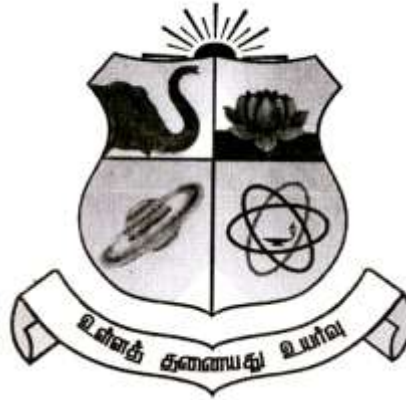


ARIGNAR ANNA GOVERNMENT ARTS AND SCIENCE COLLEGE

KARAIKAL – 609605



Introduction to Problem Solving using C

2020-21

I-Semester

Name : _____

Reg.No : _____

**DEPARTMENT OF COMPUTER SCIENCE
AAGASC - KARAIKAL**

**ARIGNAR ANNA GOVERNMENT ARTS AND
SCIENCE COLLEGE**

KARAIKAL – 609605.



DEPARTMENT OF COMPUTER SCIENCE

**Certified that this is the bonafide record of practical work done
by Mr. / Ms. _____ of 1st year B.Sc
Computer Science during the 1st Semester in the academic year 2020-
2021.**

HEAD OF THE DEPARTMENT

STAFF INCHARGE

Submitted for the University Examination held on

EXTERNAL EXAMINER

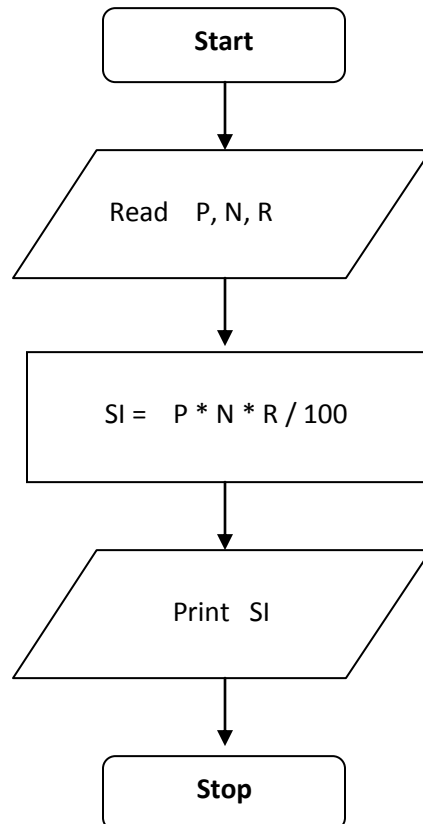
INTERNAL EXAMINER

TABLE OF CONTENTS

Sl. No.	Date	Name of Experiment	Page No.	Signature
1		Simple Interest	1	
2		Student Result	3	
3		Sum of Series	5	
4		Multiplication Table	7	
5		Number to Word	9	
6		Factorial Program	11	
7		Largest Numbers amount N Numbers	13	
8		Swapping using pointer	15	
9		String Manipulation	17	
10		File Handling	19	

