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Lab 09

Loop in C

Objective:

- I will learn how we can take input from user inC.
- I will learn how we uses loops inC.

Task 1:

Write a program using while loop that keeps asking the user to enter a number until -1 is entered. Then displays the number values entered, the sum of all the entered numbers andits average

Code:

```
#include <stdio.h>

int main ( )

{
        int j,i=5;

        intsum=0;

        int count=0;

        float averg;

        while(i>0)

        {
                printf("enter any integer,-1 to end:");

                scanf("%d",&j);

                if(j==-1)
```

```
            break;

            sum=sum+j;

            count=count+1;

      }

      printf("sum is %d\n",sum);

      averg=(float)sum/count;

      printf("Average is %f",averg);

      return 0;

}
```

Output:

```
enter any integer,-1 to end:45
enter any integer,-1 to end:67
enter any integer,-1 to end:876
enter any integer,-1 to end:987
enter any integer,-1 to end:67
enter any integer,-1 to end:-1
sum is 2042
Average is  408.399994
```

Task 2:

Write a program using while loop that asks a user to enter the total number of students enrolled in Computer Programming class. Then asks the user to enter the marks obtained by each student in this class. Display the average marks obtained.

Code:

```
#include <stdio.h>

int main(void)

{

      int x,y,sum=0;

      int g=0;

      float averg;
```

```c
        printf("Enter total no of student ");

        scanf("%d",&x);

        while (g<x)

        {

                printf("Enter no ");

                scanf("%d",&y);

                sum=sum + y;

                g++;

                }

        averg=(float)sum/x;

        printf("Averge is %f",averg);

return 0;

}
```

Output:

```
Enter total no of student 5
Enter no 80
Enter no 70
Enter no 75
Enter no 88
Enter no 85
Averge is 79.599998
```

Task 3:

Write a program which computes the factorial of a positive integer using do-while loop. •N factorial is: n!= (n)(n-1)(n-2) .....(3)(2)(1

Code:

```c
#include <stdio.h>

int main()

{
```

```
int x,y;

printf("enter integer");

scanf("%d",&x);

y=x;

int fact=1;

do{

fact=fact*x;

x--;


}while(x>0);

printf("Factorial of %d is%d",y,fact);

}
```
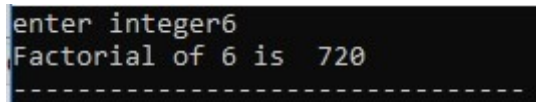
Output:


```
enter integer6
Factorial of 6 is  720
------------------------------
```

Task 4:

Write a program using do-while loop that prints the first 20 odd numbers which are not divisible by 3.

Code:#include<st

dio.h>int main()

```
{
        int x=1;

        int count=0;

        do{
```

```c
            if (x%2 !=0 && x%3!=0) {

            printf("%d\n",x);

            count++; }

            x++;

        }while(count<=20);


return 0;}
```

Output:

```
1
5
7
11
13
17
19
23
25
29
31
35
37
41
43
47
49
53
55
59
61
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
```

Task 5:

Write a program using for loop which displays the table of entered number. (1-20).

