click the **Print Preview** button  on the **Standard** toolbar.

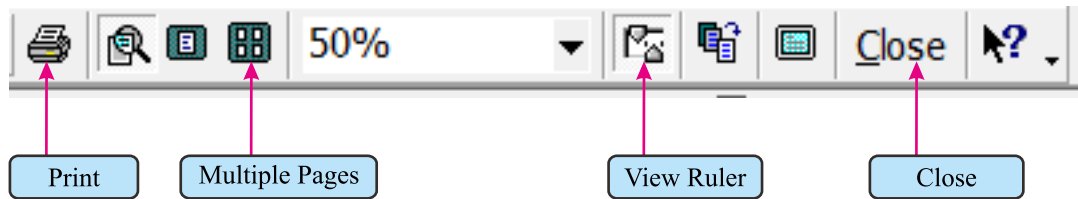
Once the user has accessed **Print Preview**, the document will now be in **Print Preview mode**. It will look something like this:



Print Preview mode displays how the file is formatted. If user likes to take a closer look, use the **Zoom** feature. The Zoom feature "zooms" closer, giving a better view of the document.

Let's "zoom" in and take a look at the **Print Preview** toolbar:

- The **Print** button prints a file.



- The **View Ruler** button displays the Vertical or Horizontal rulers. Rulers help edit margin settings.
- If the file consists of multiple pages, the **Multiple Pages** button allows the user either view **one page** or several pages at a time.
- Use **Zoom**, and then use the **Scroll bars** to view the file.
- Use the **Shrink to Fit** button to "fit" the information to one page.
- If user wants to **Exit/Close** Print Preview, simply click **Close** on the **Print Preview** toolbar.



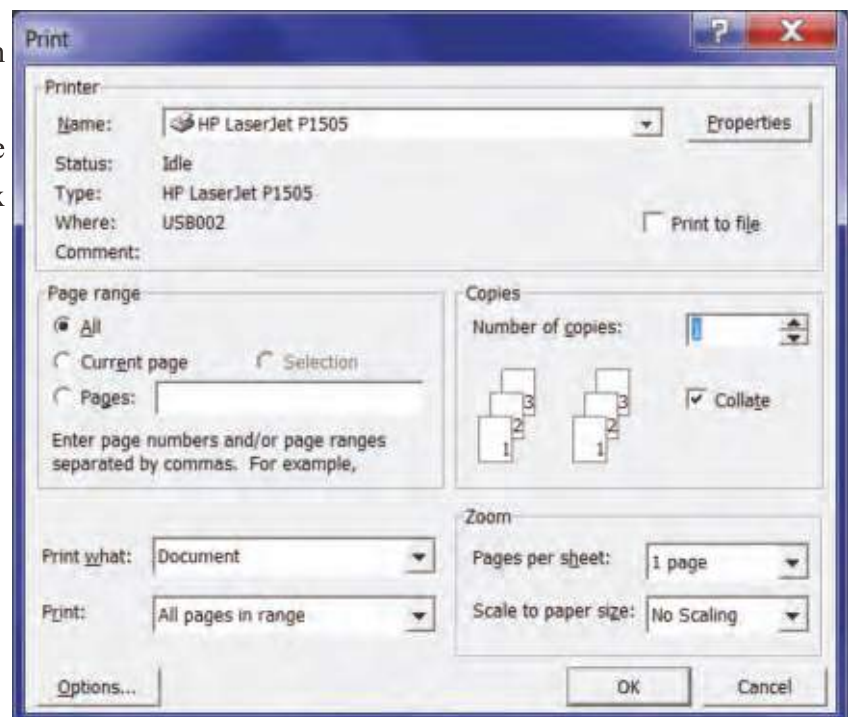
Printing Your Work

To Print a document:

- Choose **File** and then **Print** from the menu bar. **OR**
- Press (Ctrl + P) shortcut on the keyboard. The print dialog box **will** appear.
- Click **OK**. **OR**

Use the Toolbar:

- Click the **Print**  button on the **Standard** toolbar.
- The file automatically prints. The print dialog box will **not** appear.