Ex. No. : 1 Simple Interest

Aim : Draw flowchart and develop a c program to calculate simple interest

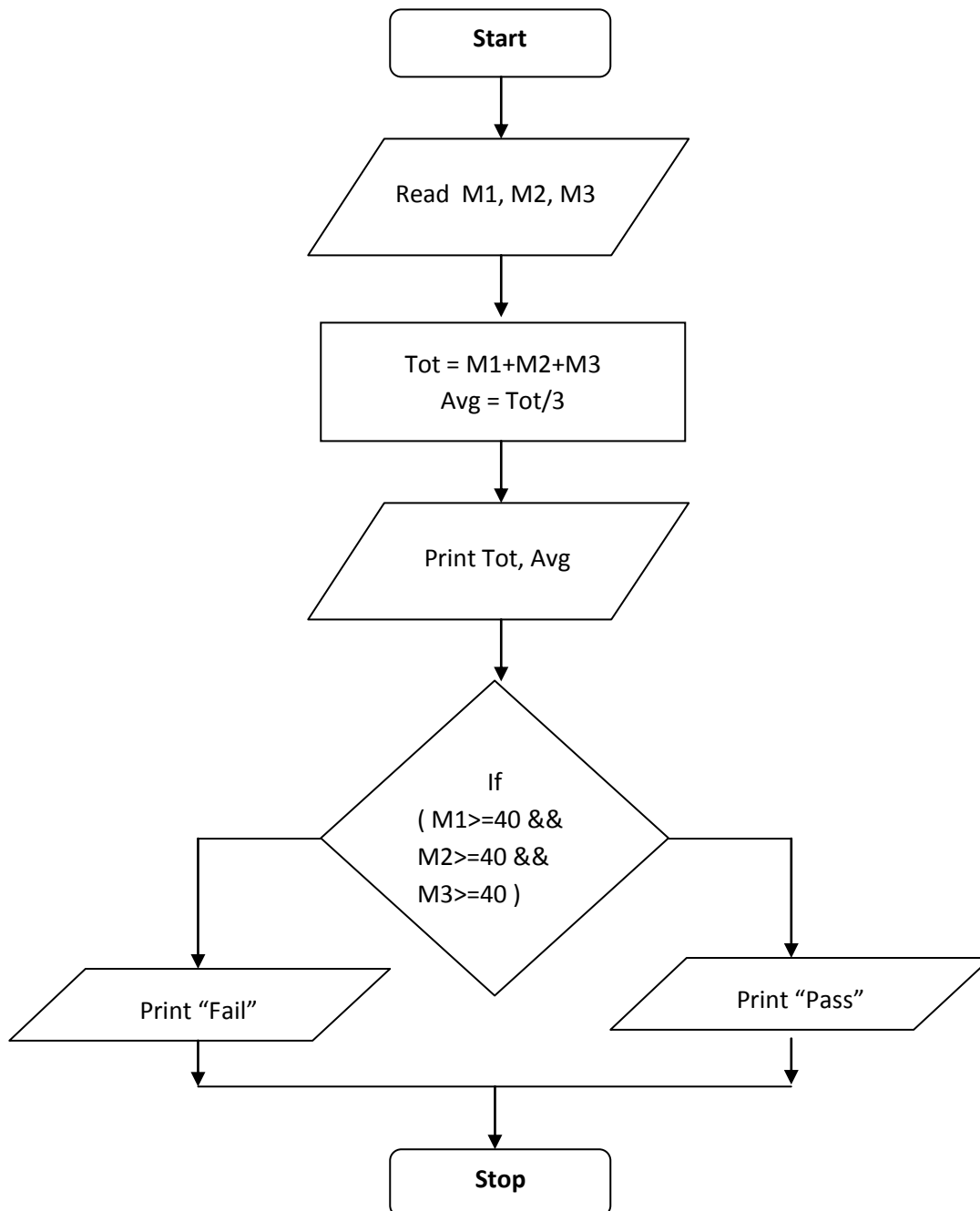
Flowchart

Program:

```
/* <<<<<<<<<< Simple Interest >>>>>>>>>>>>>>>>>>>>>>>>> */
#include<stdio.h>
void main()
{
float p,n,r,si;
clrscr();
printf("Principle Amount : ");
scanf("%f",&p);
printf("No. of years : ");
scanf("%f",&n);
printf("Rate of Interest : ");
scanf("%f",&r);
si=p*n*r/100;
printf("Simple Interest %f",si);
getch();
}
```

Output :

```
Principle Amount : 5000
No. of years : 3
Rate of Interest : 0.5
Simple Interest 75.000000
```

Ex. No. : 2 Student Result**Aim :** Draw flowchart and develop a c program for student result

Program:

```
#include<stdio.h>
void main()
{
    int m1,m2,m3;
    float tot,avg;
    clrscr();
    printf("Enter 3 Marks : ");
    scanf("%d%d%d",&m1,&m2,&m3);
    tot=m1+m2+m3;
    avg=tot/3.0;
    printf("Total %f\n",tot);
    printf("Avg  %f\n",avg);
    if(m1>=40 && m2>=40 && m3>=40)
        printf("Pass\n");
    else
        printf("Fail\n");
    getch();
}
```

