Assignment - 6 (Use any loop)

1. Write a program to calculate sum of first N natural numbers

#include<stdio.h>

int main()

{

int N, i = 1, sum = 0;

printf("Enter value of N to calculate sum of first N natural numbers: ");

scanf("%d", &N);

while(i <= N)

{

sum = sum + i;

i++;

}

printf("Sum of first %d natural numbers is %d.", N, sum);

return 0;

}

2. Write a program to calculate sum of first N even natural numbers

#include<stdio.h>

int main()

{

int N, sum = 0, i;

printf("Enter value of N to calculate sum of first N even natural numbers: ");

scanf("%d", &N);

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

sum = sum + i \* 2;

printf("Sum of first %d even natural numbers is %d.", N, sum);

return 0;

}

3. Write a program to calculate sum of first N odd natural numbers

#include<stdio.h>

int main()

{

int N, i = 1, sum = 0;

printf("Enter value of N: ");

scanf("%d", &N);

while(i <= N)

{

sum = sum + (i \* 2 - 1);

i++;

}

printf("Sum is %d", sum);

return 0;

}

4. Write a program to calculate sum of squares of first N natural numbers

#include<stdio.h>

int main()

{

int N, i = 1, sum = 0;

printf("Enter value of N: ");

scanf("%d", &N);

while(i <= N)

{

sum = sum + i \* i;

i++;

}

printf("Sum is %d", sum);

return 0;

}

5. Write a program to calculate sum of cubes of first N natural numbers

#include<stdio.h>

int main()

{

int N, i = 1, sum = 0;

printf("Enter value of N: ");

scanf("%d", &N);

while(i <= N)

{

sum = sum + i \* i \* i;

i++;

}

printf("Sum is %d", sum);

return 0;

}

6. Write a program to calculate factorial of a number

#include<stdio.h>

int main()

{

long long int number;

printf("Enter a number: ");

scanf("%lld", &number);

if(number > 0)

{

long long int i = 1;

unsigned long long int factorial = 1;

while(i <= number)

{

factorial = factorial \* i;

i++;

}

printf("Factorial of %lld is %llu.", number, factorial);

}

else if(number == 0)

printf("Factorial of 0 is 1.");

else

printf("Factorial is undefined.");

return 0;

}

7. Write a program to count digits in a given number

#include<stdio.h>

int main()

{

int num, count = 0;

printf("Enter a number: ", num);

scanf("%d", &num);

while(num)

{

num = num / 10;

count++;

}

printf("Number of digits are %d", count);

return 0;

}

8. Write a program to check whether a given number is a Prime number or

not.

#include<stdio.h>

int main()

{

int number, count = 0;

printf("Enter a number: ");

scanf("%d", &number);

if(number <= 1)

printf("%d is not prime number.", number);

else

{

for(int i = 2; i <= number / 2; i++)

{

if(number % i == 0)

{

count++;

break;

}

}

if(count)

printf("%d is not prime number.", number);

else

printf("%d is a prime number.", number);

}

return 0;

}

9. Write a program to calculate LCM of two numbers

#include<stdio.h>

int main()

{

int n1, n2, lcm, i = 2;

printf("Enter two numbers to find their LCM: ");

scanf("%d%d", &n1, &n2);

// if any one number is 0

if(n1 == 0 && n2 || n1 && n2 == 0)

printf("LCM is undefined.");

else

{

// converting negative numbers (if any) into positive

if(n1 < 0)

n1 = n1 \* -1;

if(n2 < 0)

n2 = n2 \* -1;

// we will pick {greater number and its multiples} and will check the divisibility of each multiple of greater number with smaller number.

if(n1 > n2)

{

lcm = n1;

while(lcm % n2) // That smallest multiple of greater number (lcm) which is completely divisible by smaller number (n2) will be the LCM(n1, n2)

{

lcm = n1 \* i;

i++;

}

}

else

{

lcm = n2;

while(lcm % n1)

{

lcm = n2 \* i;

i++;

}

}

printf("LCM is %d.", lcm);

}

return 0;

}

10. Write a program to reverse a given number

#include<stdio.h>

int main()

{

int number, reverse\_num = 0, digit;

printf("Enter a number: ");

scanf("%d", &number);

while(number)

{

digit = number % 10;

reverse\_num = reverse\_num \* 10 + digit;

number = number / 10;

}

printf("Reverse of this number is %d.", reverse\_num);

return 0;

}