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Practical-4:Program to implement Looping Constructs

1. Program to display the first N numbers.

```
#include<stdio.h>
int main()
{
    int i, n;
    printf("enter the value of n: ");
    scanf("%d",&n);
    for(i=1;i<=n;i++)
    {
        printf(" %d ",i);
    }
    return 0;
}
```

2. Program to print the sum of all numbers up to a given number.

```
#include<stdio.h>
int main()
{
    int i, n , sum=0;
    printf("enter the value of n: ");
    scanf("%d",&n);
    for(i=1;i<=n;i++)
    {
        sum=sum+i;
    }
    printf(" %d ",sum);
    return 0;
}
```

3. Program to find the factorial of a given number.

```
#include<stdio.h>
int main()
{
    int i, n , fact=1;
    printf("enter the value of n: ");
```

```
    scanf("%d",&n);
    for(i=1;i<=n;i++)
    {
        fact=fact*i;
    }
    printf(" %d ",fact);
    return 0;
}
```

4. Program to print sum of even and odd numbers from 1 to N numbers.

```
#include<stdio.h>
int main()
{
    int i, n, sum1=0, sum2=0;
    printf("enter the value of n: ");
    scanf("%d",&n);
    for(i=1;i<=n;i++)
    {
      if(i%2==0)
      {
        sum1=sum1+i;
     }
     else{
       sum2=sum2+i;
   }

    printf("sum of even number from 1 to %d=
%",n,sum1);
     printf("\n sum of odd number from 1 to
%d=%d",n,sum2);
    return 0;
}
```

5. Program to print the Fibonacci series.

```
#include<stdio.h>
void main()
{
    int a=0,b=1,c,n,i;
    printf("enter number of elements in
fibonacci series:");
```

```
    scanf("%d",&n);
    printf("%d %d ",a,b);
    for(i=3;i<=n;i++)
    {
        c=a+b;
        printf("%d ",c);
        a=b;
        b=c;

    }
}
```

6. Program to check whether the entered number is prime or not.

```
#include<stdio.h>
void main()
{
    int n,i ,f=0;
    printf("enter any number to check: ");
    scanf("%d",&n);
    for(i=2;i<n;i++)
    {
        if(n%i==0)
        {
            f++;
            break;
        }
    }
    if(f!=0)
    {
    printf("%d is not prime no.",n);
    }
    else if(f==0)
    {
    printf("%d is an prime no.",n);
    }
}
```

7. Program to find the sum of digits of the entered number.

```
#include<stdio.h>
void main()
```

```
{
    int n, m,r,sum=0;
    printf("enter any number:");
    scanf("%d",&n);
    m=n;
    while(n!=0)
    {
      r=n%10;
      sum=sum+r;
      n=n/10;
    }
    printf("sum of digit of the number %d is
%d",m,sum);
}
```

8. Program to find the reverse of a number.

```
#include<stdio.h>
void main()
{
    int n, m,r,d=0;
    printf("enter any number:");
    scanf("%d",&n);
    m=n;
    while(n!=0)
    {
      r=n%10;
      d=(10*d)+r;
      n=n/10;
    }
    printf("reverse of digit of the number %d is
%d",m,d);
}
```

9. Program to print Armstrong numbers between two intervals.

```
#include<stdio.h>
void main()
{
    int s , e  , num, n, arm = 0, i, sum;
  printf(" Enter the intervals");
  scanf(" %d %d", &s , &e);
```

```
    for (i = s; i <= e; i++) {
        num = i;
        sum = i;


        while (num != 0) {
            n = num % 10;
            arm = arm + (n * n * n);
            num = num / 10;
        }


        if (sum == arm) {
            printf("%d\n", i);
        }
        arm=0;
    }
```

10. Write a program to print the pattern

```
1
1    2
1    2    3
1    2    3    4
```

```
# include<stdio.h>
void main()
{
    int i,j;
    for(i=1;i<5;i++)
    {

        for(j=1;j<=i;j++)
         {
            printf("%d ",j);
        }
        printf("\n");
    }
}
```

11. Write a program in C to display table of number 1 to 10 using nested loop

```
#include<stdio.h>
void main()
{
    int i,j,k;
    for(i=1;i<=10;i++)
    {
        for(j=1;j<=10;j++)
        {
            k=i*j;
            printf("%d * %d= %d",i,j,k);
            printf("\n");
        }
        printf("\n");
    }
}
```