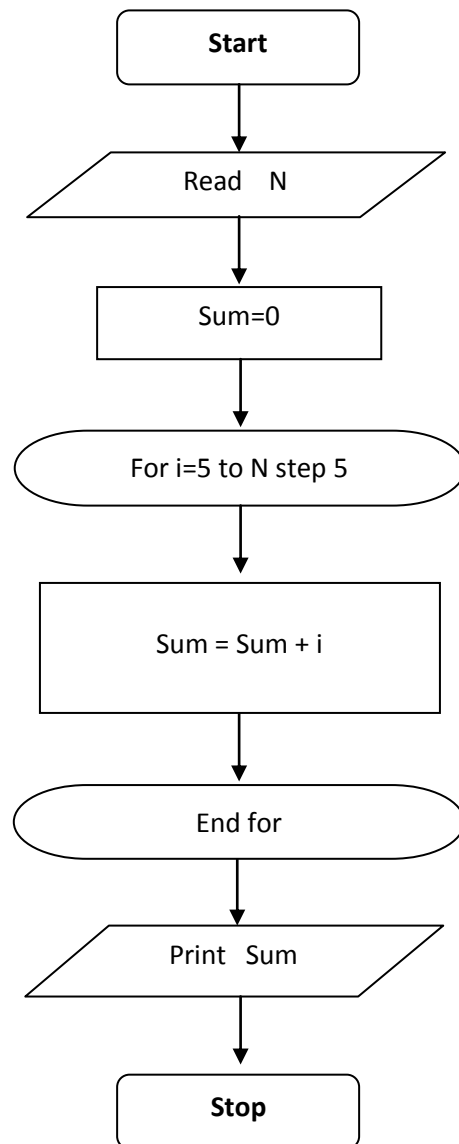
Output :

```
Enter 3 Marks : 80
50
69
Total 199
Avg  66.33
Pass
```

3. Sum of Series

Aim : Draw flowchart and develop a c program to sum of the following series

$$\text{Sum} = 5 + 10 + 15 + \dots + N$$



Program

```
#include<stdio.h>
void main()
{
    int i,sum,n;
    clrscr();
    printf("Enter N value : ");
    scanf("%d",&n);
    sum=0;
    for(i=5;i<=n;i=i+5)
    {
        sum=sum+i;
    }
    printf("Sum=%d",sum);
    getch();
}
```

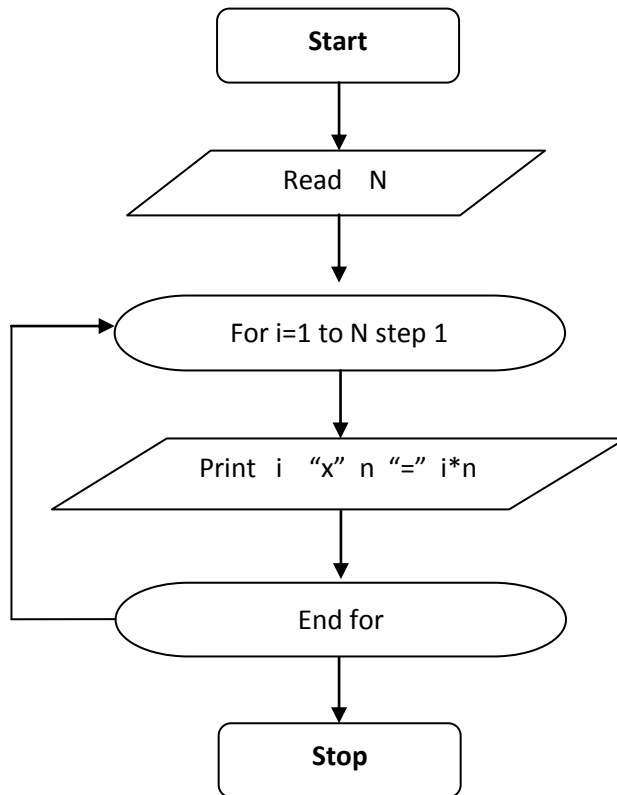
Output :

Enter N value : 15

Sum=30

4. Multiplication Table

Aim : Draw flowchart and develop a c program to display multiplication table



Program

```
#include<stdio.h>
void main()
{
    int i,n;
    clrscr();
    printf("Enter table no. : ");
    scanf("%d",&n);
    for(i=1;i<=10;i=i+1)
    {
        Printf("%d x %d = %d\n",i,n,i*n);
    }
    getch();
}
```