Keyboard Shortcuts

Keyboard shortcuts can save time and the effort of switching from the keyboard to the mouse to execute simple commands. Print this list of MS-Word keyboard shortcuts and keep them for a quick reference.

Note: A plus sign indicates that the keys need to be pressed at the same time.

Action

Open a file

New file

Close a file

Save As

Save

Print Preview

Print

Show/Hide paragraph symbols

Spelling and grammar

Help

Find

Replace

Go To

Keystroke

CTRL + O

CTRL + N

CTRL + W

F12

CTRL + S or SHIFT+F12

CTRL + F2

CTRL + P

CTRL + *

F7

F1

CTRL + F

CTRL + H

CTRL + G

Cursor movement

Select all - entire document

Select from cursor to beginning of line

Select from cursor to end of line

Go to beginning of line

Go to end of line

Go to beginning of document

Go to end of document

CTRL + A

SHIFT+ Home

SHIFT+ END

HOME

END

CTRL + Home

CTRL + End

Formatting

Cut

Copy

Paste

Undo

Redo

Format painter

CTRL + X

CTRL + C

CTRL + V

CTRL + Z

CTRL + Y

CTRL + SHIFT+ C

LEARNING KEYBOARD SHORTCUTS

Left alignment	CTRL + L
Center alignment	CTRL + E
Right alignment	CTRL + R
Justified	CTRL + J
Delete previous Word	CTRL + Backspace
Apply bulleted list	CTRL + SHIFT+L
Indent	CTRL + M
Page break	CTRL + Enter

Text Style

Font face	CTRL + SHIFT+F
Font size	CTRL + SHIFT+P
Bold	CTRL + B
Italics	CTRL + I
Underline	CTRL + U
Double underline	CTRL + SHIFT+D
Word underline	CTRL + SHIFT+W
All caps	CTRL + SHIFT+A
Change case	SHIFT+ F3
Subscript	CTRL + =
Superscript	CTRL + SHIFT+=
Make web hyperlink	CTRL + K

Tables

Go to next cell	Tab
Go to previous cell	SHIFT + Tab
Go to beginning of column	ALT + PageUp
Highlight to beginning of column	ALT + SHIFT+PageUp
Go to end of column	ALT + PageDown
Highlight to end of column	ALT + SHIFT+PageDown
Go to beginning of row	ALT + Home
Highlight to beginning of row	ALT + SHIFT+Home
Go to end of row	ALT + End
Highlight to end of row	ALT + SHIFT+End
Column break	CTRL + SHIFT+Enter

Miscellaneous

Copyright symbol - ©	ALT + CTRL + C
Date field	ALT + SHIFT+D
Go to footnotes	ALT + CTRL +F
Show/Hide	CTRL + SHIFT+8
Thesaurus	SHIFT + F7

All Shortcuts

This list shows only the most common keyboard shortcuts. To print a list of all the shortcuts in MS-Word, follow these steps:

- Select **Tools** and then **Macro** and then **Macros** from the menu bar.
- From the **Macros In drop-down** menu, select **Word Commands**.
- Select **List Commands** from the macro listing.
- Click the **Run** button.
- Choose **Current Menu and Keyboard Settings** from the popup window and click **OK**.
- MS-Word will automatically open a new document containing a table of keystrokes.
- Print the document.

Q.1 What is MS-Word?

Ans. Microsoft Word is the Word processing application in the Microsoft Office Suite. It is used to create professional-looking, formatted text documents. It allows users to create a variety of professional-looking documents such as letters, flyers, and more.

Q.2 Where is title bar located in Word window?

Ans. Title bar is located at the top of Word window. It displays the document name before a program name.

Q.3 Name few options available on menu bar.

Ans. File, Edit, View, Insert, etc.

Q.4 What is standard toolbar?

Ans. MS-Word Standard Toolbar consists of a group of buttons labeled with icons, like create a new document, open an existing document, save a document, print a document, preview what the printed output will look like, etc.

Q.5 What is formatting toolbar?

