

C-Programming Lab Sheet

I Year / I Part

Faculty: Civil/Computer/Electrical

Labsheet#4

Objectives:

To familiarized with different types of looping statement such as Loop, for, while, do...while, nesting loop.

1. Display 1 to 5
2. Average of given n numbers
3. Sum= 1+2+3+.....+n,25
Sum= 1+3+5+.....+n,27
Factorial of n numbers
4.

1	1 2 3 4 5	1
1 2	1 2 3 4	2 1 2
1 2 3	1 2 3	3 2 1 2 3
1 2 3 4	1 2	
1 2 3 4 5	1	
5. Sum of Sine and Cosine series.

Objective#1

- 1.1 Display the number from 1 to 5.

```
#include<stdio.h>
```

```
#include<conio.h>
```

```
void main(){
```

```
    int a=1;
    printf("a=%d\n",a);
    a=a+1;
    printf("a=%d\n",a);
    a=a+1;
    printf("a=%d\n",a);
    a=a+1;
    printf("a=%d\n",a);
    a=a+1;
    printf("a=%d\n",a);
    a=a+1;
    getch();
}
```

- 1.2

```
#include<stdio.h>
#include<conio.h>
void main(){
    int i;
    for(i=1;i<=5;i++)
        printf("%d\n",i);
    getch();
}
```

Assignment 1: Compare the outputs in 1.1 and 1.2 and compare the two programs.

Objective#2:

2.1 Find the average of first 10 odd numbers.

```
#include<stdio.h>
#include<conio.h>
void main(){
float avg;
int i, sum, n
for(i=1;i<20;i=i+2){
Sum=sum+i;
n++;
}
avg=sum/n;
printf("avg=%f",avg);
getch();
}
```

Assignment 2

2.1 What happens if sum is not initialized to 0 or n to 0 in program 2.1

2.2 Modify the above program to find average of 10 input numbers.

2.3 Find the sum of the series

Sum=1+3+5+-----+n, where n is inputted by user.

2.4 Find the factorial of n number.

```
#include<stdio.h>
#include<conio.h>
#define PI 3.1415
void main(){
int i;
for(i=4;i<5;i++){
printf("%d\n",i);
getch();
}
```

Note the error message and modify the above program to remove error.

Objective#3:

3.1

```
#include<stdio.h>
#include<conio.h>
void main(){
int i; i=6;
while(i<=5){
printf("%d\t",i);
i++;
}
getch();
}
```

3.2

```
#include<stdio.h>
#include<conio.h>
void main(){
    int i; i=6;
    do{
        printf("%d\t",i);
        i++;
    }while(i<=5);
    getch();
}
```

What is difference between program 3.1 and 3.2.

Assignment 3

3.1 modify the 2.1 using while loop.

3.2 modify 2.1 using do-while loop.

Objective#4:

4.1

```
#include<stdio.h>
#include<conio.h>
void main(){
    int i,j;
    for(i=1;i<=5;i++){
        for(j=1;j<=i;j++){
            printf("%d\t",i);
            printf("\n");
        }
        getch();
    }
}
```

Assignment 4:

Modify the above program to get the output as below:

1	1 2 3 4 5	1
1 2	1 2 3 4	2 1 2
1 2 3	1 2 3	3 2 1 2 3
1 2 3 4	1 2	
1 2 3 4 5	1	

Objective#5:

5.1 WAP to evaluate $\sin x = x - x^3/3! + x^5/5! - x^7/7! + \dots + x^n/n!$ where x is in radian.

```
#include<stdio.h>
#include<math.h>
void main(){
    int i,n,j;
    float y, t=0.0, sum=0.0, x, fact=1;
    printf("enter the x");
    scanf("%f",&x);
    printf("enter the number of trm");
    scanf("%d", &n);
    y=3.14/180*x;
    for(i=1;i<=n;i++){
        for(j=1;j<=i;j++)
            fact*=j;
        if(i%2!=0){
            sum=sum+pow(y,i)/fact;
        }
        printf("the sum of the series is %f", sum);
    }
}
```

Assignment 5:

5.1 WAP to evaluate $\cos x = 1 - x^2/2! + x^4/4! - \dots + x^n/n!$