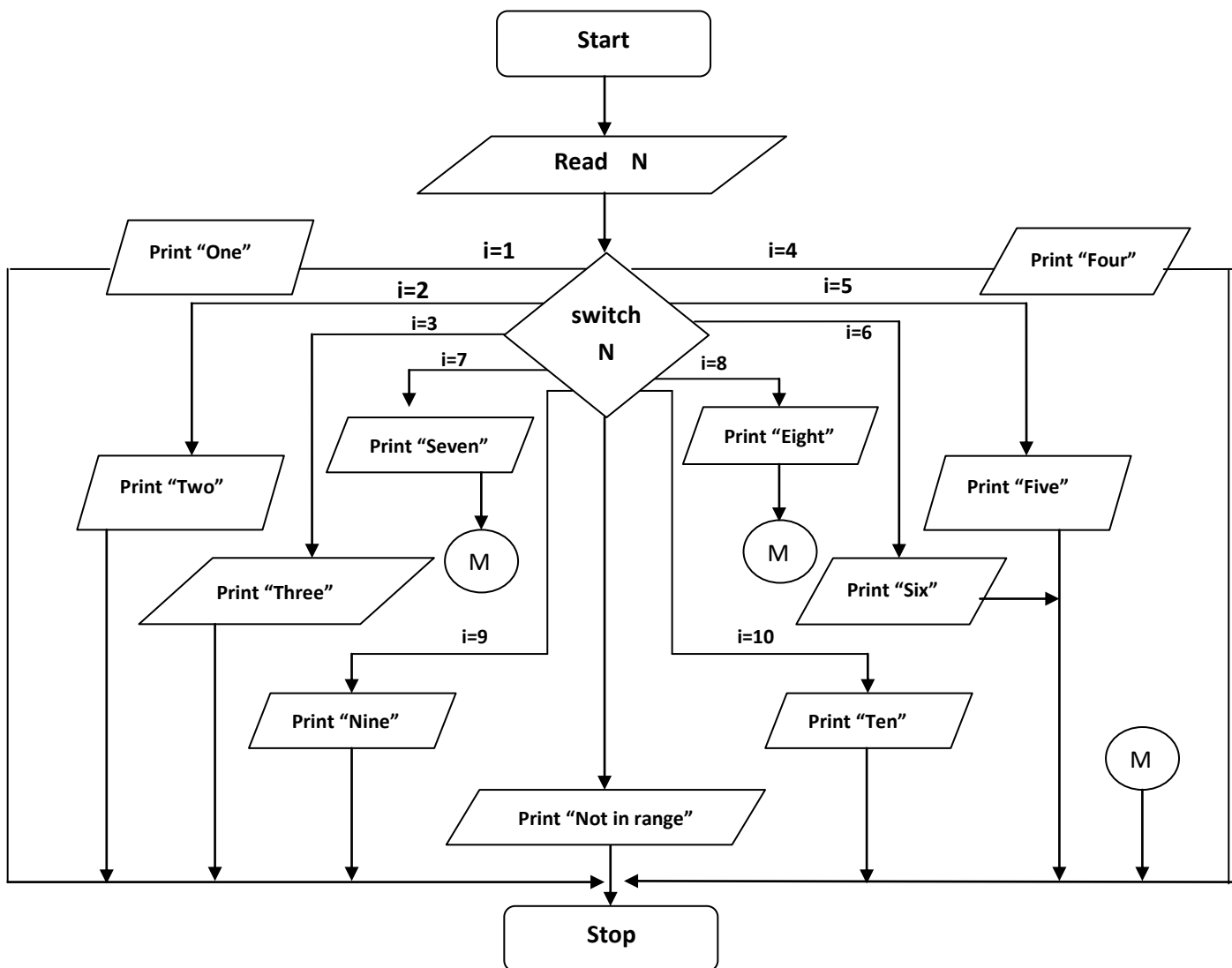
Output :

Enter table no. : 5

```
1 x 5 = 5
2 x 5 = 10
3 x 5 = 15
4 x 5 = 20
5 x 5 = 25
6 x 5 = 30
7 x 5 = 35
8 x 5 = 40
9 x 5 = 45
10 x 5 = 50
```

5. Number to Word

Aim : Draw flowchart and write program to convert a number into word (1 to 9)



Program

```
#include <stdio.h>
#include<conio.h>
int main()
{
    int n;
    printf("Enter a number (1 to 9): ");
    scanf("%d", &n);
    switch(n)
    {
        case 1 : printf("One"); break;
        case 2 : printf("Two"); break;
        case 3 : printf("Three"); break;
        case 4 : printf("Four"); break;
        case 5 : printf("Five"); break;
        case 6 : printf("Six"); break;
        case 7 : printf("Seven"); break;
        case 8 : printf("Eight"); break;
        case 9 : printf("Nine"); break;
        default : printf("Not in range ");
    }
    getch();
}
```

