//q1)Print Armstrong numbers from 100 to 999. #include <stdio.h>

int main() {

int num, digit, sum, a;

printf("Armstrong numbers in the range 100 to 999 are:\n"); for (num = 100; num <= 999; num++) {

a = num; sum = 0;

while (a > 0) { digit = a % 10;

sum += (digit \* digit \* digit); a /= 10;

}

if (num == sum) { printf("%d ", num);

}

}

return 0;

}

# Output-

Armstrong numbers in the range 100 to 999 are: 153 370 371 407

//q2)Find the sum of digits of a number until the sum is reduced to 1 digit.

Example: 538769->38->11->2

#include<stdio.h> int main() {

int num, sum, digit; printf("Enter a number: "); scanf("%d", &num);

sum = num;

while (sum >= 10) { sum = 0;

for (int i = num; i > 0; i /= 10) { digit = i % 10;

sum += digit;

}

num = sum;

}

printf("The final sum of digits is: %d\n", sum); return 0;

}

# Output-

Enter a number: 538769 The final sum of digits is: 2

//q3)Check whether a number is prime or not. #include <stdio.h>

int main() { int num;

printf("Enter a number: "); scanf("%d", &num);

for (int i = 2; i <= num/2; i++) { if (num % i == 0) {

printf("%d is not a prime number.\n", num); return 0;

}

}

printf("%d is a prime number.\n", num); return 0;

}

# Output-

Enter a number: 19 19 is a prime number.

# Lab 5(For Loop)

**Abhik Samanta Roll-22052610 Section-B16**

//q4)Find the factorial of a number. #include<stdio.h>

void main(){ int n,num; long fact=1;

printf("Enter the number :"); scanf("%d",&n);

num=n; if(n<0){

printf("No factorial of negative number.");

}

else{

for(int i=1;i<=n;i++){ fact\*=i;

}

printf("Factorial of %d = %ld\n", num, fact);

}

}

# Output-

Enter the number :5 Factorial of 5 = 120

//q5)Convert a binary number to a decimal number #include<stdio.h>

void main(){

int n,nsave,rem,d; int j=1;

int dec=0;

printf("Enter the number in binary: "); scanf("%d",&n);

nsave=n; for(;n>0;n/=10){

rem=n%10; d=rem\*j; dec+=d; j\*=2;

}

printf("Binary number = %d, Decimal number = %d\n", nsave, dec);

}

# Output-

Enter the number in binary: 100101

Binary number = 100101, Decimal number = 37

**H.W Questions**

//p1)Multiply two positive numbers without using \* operator. #include <stdio.h>

int main(){ int x, y;

int product = 0;

printf("Enter two integers:\n"); scanf("%d%d", &x, &y);

for(int i=1;i<=y;i++)

{

product += x;

}

printf("Product = %d\n", product);

}

# Ouptut-

Enter two integers: 4 3

Product = 12

//p2)Convert a decimal number to its equivalent binary number. #include<stdio.h>

int main() {

int dec, bin= 0, base = 1, rem; printf("Enter a decimal number: "); scanf("%d", &dec);

for (int i = dec; i > 0; i /= 2) { rem = i % 2;

bin+= rem \* base; base \*= 10;

}

printf("Binary equivalent: %d\n", bin); return 0;

}

# Output-

Enter a decimal number: 37 Binary equivalent: 100101

//p3)Find the sum of this series up to n terms 1+2+4+7+11+16+... #include <stdio.h>

int main() { int n;

printf("Enter the value of n: "); scanf("%d", &n);

int sum = 0; int term = 1;

for (int i=1; i<= n;i++) { sum += term;

term += i;

}

printf("The sum of the series up to %d terms is: %d", n, sum); return 0;

}

# Output-

Enter the value of n: 5

The sum of the series up to 5 terms is: 25

//p4)Generate the fibonacci series 0,1,1,2,3,5,8,13,34,55,89 #include<stdio.h>

void main(){

int t1 = 0, t2 = 1, nextTerm = 0, n; printf("Enter a positive number: "); scanf("%d", &n);

printf("Fibonacci Series:"); for (int i=1;i<=n;i++){ printf("%d, ", nextTerm); nextTerm = t1 + t2;

t1 = t2;

t2 = nextTerm;

}

}

# Output-

Enter a positive number: 89

Fibonacci Series:0, 1, 2, 3, 5, 8, 13, 21, 34, 55, 89

//p5)Find the LCM and HCF of two numbers. #include <stdio.h>

int main() {

int num1, num2, hcf, lcm; printf("Enter two positive integers: "); scanf("%d %d", &num1, &num2);

for (int i = 1; i <= num1 && i <= num2; i++) { if (num1 % i == 0 && num2 % i == 0) {

hcf = i;

}

}

lcm = (num1 \* num2) / hcf; printf("HCF: %d\n", hcf);

printf("LCM: %d\n", lcm); return 0;

}

# Output-

Enter two positive integers: 24 36

HCF: 12

LCM: 72

//p6)An integer n is divisible by 9 if the sum of its digits is divisible by 9. Develop a program to display each digit, starting with the rightmost digit. Your program should also determine whether or not the number is divisible by 9.

#include<stdio.h> int main(){

int num,sum=0; printf("Enter the number: "); scanf("%d",&num); for(;num > 0;num/=10){

int mod = num % 10; printf("%d\n",mod); sum+=mod;

}

if(sum%9==0){

printf("It is divisible by 9");

}

else{

printf("It is not divisible by 9");

}

return 0;

}

**Output-**

Enter the number: 123456 6

5

4

3

2

1

It is not divisible by 9