**i. Convert Temperature Celsius into Fahrenheit**:

(1.) Convert temperature fahrenheit to Celsius:

#include <stdio.h>

int main() {

// Declare variables

float fahrenheit, celsius;

// Get temperature in Fahrenheit from the user

printf("Enter temperature in Fahrenheit: ");

scanf("%f", &fahrenheit);

// Convert Fahrenheit to Celsius using the formula: C = (F - 32) \* 5/9

celsius = (fahrenheit - 32) \* 5.0/9.0;

// Display the result

printf("Temperature in Celsius: %.2f\n", celsius);

return 0;

}

(2.) Convert days into months:

#include <stdio.h>

int main() {

int days;

// Get input from the user

printf("Enter the number of days: ");

scanf("%d", &days);

// Convert days to months (assuming 30 days per month)

int months = days / 30;

int remainingDays = days % 30;

// Display the result

printf("%d days is approximately %d months and %d days.\n", days, months, remainingDays);

return 0;

}

(3.) Convert years into days and months

#include <stdio.h>

void convertYearsToDaysMonths(int years, int \*days, int \*months) {

\*days = years \* 365; // Assuming a non-leap year has 365 days

// Simple calculation for months, assuming an average of 30.44 days per month

\*months = years \* 12;

}

int main() {

int years, days, months;

// Get input from the user

printf("Enter the number of years: ");

scanf("%d", &years);

// Perform the conversion

convertYearsToDaysMonths(years, &days, &months);

// Display the result

printf("%d years is equal to %d days and %d months.\n", years, days, months);

return 0;

}

(4.) Convert minutes into seconds and hours

#include <stdio.h>

int main() {

int minutes;

printf("Enter the number of minutes: ");

scanf("%d", &minutes);

// Convert minutes to seconds

int seconds = minutes \* 60;

printf("%d minutes is equal to %d seconds.\n", minutes, seconds);

// Convert minutes to hours

float hours = minutes / 60.0;

printf("%d minutes is equal to %.2f hours.\n", minutes, hours);

return 0;

}

**If/Else Statements:**

**1. Check Number Is Positive or Negative**

1.1. Find the Character Is Vowel or Not:

#include <stdio.h>

int main() {

char ch;

// Input a character from the user

printf("Enter a character: ");

scanf(" %c", &ch);

// Check if the entered character is a vowel

if ((ch == 'a' || ch == 'e' || ch == 'i' || ch == 'o' || ch == 'u') ||

(ch == 'A' || ch == 'E' || ch == 'I' || ch == 'O' || ch == 'U')) {

printf("%c is a vowel.\n", ch);

} else {

printf("%c is not a vowel.\n", ch);

}

return 0;

}

1.2. Accept marks from user and check pass o r fail :

#include <stdio.h>

int main() {

// Declare variables

int marks;

// Prompt the user for input

printf("Enter the marks: ");

scanf("%d", &marks);

// Check if the marks are greater than or equal to 40

if (marks >= 40) {

printf("Congratulations! You have passed.\n");

} else {

printf("Sorry, you have failed.\n");

}

return 0;

}

1.3. C Program to Check Uppercase or Lowercase or Digit or Special Character :

#include <stdio.h>

int main() {

char ch;

// Read a character from the user

printf("Enter a character: ");

scanf("%c", &ch);

// Check if the character is an uppercase letter

if (ch >= 'A' && ch <= 'Z') {

printf("%c is an Uppercase Letter.\n", ch);

}

// Check if the character is a lowercase letter

else if (ch >= 'a' && ch <= 'z') {

printf("%c is a Lowercase Letter.\n", ch);

}

// Check if the character is a digit

else if (ch >= '0' && ch <= '9') {

printf("%c is a Digit.\n", ch);

}

// The character is a special character

else {

printf("%c is a Special Character.\n", ch);

}

return 0;

}

1.4. to check whether a number is negative, positive or zero. :

#include <stdio.h>

int main() {

int number;

// Input from the user

printf("Enter a number: ");

scanf("%d", &number);

// Check if the number is negative, positive, or zero

if (number > 0) {

printf("The number is positive.\n");

} else if (number < 0) {

printf("The number is negative.\n");

} else {

printf("The number is zero.\n");

}

return 0;

}

**2. Find the Greatest Among Three Numbers**

2.1. Find the minimum among three numbers :

#include <stdio.h>

int findMinimum(int a, int b, int c) {

int min = a;

if (b < min) {

min = b;

}

if (c < min) {

min = c;

}

return min;

}

int main() {

int num1, num2, num3;

printf("Enter three numbers: ");

scanf("%d %d %d", &num1, &num2, &num3);

int minimum = findMinimum(num1, num2, num3);

printf("The minimum among %d, %d, and %d is: %d\n", num1, num2, num3, minimum);

return 0;

}

**3. Checking Whether You Are Eligible for Voting or Not**

3.1. to check whether a character is in the alphabet or not.: #include <stdio.h>

#include <ctype.h>

int main() {

char ch;