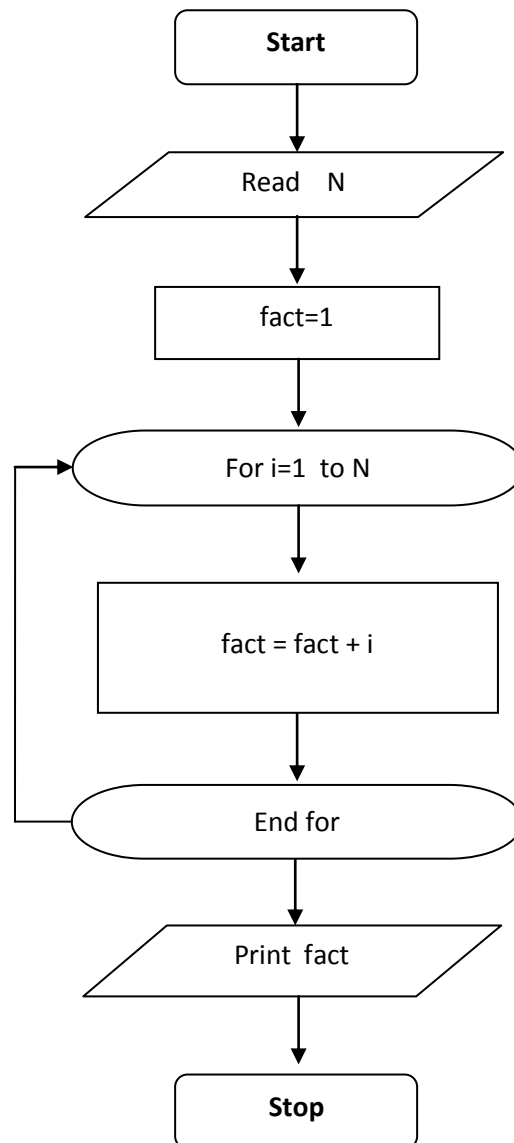
Output

Enter a number (1 to 9): 4

Four

6. Factorial Program

Aim : Draw flowchart and write program to find factorial of a number



Program :

```
#include <stdio.h>
#include<conio.h>
void main()
{
    int n, i, f=1;
    clrscr();
    printf("Enter a number ");
    scanf("%d", &n);
    for(i=1;i<=n;i++)
    {
        f=f * i;
    }
    printf("Fact = %d",f);
    getch();
}
```

Output :