Ans. MS-Word Formatting Toolbar contains buttons used for formatting text. It consists of a group of buttons labeled with icons, like font, font size, font style, such as, bold, Italics, or underline, etc.

Q.6 What is Ruler?

Ans. MS-Word Ruler is used to set margins, indents, and tabs. It allows tab stops to be set.

Q.7 What is the use of Scroll bars?

Ans. These are used to view parts of the document. There are two types of scroll bars:

- **Horizontal scroll bar** is used to view the document from left to right.
- **Vertical scroll bar** is used to view the document from top to bottom.

Q.8 What is the use of Office Assistant?

Ans. It is used to open Microsoft Office Help feature. User can take help by typing the keyword through Office Assistant.

Q.9 How cursor can be moved at the top of the document?

Ans. By pressing Ctrl + Home shortcut key.

Q.10 How whole paragraph can be selected with the help of mouse?

Ans. By using triple-click within the paragraph.

Q.11 Which shortcut key is used to select the entire document?

Ans. Ctrl + A

Q.12 What is the difference between Backspace and Delete key?

Ans. **Backspace** key deletes text to the left of the cursor and **Delete** key erases text to the right.

Q.13 What is the function of Undo feature?

Ans. The Undo feature lets users to perform back step (the last change/action) made to the document.

Q.14 Which shortcut key is used to perform Undo?

Ans. Ctrl + Z

Q.15 What is the function of Redo feature?

Ans. The Redo feature allows users to reverse the last Undo.

Q.16 Which shortcut key is used to perform Redo?

Ans. Ctrl + Y

Q.17 What is Font?

Ans. Font is the typeface used to display characters.

Q.18 What is Font size?

Ans. Font Size refers to the size of the characters expressed in points.

Q.19 What is Font Style?

Ans. Font Style refers to the appearance of the font characters. These are bold, italic and underline.

Q.20 Which keyboard shortcuts are used for bold, italic and underline?

Ans. Ctrl + B, Ctrl + I and Ctrl + U respectively.

Q.21 Which options are used to align text?

Ans. Align Left, Align Center, Align Right and Align Justify.

Q.22 Which keyboard shortcuts are used for Align Left, Align Center, Align Right and Align Justify?

Ans. Ctrl + L, Ctrl + E, Ctrl + R and Ctrl + J respectively.

Q.23 What are Font Effects?

Ans. Font Effects formatting refers to special effects that change the appearance of characters. These options include strikethrough, double strikethrough, superscript, subscript, shadow, outline, emboss, engrave, small caps, all caps or hidden.

Q.24 What is the difference between Cut and Copy command?

Ans. Cut removes the selection completely from the destination while Copy creates the duplicate of the selection.

Q.25 Which shortcut keys are used for Cut, Copy and Paste?

Ans. Ctrl + X, Ctrl + C and Ctrl + V respectively.

Q.26 What is Clipboard?

Ans. The clipboard is a feature on Microsoft Word that temporarily stores text or pictures while user copy, cut, or paste them.

Q.27 What is Drop cap feature?

Ans. A drop cap is a large letter that begins a paragraph and drops through several lines of text.

Q.28 What are document styles?

Ans. The use of styles in MS-Word allows users to quickly format a document with a consistent and professional look. Paragraph and character styles can be saved to use in many documents.

Q.29 What is the use of Table feature in Word?

Ans. Tables are used to display data and there are several ways to build them in MS-Word.

Q.30 What is Clip Art?

Ans. Clip art is a collection of pictures or images that can be imported into a document or another program.

Q.31 Which function key is used to open Spelling and Grammar feature?

Ans. F7

Q.32 Which function key is used to open Thesaurus feature?

Ans. Shift + F7

Q.33 What are Synonyms?

Ans. Synonyms are words with the same or similar meanings.

Q.34 What are Thesaurus?

Ans. A Thesaurus is a dictionary of synonyms, words and phrases that mean the same thing as a particular word or phrase.

Q.35 How page margins can be changed in a document?

Ans. The page margins of the document can be changed using the rulers on the page and the Page Setup window.