Code:

```c
#include <stdio.h>

int main () {
```

```c
int n,m,p=0;

printf("Enter integer");

scanf("%d",&n);

for(m=1 ; m<=20 ; m++) {

        p=n*m;

        printf("%d * %d = %d\n",n,m,p);

}

        return 0;

}
```
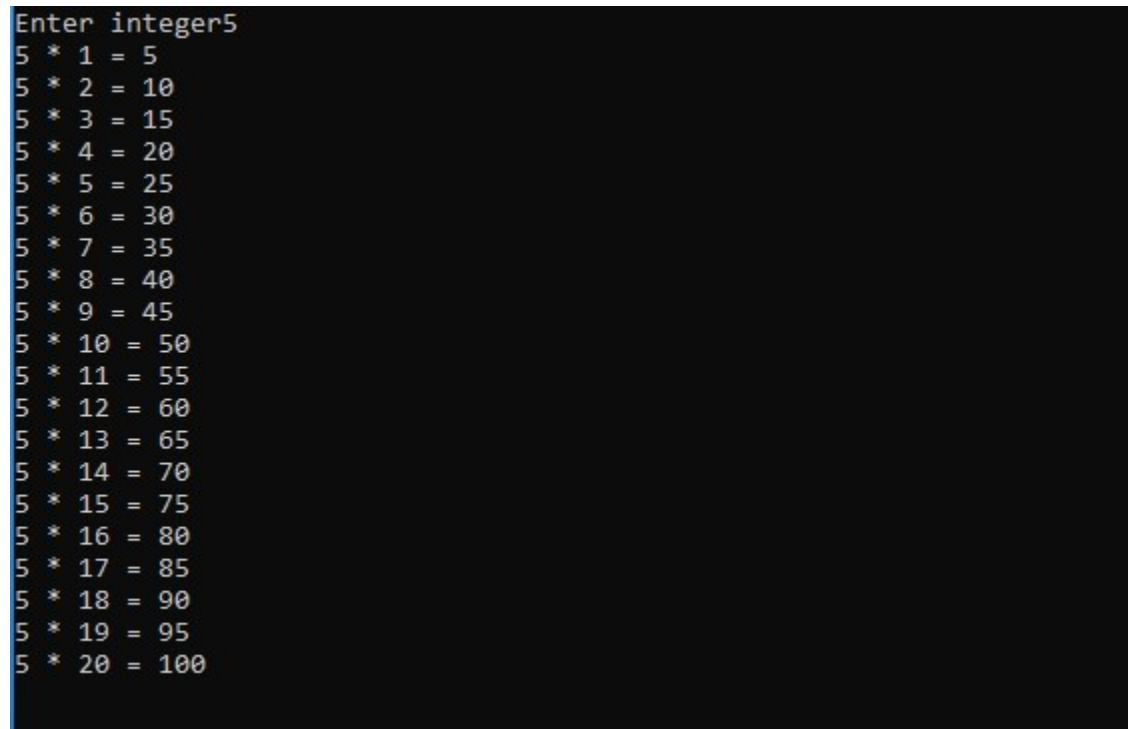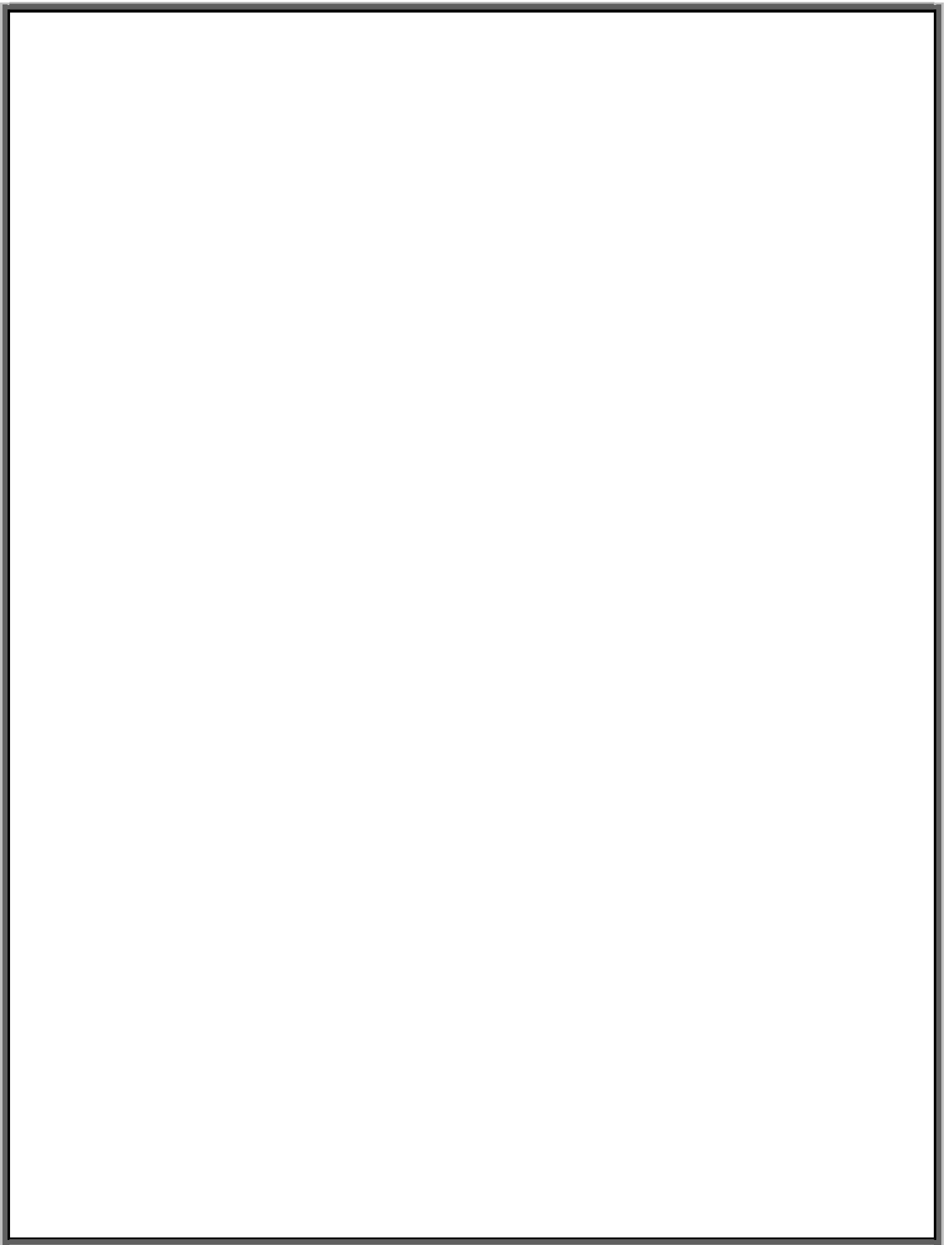
Output:

```
Enter integer5
5 * 1 = 5
5 * 2 = 10
5 * 3 = 15
5 * 4 = 20
5 * 5 = 25
5 * 6 = 30
5 * 7 = 35
5 * 8 = 40
5 * 9 = 45
5 * 10 = 50
5 * 11 = 55
5 * 12 = 60
5 * 13 = 65
5 * 14 = 70
5 * 15 = 75
5 * 16 = 80
5 * 17 = 85
5 * 18 = 90
5 * 19 = 95
5 * 20 = 100
```

Conclusion:

In this lab, I learnt how we write code or program in C. I also learnt how we take input from user as I take by using scan function. I also learnt how we write and use loops in C. I learnt that loops in C are similar to loops in java. I also learnt how use nested loops in C as I use to perform different task i.e. print odd and prime numbers.