**Aim: - Calculated simple interest**

**Code**

#include <stdio.h>

int main() {

float P, R, T, SI

// Input Principal, Rate of Interest, and Time Period

printf("Enter Principal amount: ");

scanf("%f", &P);

printf("Enter Rate of Interest: ");

scanf("%f", &R);

printf("Enter Time Period in years: ");

scanf("%f", &T);

// Calculate Simple Interest (SI = P \* R \* T / 100)

SI = (P \* R \* T) / 100;

// Output the calculated Simple Interest

printf("Simple Interest: %.2f\n", SI);

return 0;

}

**Aim: - Leap year**

**Code**

#include <stdio.h>

int main() {

int year;

// Input the year

printf("Enter a year: ");

scanf("%d", &year);

// Check if the year is a leap year

if (year % 4 == 0) {

if (year % 100 == 0) {

if (year % 400 == 0) {

printf("%d is a leap year\n", year);

} else {

printf("%d is not a leap year\n", year);

}

} else {

printf("%d is a leap year\n", year);

}

} else {

printf("%d is not a leap year\n", year);

}

return 0;

}

**Aim: - Greatest number**

**Code**

#include <stdio.h>

int main() {

int n1, n2, n3, max; // Declare the variables

// Input three numbers

printf("Enter three numbers: ");

scanf("%d %d %d", &n1, &n2, &n3);

// Determine the greatest number using conditional operators

max = (n1 > n2) ? ((n1 > n3) ? n1 : n3) : ((n2 > n3) ? n2 : n3);

// Output the greatest number

printf("%d is the largest\n", max);

return 0;

}

**Aim :- Area of Cricle**

**Code**

#include <stdio.h>

void area\_of\_circle() {

float r = 7;

float a; // Variable to store the area

a = 3.14 \* r \* r;

printf("Area of Circle = %.2f\n", a);

}

int main() {

area\_of\_circle();

return 0;

}

**Aim:- factorial of the number**

**Code**

#include <stdio.h>

int factorial(int num);

int main() {

int num;

// Input a positive integer

printf("Enter a positive integer: ");

scanf("%d", &num);

// Print the factorial of the number

printf("Factorial of %d is %d\n", num, factorial(num));

return 0;

}

// Function to calculate factorial

int factorial(int num) {

if (num == 1 || num == 0) {

return 1; // Base case: factorial of 0 or 1 is 1

} else {

return num \* factorial(num - 1); // Recursive case

}

}

**Aim:- calculates the absolute value and the square root of a number**

**Code**

#include <stdio.h>

#include <math.h> // To use sqrt and fabs functions

int main() {

int num;

double a; // Use double for sqrt result

// Input the number

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

scanf("%d", &num);

// Calculate and display the absolute value

printf("Calculated absolute value is: %d\n", abs(num));

// Calculate and display the square root

if (num >= 0) {

a = sqrt(num);

printf("Calculated square root value is: %.2f\n", a);

} else {

printf("Square root is not defined for negative numbers.\n");

}

return 0;

}

**Aim:- inputting roll numbers and names of students and displaying them.**

**Code**

#include <stdio.h>

int main() {

int roll\_numbers[10]; // Array to store roll numbers

char names[10][50]; // Array to store names of students (up to 50 characters)

// Input roll numbers and names of 10 students

for (int i = 0; i < 10; i++) {

printf("Enter roll number of Student %d: ", i + 1);

scanf("%d", &roll\_numbers[i]);

printf("Enter name of Student %d: ", i + 1);

scanf(" %[^\n]%\*c", names[i]); // To read a full line with spaces

printf("\n"); // New line for better formatting

}

// Print roll numbers and names of all students

printf("\nRoll Numbers and Names of Students:\n");

for (int i = 0; i < 10; i++) {

printf("Roll Number: %d, Name: %s\n", roll\_numbers[i], names[i]);

}

return 0;

}

**Aim:- the string is a palindrome**

**Code**

#include <stdio.h>

#include <string.h>

void isPalindrome(char str[]) {

int i = 0, j = strlen(str) - 1;

// Check if the string is a palindrome

while (i < j) {

if (str[i] != str[j]) {

printf("%s is not a palindrome\n", str);

return;

}

i++;

j--;

}

printf("%s is a palindrome\n", str);

}

int main() {

// Test the function with some strings

isPalindrome("hello");

isPalindrome("madam");

return 0;

}

**Aim:- Function to swap two numbers**

**Code**

#include <stdio.h>

// Function to swap two numbers using call by value

void swapByValue(int a, int b) {

int temp = a;

a = b;

b = temp;

// Note: The swap happens only locally in the function, so the original values won't change.

}

// Function to swap two numbers using call by reference

void swapByReference(int \*a, int \*b) {

int temp = \*a;

\*a = \*b;

\*b = temp;

}

int main() {

int num1, num2;

// Input two numbers from the user

printf("Enter two numbers: ");

scanf("%d %d", &num1, &num2);

// Display the numbers before swapping

printf("Before swapping:\n");

printf("Number 1: %d\n", num1);

printf("Number 2: %d\n", num2);

// Swap using call by value

swapByValue(num1, num2);

// Display the numbers after swapping by value

printf("\nAfter swapping by value:\n");

printf("Number 1: %d\n", num1);

printf("Number 2: %d\n", num2);

// Swap using call by reference

swapByReference(&num1, &num2);

// Display the numbers after swapping by reference

printf("\nAfter swapping by reference:\n");

printf("Number 1: %d\n", num1);

printf("Number 2: %d\n", num2);

return 0;

}

**Aim:- Input the number of rows and columns**

**Code**

#include <stdio.h>

int main() {

int rows, cols;

int matrix[10][19];

// Input the number of rows and columns

printf("Enter the number of rows and columns: ");

scanf("%d %d", &rows, &cols);

// Input values for the matrix

printf("Enter the values for the matrix:\n");

for (int i = 0; i < rows; i++) {

for (int j = 0; j < cols; j++) {

scanf("%d", &matrix[i][j]);

}

}

// Display the matrix

printf("\nMatrix is:\n");

for (int i = 0; i < rows; i++) {

for (int j = 0; j < cols; j++) {

printf("\t%d", matrix[i][j]);

}

printf("\n");

}

return 0;

}