Assignment 6

#include <stdio.h>

int main() {

int n;

printf("Enter a positive integer N: ");

scanf("%d", &n);

// Calculate sum of first N natural numbers

int sumNaturals = 0;

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

sumNaturals += i;

}

printf("Sum of first %d natural numbers: %d\n\n", n, sumNaturals);

// Calculate sum of first N even natural numbers

int sumEvenNaturals = 0;

for (int i = 2; i <= 2 \* n; i += 2) {

sumEvenNaturals += i;

}

printf("Sum of first %d even natural numbers: %d\n\n", n, sumEvenNaturals);

// Calculate sum of first N odd natural numbers

int sumOddNaturals = 0;

for (int i = 1; i <= 2 \* n; i += 2) {

sumOddNaturals += i;

}

printf("Sum of first %d odd natural numbers: %d\n\n", n, sumOddNaturals);

// Calculate sum of squares of first N natural numbers

int sumSquares = 0;

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

sumSquares += i \* i;

}

printf("Sum of squares of first %d natural numbers: %d\n\n", n, sumSquares);

// Calculate sum of cubes of first N natural numbers

int sumCubes = 0;

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

sumCubes += i \* i \* i;

}

printf("Sum of cubes of first %d natural numbers: %d\n\n", n, sumCubes);

// Calculate factorial of a number

int factorialNum = 1;

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

factorialNum \*= i;

}

printf("Factorial of %d: %d\n\n", n, factorialNum);

// Count digits in a given number

int num;

printf("Enter a number to count its digits: ");

scanf("%d", &num);

int digitCount = 0;

while (num != 0) {

num /= 10;

digitCount++;}

printf("Number of digits is: %d\n\n", digitCount);

// Check whether a given number is a Prime number or not

printf("Enter a number to check if it is prime: ");

scanf("%d", &num);

int isPrime = 1;

if (num <= 1) {

isPrime = 0;

} else {

for (int i = 2; i \* i <= num; i++) {

if (num % i == 0) {

isPrime = 0;

break;}

}

}

if (isPrime) {

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

} else {

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

}

// Calculate LCM of two numbers

int a, b;

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

scanf("%d %d", &a, &b);

int max = (a > b) ? a : b;

while (1) {

if (max % a == 0 && max % b == 0) {

printf("LCM of %d and %d: %d\n\n", a, b, max);

break;

}

max++; }

// Reverse a given number

printf("Enter a number to reverse: ");

scanf("%d", &num);

int reversed = 0;

while (num != 0) {

reversed = reversed \* 10 + num % 10;

num /= 10;

}

printf("Reverse of %d: %d\n\n", num, reversed);

return 0;

}

