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**Practical – 4: Program to implement Looping Constructs**

1. **Program to display the first N numbers.**

#include<Stdio.h>

#include<conio.h>

void main()

{

void input(int n);

int n;

input(n);

}

void input(int n1)

{

int i;

printf("Enter n number:\n");

scanf("%d",&n1);

for(i=1;i<=n1;i++)

{

printf("%d ",i);

}

}

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

#include<Stdio.h>

#include<conio.h>

void main()

{

void input(int n);

int n;

input(n);

}

void input(int n1)

{

int i;

int s;

s=0;

printf("Enter n number:\n");

scanf("%d",&n1);

for(i=1;i<=n1;i++)

{

printf("%d ",i);

s=s+i;

}

printf("\nSum is %d",s);

}

1. **Program to find the factorial of a given number.**

#include<stdio.h>

#include<conio.h>

void main()

{

int fact(int k);

int n,k;

printf("Enter a number:");

scanf("%d",&n);

k=fact(n);

printf("Factorial of %d is %d",n,k);

getch();

}

int fact(int n)

{

if(n==0)

return 1;

else

return (n\*fact(n-1));

}

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

#include<stdio.h>

#include<conio.h>

void main()

{

int n,i,es=0,od=0;

clrscr();

printf("Enter numbers to display even or odd\n");

scanf("%d",&n);

for(i=0;i<n;i++)

{

if(i%2==0)

{

es=es+i;

}

else

{

od=od+i;

}}

printf("even sum %d",es);

printf("\nodd sum %d",od);

getch();

}

1. **Program to print the Fibonacci series.**

#include<stdio.h>

#include<conio.h>

void main()

{

int n,i,f1=0,f2=1,f3;

clrscr();

printf("Enter a number\n");

scanf("%d",&n);

printf("%d %d", f1,f2);

for(i=2;i<n;i++)

{

f3=f1+f2;

printf(" %d",f3);

f1=f2;

f2=f3;

}

getch();

}

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

#include<stdio.h>

#include<conio.h>

#include<math.h>

void main() {

   clrscr();

   int n, i, flag = 0;

   printf("Enter any number to check whether it's prime or not: ");

   scanf("%d", &n);

   for(i = 2; i <= sqrt(n); i++) {

      if(n % i == 0)

            flag = 1;

   }

   if(flag == 1)

     printf("Not Prime");

   else

     printf("Prime");

   getch();

}

1. **Program to find the sum of digits of the entered number.**

#include <stdio.h>

int main()

{

int n, t, sum = 0, remainder;

printf("Enter an integer\n");

scanf("%d", &n);

t = n;

while (t != 0)

{

remainder = t % 10;

sum = sum + remainder;

t = t / 10;

}

printf("Sum of digits of %d = %d\n", n, sum);

return 0;

}

**8. Program to find the reverse of a number.**

#include<Stdio.h>

#include<conio.h>

void main()

{

int n,rev=0,remainder;

printf("Enter a number: ");

scanf("%d",&n);

while(n>0)

{

remainder=n%10;

rev=rev\*10+remainder;

n=n/10;

}

printf("Reverse number is %d",rev);

}

**9. Program to print Armstrong numbers between two intervals.**

#include <math.h>

#include <stdio.h>

int main() {

int low, high, number, originalNumber, rem, count = 0;

double result = 0.0;

printf("Enter two numbers(intervals): ");

scanf("%d %d", &low, &high);

printf("Armstrong numbers between %d and %d are: ", low, high);

if (high < low) {

high += low;

low = high - low;

high -= low;

}

for (number = low + 1; number < high; ++number) {

originalNumber = number;

while (originalNumber != 0) {

originalNumber /= 10;

++count;

}

originalNumber = number;

while (originalNumber != 0) {

rem = originalNumber % 10;

result += pow(rem, count);

originalNumber /= 10;

}

if ((int)result == number) {

printf("%d ", number);

}

count = 0;

result = 0;

}

return 0;

}

**10. Write a program to print the pattern**

**1**

**1 2**

**1 2 3**

**1 2 3 4**

#include<Stdio.h>

#include<conio.h>

void main()

{

void pattern(int);

int n;

printf("Enter a number:\n");

scanf("%d",&n);

pattern(n);

}

void pattern(int c)

{

int i,j;

for(i=1;i<=c;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>

#include<conio.h>

void main()

{

int i,n,k;

clrscr();

printf("Enter number for table\n");

scanf("%d",&n);

for(i=1;i<=10;i++)

{

k=n\*i;

printf("\n%d\*%d= %d",n,i,k);

}

getch();

}