**Assignment- 04**

1. **Reverse a number using a for loop in Java**

class Main {

public static void main(String[] args) {

int num = 1234567, reversed = 0;

for(;num != 0; num /= 10) {

int digit = num % 10;

reversed = reversed \* 10 + digit;

}

System.out.println("Reversed Number: " + reversed);

}

}

**Output:**

Reversed Number: 7654321

1. **Calculate power of a number using a while loop**

#include <stdio.h>

int main() {

int base, exp;

long double result = 1.0;

printf("Enter a base number: ");

scanf("%d", &base);

printf("Enter an exponent: ");

scanf("%d", &exp);

while (exp != 0) {

result \*= base;

--exp;

}

printf("Answer = %.0Lf", result);

return 0;

}

**Output:**

Enter a base number: 4

Enter an exponent: 2

Answer = 16

1. **Calculate the power of a number using a for loop**

#include <stdio.h>

int main()

{

int i, Number, Exponent;

long pw = 1;

printf("\n Please Enter any Number : ");

scanf(" %d", &Number);

printf("\n Please Enter the Exponent Vlaue: ");

scanf(" %d", &Exponent);

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

{

pw = pw \* Number;

}

printf("\n The Final result of %d Power %d = %ld", Number, Exponent, pw);

return 0;

}

**Output:**

Please Enter any Number : 4

Please Enter the Exponent Vlaue: 2

The Final result of 4 Power 2 = 16

1. **Calculate the power of a number using pow() function**

#include <math.h>

#include <stdio.h>

int main() {

double base, exp, result;

printf("Enter a base number: ");

scanf("%lf", &base);

printf("Enter an exponent: ");

scanf("%lf", &exp);

// calculates the power

result = pow(base, exp);

printf("%.1lf^%.1lf = %.2lf", base, exp, result);

return 0;

}

**Output:**

Enter a base number: 4

Enter an exponent: 2

4.0^2.0 = 16.00

1. **Java Program to Check Palindrome String**

import java.util.Scanner;

class ChkPalindrome

{

public static void main(String args[])

{

String str, rev = "";

Scanner sc = new Scanner(System.in);

System.out.println("Enter a string:");

str = sc.nextLine();

int length = str.length();

for ( int i = length - 1; i >= 0; i-- )

rev = rev + str.charAt(i);

if (str.equals(rev))

System.out.println(str+" is a palindrome");

else

System.out.println(str+" is not a palindrome");

}

}

**Output:**

Enter a string:ABCBA

ABCBA is a palindrome

**6)Java Program to Check Palindrome Number**

import java.util.\*;

public class Main

{

public static void main(String[] args)

{

//Take input from the user

//Create instance of the Scanner class

Scanner sc = new Scanner(System.in);

System.out.println("Enter the number: ");

String reverse = "";

String num = sc.nextLine();

int length = num.length();

for ( int i = length - 1; i >= 0; i-- )

reverse = reverse + num.charAt(i);

if (num.equals(reverse))

System.out.println("The entered string " +num +" is a palindrome.");

else

System.out.println("The entered string " +num +" isn't a palindrome.");

}

}

**Output:**

Enter the number: 1221

The entered string 1221 is a palindrome.

**7)Program to Check Prime Number using a for loop**

**8) Program to Check Prime Number using a while loop**

import java.util.Scanner;

class Check\_Prime{

public static void main(String args[]){

int num;

boolean isPrime=false;

Scanner scan=new Scanner(System.in);

//create a scanner object for input

System.out.print("Enter a number: ");

num=scan.nextInt();//get input from the user for num1

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

//condition for non-prime

if(num%i==0)

{

isPrime=true;

break;

}

}

if(!isPrime){

System.out.println(num+" is a prime numbner ");

}

else{

System.out.println(num+" is not a prime numbner ");

}

}

}

}

**Output:**

Enter a positive integer: 7

7 is a prime number.

**9) Program to Check Prime Number using a while loop**

import java.util.Scanner;

class Check\_Prime1{

public static void main(String args[]){

int num;

boolean isPrime=false;

Scanner scan=new Scanner(System.in);

//create a scanner object for input

System.out.print("Enter a number: ");

num=scan.nextInt();//get input from the user for num1

int i=2;

while( i<=num/2){

//condition for non-prime

if(num%i==0)

{

isPrime=true;

break;

}

i++;

}

if(!isPrime){

System.out.println(num+" is a prime numbner ");

}

else{

System.out.println(num+" is not a prime numbner ");

}

}

}

**Output:**

Enter a number: 9

1. is not a prime number

**9)Display Prime Numbers Between Two Intervals**

#include <stdio.h>

int main() {

int low, high, i, flag;

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

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

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

// iteration until low is not equal to high

while (low < high) {

flag = 0;

// ignore numbers less than 2

if (low <= 1) {

++low;

continue;

}

// if low is a non-prime number, flag will be 1

for (i = 2; i <= low / 2; ++i) {

if (low % i == 0) {

flag = 1;

break;

}

}

if (flag == 0)

printf("%d ", low);

// to check prime for the next number

// increase low by 1

++low;

}

return 0;

}

**Output:**

Enter two numbers(intervals): 1 12

Prime numbers between 1 and 12 are: 2 3 5 7 11