Q.36 Name different page orientations in Word?

Ans. Portrait and Landscape.

Q.37 What is the use of a header and footer in a document?

Ans. A header is text that is added to the top margin of every page such as a document title or page number and a footer is text added to the bottom margin.

Q.38 Which keyboard shortcut is used to print an entire document?

Ans. Ctrl + P

MS-Word Sample Practical Questions

- Q.1** Type the following paragraphs and write down the stepwise procedure for questions given and also apply them:

FIRST GENERATION COMPUTERS

The first computer that used stored program concept was the Electronic Delayed Storage Automatic Computer (EDSAC) developed in 1949.

Another was the Electronic Discrete Variable Automatic Computer (EDVAC) that used the same concept. The program and data were fed in the EDVAC through punched paper tapes.

- i. Underline and center align the heading.
- ii. Change the alignment of the text as justified.
- iii. Format the word "EDSAC" and "EDVAC" as bold and italic.
- iv. Add a header "First Generation Computers" to the right side.
- v. Insert page number to the document.
- vi. Change the color of main heading to Red.

The keyboard is an important input device used to enter data and instructions into a computer. A standard arrangement of keys is the QWERTY arrangement. Popular keyboards have enhanced QWERTY arrangement. The two basic styles of keyboard are PC/XT-Style keyboards and AT-Style keyboards.

- i. Indent the first line of a paragraph by five spaces.
- ii. Change the line spacing to 1.5 lines.
- iii. Format the word "QWERTY" as bold.
- iv. Add a footer "KEYBOARD" to the Center.
- v. Underline and italic the text "PC/XT-Style" and "AT-Style".

- Q.2** Write down the stepwise procedure to **Cut** the text and **Paste** it in a document. Apply these steps by creating a document in MS-Word.
- Q.3** Write down the stepwise procedure to create a **Bulleted** list and write the characteristics of computer and apply the bulleted list on these characteristics.

- Q.4** Create a document in MS-Word and insert a table of size 5 rows and 6 columns. Write down the stepwise procedure in the answer book provided.
- Q.5** Create a document in MS-Word and insert a **Clipart** in it. Write down the stepwise procedure in the answer book provided.
- Q.6** Write down the stepwise procedure in the answer book provided to use the **Spelling and Grammar** feature to check the document. Type the following paragraph and apply Spelling and Grammar check on it.

Pakistan is a federal parliamentary republic consisting of four provinces and four federal territories. It is an ethnically and linguistically diverse country, with a similar variation in its geography and wildlife. A regional and middle power, Pakistan has the fourth largest standing armed forces in the world and is also a nuclear power as well as a declared nuclear state, being the only nation in the Muslim world, and the second in South Asia, to have that status. It has a semi-industrialized economy with a well-integrated agriculture. Its economy is the 26th largest in the world in terms of purchasing power and 45th largest in terms of nominal GDP and is also characterized among the emerging and growth-leading economies of the world.

- Q.7** Type the following paragraph and find **Synonyms** for the underlined words. Write down the stepwise procedure in the answer book provided.

A number of programs have been designed to protect software from viruses. These are called anti-virus programs. However, no anti-virus program guarantees protection against all viruses. Most anti-virus programs can be used to eliminate a virus found in a disk. Many computer users have installed these anti-virus programs on their computers. A good anti-virus program checks for infected files automatically every time you insert any kind of disk or use your modem to retrieve a file.

- Q.8** Write down the stepwise procedure to insert **Header**, **Footer** and **Page number** in a Word document. Also apply these steps by creating your document.

Q.9 Type the following paragraph and write down the stepwise procedure for questions given and also apply them.

Stand by:	In stand by mode, computer consumes less electric power but remains available for immediate use.
Shut down:	Use this option when you want to turn off your computer.
Restart:	Use this option when you want to restart your computer with new windows settings.

- i. Assign bullets to the sub-headings.
- ii. Change the alignment of the paragraph as justified.
- iii. Add suitable heading and centre align it.
- iv. Change the text colour of the paragraph to red.
- v. Format all the sub-headings as bold.