// Input a character from the user

printf("Enter a character: ");

scanf("%c", &ch);

// Check if the character is an alphabet

if (isalpha(ch)) {

printf("%c is an alphabet.\n", ch);

} else {

printf("%c is not an alphabet.\n", ch);

}

return 0;

}

**4. Checking Number Is Even or Odd**

4.1. Your year is leap year or not :

#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 && year % 100 != 0) || (year % 400 == 0)) {

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

} else {

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

}

return 0;

}

4.2. Count no. of even numbers and no. of odd number : #include <stdio.h>

int main() {

int n, num, even\_count = 0, odd\_count = 0;

printf("Enter the number of elements: ");

scanf("%d", &n);

printf("Enter %d numbers:\n", n);

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

scanf("%d", &num);

if (num % 2 == 0) {

even\_count++;

} else {

odd\_count++;

}

}

printf("Number of even numbers: %d\n", even\_count);

printf("Number of odd numbers: %d\n", odd\_count);

return 0;

}

4.5. Find maximum in 2 variable : #include <stdio.h>

// Define the function to maximize

double f(double x, double y) {

return -(x\*x + y\*y); // Example: maximizing the negative of the sum of squares

}

int main() {

double step = 0.1; // Step size for each variable

double max\_x = 0.0, max\_y = 0.0, max\_value = f(0.0, 0.0);

// Iterate through the range of values for x and y

for (double x = -10.0; x <= 10.0; x += step) {

for (double y = -10.0; y <= 10.0; y += step) {

double current\_value = f(x, y);

// Update max values if a higher value is found

if (current\_value > max\_value) {

max\_value = current\_value;

max\_x = x;

max\_y = y;

}

}

}

// Print the result

printf("Maximum value: %lf\n", max\_value);

printf("Values at which it occurs: x = %lf, y = %lf\n", max\_x, max\_y);

return 0;

}

4.6. Find minimum in 2 variable : #include <stdio.h>

#include <math.h>

// Define the function you want to minimize

double myFunction(double x, double y) {

// Replace this with your actual function

return x\*x + y\*y;

}

int main() {

double min\_x, min\_y, min\_result;

double step = 0.01; // Adjust the step size as needed

// Set initial values

min\_x = min\_y = min\_result = 1e9; // A large initial value

// Iterate through a range of values for x and y

for (double x = -10.0; x <= 10.0; x += step) {

for (double y = -10.0; y <= 10.0; y += step) {

double result = myFunction(x, y);

// Update minimum values if a smaller result is found

if (result < min\_result) {

min\_x = x;

min\_y = y;

min\_result = result;

}

}

}

// Print the result

printf("Minimum at (%.2f, %.2f) with value %.2f\n", min\_x, min\_y, min\_result);

return 0;

}

**5. Given Date Month and the Year Is Correct or Not Using If-Else**

5.1. to input the week number and print week day. : #include <stdio.h>

#include <time.h>

int main() {

int weekNumber;

// Input week number from user

printf("Enter week number (1-52): ");

scanf("%d", &weekNumber);

// Check if the entered week number is valid

if (weekNumber < 1 || weekNumber > 52) {

printf("Invalid week number. Please enter a number between 1 and 52.\n");

return 1; // Exit with an error code

}

// Calculate the date of the first day of the week using January 1st as a reference

time\_t currentTime;

struct tm \*timeInfo;

time(&currentTime);

timeInfo = localtime(&currentTime);

// Calculate the date of the first day of the entered week

timeInfo->tm\_mday += (weekNumber - 1) \* 7 - timeInfo->tm\_wday;

// Convert the time structure back to a time\_t object

currentTime = mktime(timeInfo);

// Print the weekday of the first day of the week

printf("Week %d starts on: ", weekNumber);

printf(asctime(timeInfo));

return 0; // Exit successfully

}

**LOOPS**:

**(1.)C Program to Reverse a Number Using FOR Loop:**

**(.a) Accept 10 number using for loop and check no. of even numbers and odd numbers:**

#include <stdio.h>

int main() {

int number, evenCount = 0, oddCount = 0;

printf("Enter 10 numbers:\n");

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

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

scanf("%d", &number);

// Check if the number is even or odd

if (number % 2 == 0) {

evenCount++;

} else {

oddCount++;

}

}

printf("\nNumber of even numbers: %d\n", evenCount);

printf("Number of odd numbers: %d\n", oddCount);

return 0;

}

**b. Accept 5 names from user at run time**: #include <stdio.h>

int main() {

// Declare an array of strings to store names

char names[5][50]; // Assuming each name has a maximum length of 50 characters

// Accept 5 names from the user

printf("Enter 5 names, one at a time:\n");

for (int i = 0; i < 5; ++i) {

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

scanf("%s", names[i]);

}

// Display the entered names

printf("\nEntered names:\n");

for (int i = 0; i < 5; ++i) {

printf("%d. %s\n", i + 1, names[i]);

}

return 0;

}