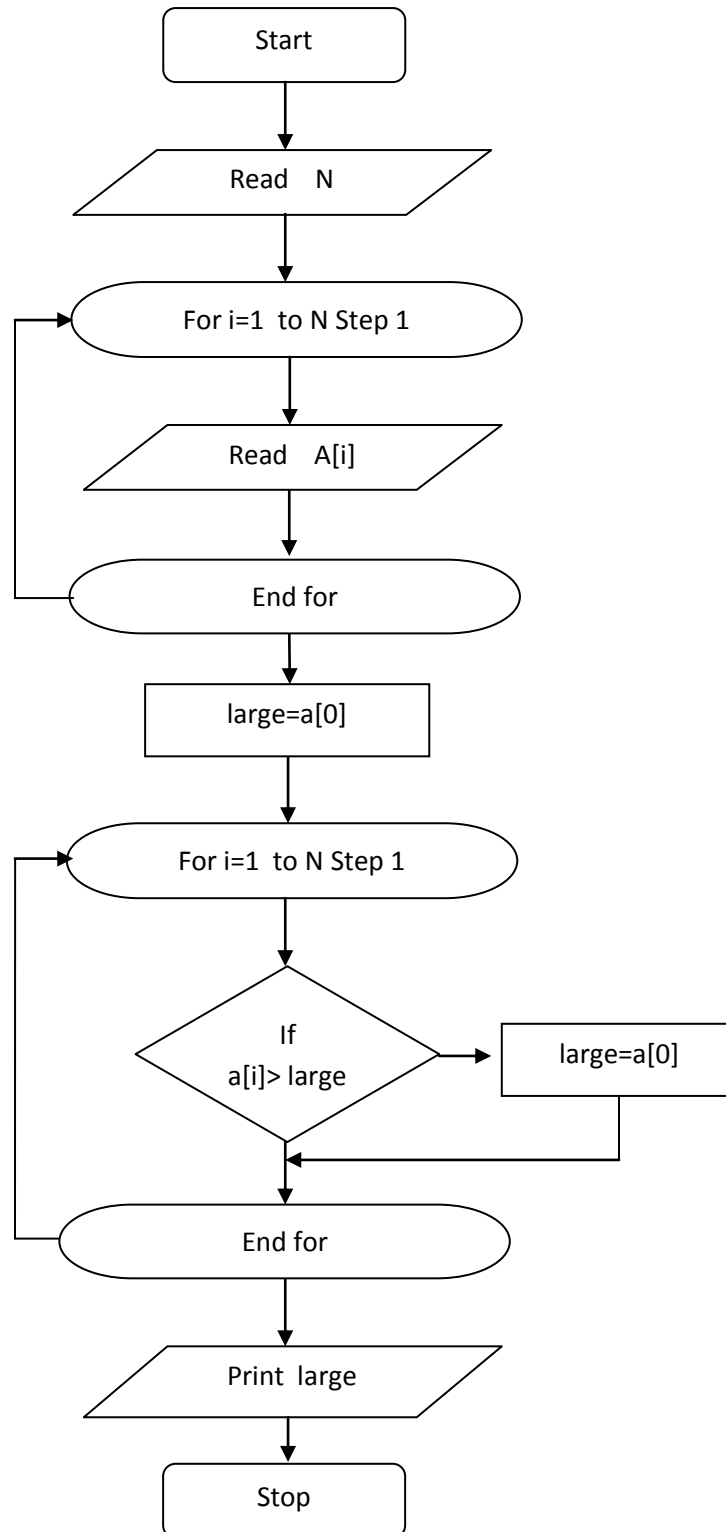
Enter a number 5

120

7. Largest Numbers amount N Numbers

Aim : Draw flowchart and write program to find largest number among N numbers.

FLOWCHART



PROGRAM

```
#include <stdio.h>
#include<conio.h>
int main()
{
    int i, n, a[100],large;
    printf("Enter N value ");
    scanf("%d", &n);
    printf("\n");
    for(i = 0; i < n; ++i)
    {
        scanf("%d", &a[i]);
    }
    large=a[0];
    for(i = 1; i < n; ++i)
    {
        if(a[i]>large)
            large = a[i];
    }
    printf("Largest element = %d", large);
    getch();
}
```

Output :

Enter N value 5

20

90

80

22

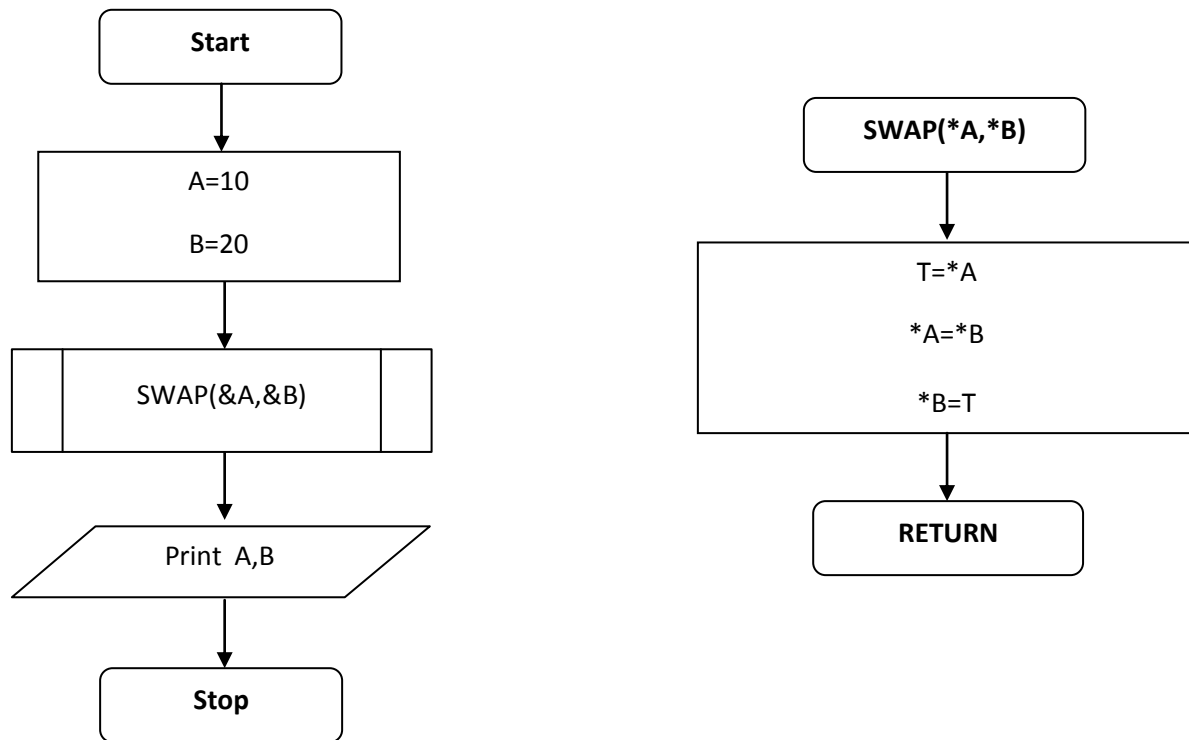
12

Largest element = 90

8. Swapping using pointer

Aim : Draw flowchart and write program to swap two numbers

FLOWCHART



Program :

```
#include<stdio.h>
#include<conio.h>
void swap(int *x,int *y)
{
    int t;
    t=*x;
    *x=*y;
    *y=t;
}
void main()
{
    int a,b;
    a=10;
    b=20;
    swap(&a,&b);
    printf("a=%d b=%d",a,b);
    getch();
}
```

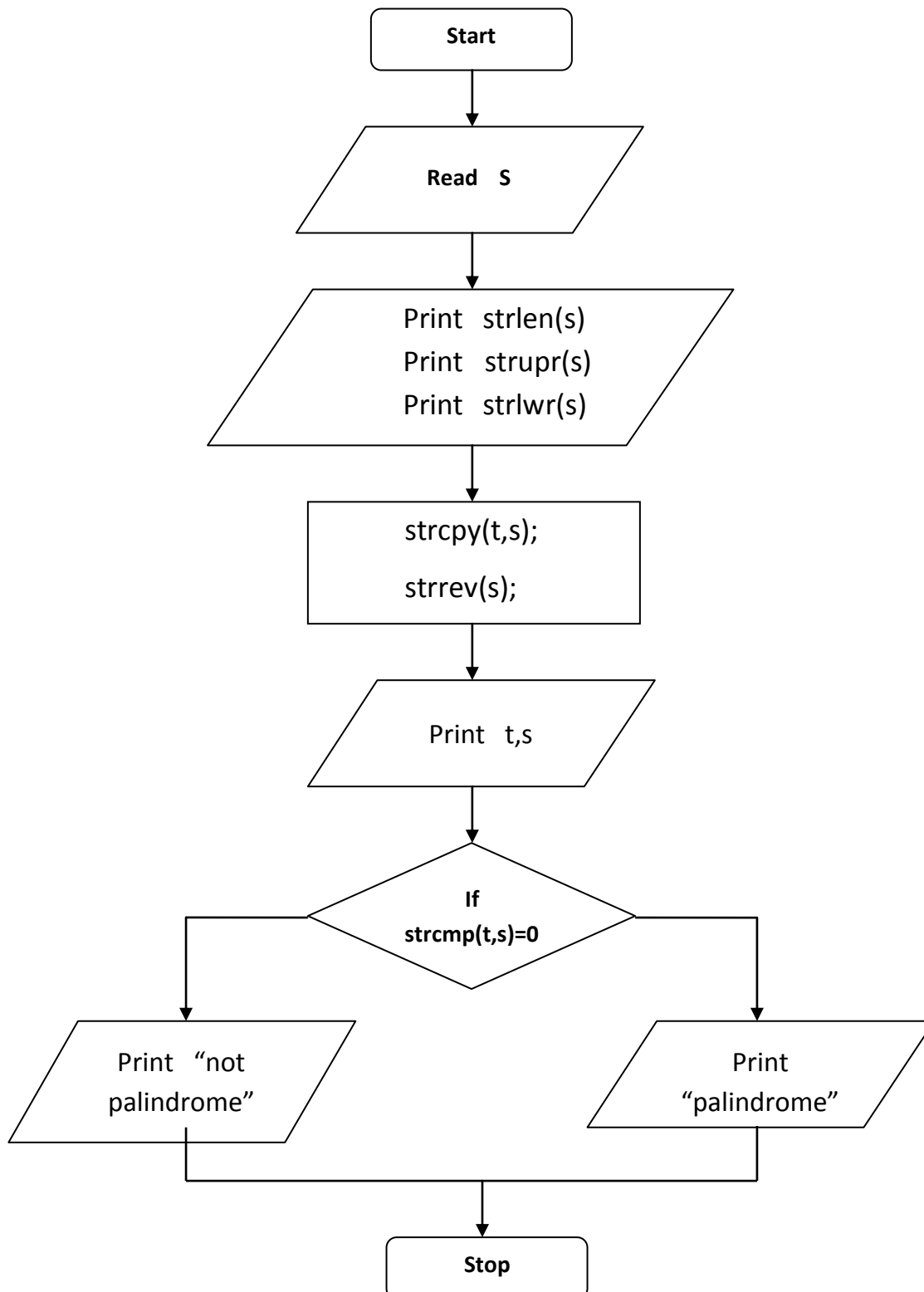
Output :

a=20 b=10

9. Program to illustrate string manipulation

Aim : Draw flowchart and write program for string manipulation and show the given string is palindrome or not.

FLOWCHART



Program

```
#include<stdio.h>
#include<conio.h>
#include<string.h>
void main()
{
    char s[50],t[50];
    clrscr();
    printf("Enter a string ");
    scanf("%s",s);
    printf("\nGiven string %s",s);
    printf("\nLength %d",strlen(s));
    printf("\nUpper %s",strupr(s));
    printf("\nLower %s",strlwr(s));
    strcpy(t,s);
    strrev(s);
    printf("\nLower %s",t);
    printf("\ns = %s",s);
    if(strcmp(s,t)==0)
        printf("\nThe given string is palindrome");
    else
        printf("\nThe given string is not palindrome");
    getch();
}
```

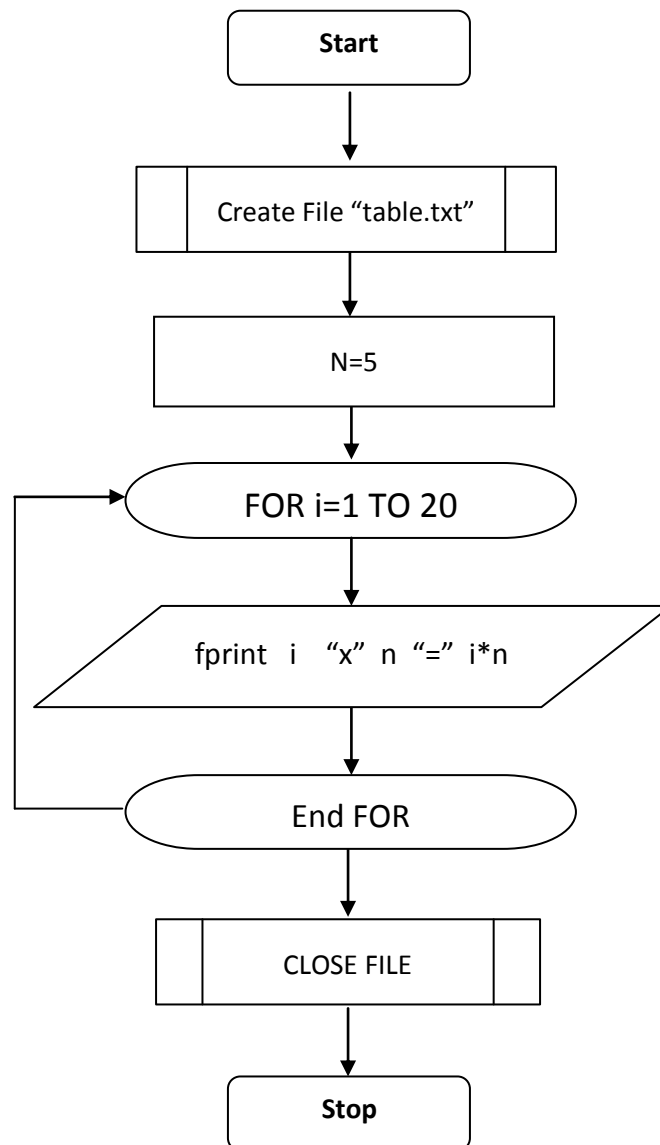
Output :

```
Enter a string welcome
Given string welcome
Length 7
Upper WELCOME
Lower welcome
Reverse of string = emoclew
The given string is not palindrome
```

10. Create a text file and store multiplication table

Aim : Draw flowchart and write program to create text file and store manipulation table.

FLOWCHART



Program

```
#include<stdio.h>
void main()
{
    FILE *fp;
    int i,n;
    n=5;
    fp=fopen("tables.txt","w+");
    for(i=1;i<=20;i++)
    {
        fprintf(fp,"%d x %d = %d\n",i,n,i*n);
    }
    fclose(fp);
}
```

Output:

```
table.txt
1 x 5 = 5
2 x 5 = 10
3 x 5 = 15
4 x 5 = 20
5 x 5 = 25
6 x 5 = 30
7 x 5 = 35
8 x 5 = 40
9 x 5 = 45
10 x 5 = 50
11 x 5 = 55
12 x 5 = 60
13 x 5 = 65
14 x 5 = 70
15 x 5 = 75
16 x 5 = 80
17 x 5 = 85
18 x 5 = 90
19 x 5 = 95
20 x 5 = 100
```