1. Write a program to check if a number is positive, negative, or zero.

**IPO:**

Input: A number (int)

Process: Use if-else to check sign

Output: Type of number (positive/negative/zero)

**CODE:**

#include <stdio.h>

void main()

{

int num;

scanf("%d", &num);

if (num > 0)

printf("Positive number\n");

else if (num < 0)

printf("Negative number\n");

else

printf("Zero\n");

}

**OUTPUT:** A screenshot of a computer

Description automatically generated

1. Write a program to find the largest among three numbers.

**IPO:**

Input: Three integers

Process: Compare using if-else

Output: Largest number

**CODE:**

#include <stdio.h>

void main()

{

int a, b, c;

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

if (a >= b && a >= c)

printf("Largest: %d\n", a);

else if (b >= a && b >= c)

printf("Largest: %d\n", b);

else

printf("Largest: %d\n", c);

}

**OUTPUT:**

A screenshot of a computer

Description automatically generated

1. Write a program to check if a year is a leap year.

**IPO**:

Input: Year

Process: Check divisibility rules

Output: Leap year or not

**CODE:**

#include <stdio.h>

void main()

{

int year;

scanf("%d", &year);

if ((year % 4 == 0 && year % 100 != 0) || year % 400 == 0)

printf("Leap Year\n");

else

printf("Not a Leap Year\n");

}

**OUTPUT:**

A screenshot of a computer

Description automatically generated

1. Write a program to check whether a character is a vowel or consonant.

**IPO:**

Input: A character

Process: Compare with vowels

Output: Vowel or consonant

**CODE:**

#include <stdio.h>

void main()

{

char ch;

scanf(" %c", &ch);

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

if (ch == 'a'|| ch == 'e'|| ch == 'i'|| ch == 'o'|| ch == 'u' || ch == 'A'|| ch == 'E'|| ch == 'I'|| ch == 'O'|| ch == 'U')

printf("Vowel\n");

else

printf("Consonant\n");

}

else

{

printf("Not an alphabet\n");

}

}

**OUTPUT:**

**A screenshot of a computer

Description automatically generated**

1. Write a program to assign grades based on marks.

**IPO:**

Input: Marks (int)

Process: Use if-else ladder

Output: Grade (A, B, etc.)

**CODE:**

#include <stdio.h>

void main()

{

int marks;

scanf("%d", &marks);

if (marks >= 90)

printf("Grade: A\n");

else if (marks >= 80)

printf("Grade: B\n");

else if (marks >= 70)

printf("Grade: C\n");

else if (marks >= 60)

printf("Grade: D\n");

else

printf("Grade: F\n");

}

**OUTPUT:**

**A screenshot of a computer

Description automatically generated**

1. Write a program to check whether a number is divisible by 5 and 11.

**IPO:**

Input: Integer

Process: Use modulus operator

Output: Divisible or not

**CODE:**

#include <stdio.h>

void main()

{

int num;

scanf("%d", &num);

if (num % 5 == 0 && num % 11 == 0)

printf("Divisible by 5 and 11\n");

else

printf("Not divisible by 5 and 11\n");

}

**OUTPUT:**

A screenshot of a computer

Description automatically generated

1. Write a program to find the absolute value of a number.

**IPO:**

Input: Integer

Process: Use if condition

Output: Absolute value

**CODE:**#include <stdio.h>

void main()

{

int num;

scanf("%d", &num);

if (num < 0)

num = -num;

printf("Absolute value: %d\n", num);

}

**OUTPUT:**A screenshot of a computer

Description automatically generated

1. Write a menu-driven program to perform +, -, \*, / operations.

**IPO:**

Input: Two numbers and choice

Process: Switch case

Output: Result of operation

**CODE:**

#include <stdio.h>

void main()

{

int choice;

float a, b;

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

printf("Menu:\n1.Add\n2.Subtract\n3.Multiply\n4.Divide\n");

printf("Enter your choice: ");

scanf("%d", &choice);

switch (choice)

{

case 1: printf("Result: %.2f\n", a + b); break;

case 2: printf("Result: %.2f\n", a - b); break;

case 3: printf("Result: %.2f\n", a \* b); break;

case 4:

if (b != 0)

printf("Result: %.2f\n", a / b);

else

printf("Cannot divide by zero\n");

break;

default: printf("Invalid choice\n");

}

}

**OUTPUT:**

**A screenshot of a computer

Description automatically generated**

1. Write a program to find roots of a quadratic equation.

**IPO:**

Input: a, b, c

Process: Calculate discriminant and roots

Output: Roots or nature of roots

**CODE:**

#include <stdio.h>

#include <math.h>

void main()

{

float a, b, c, d, root1, root2;

scanf("%f%f%f", &a, &b, &c);

d = b \* b - 4 \* a \* c;

if (d > 0)

{

root1 = (-b + sqrt(d)) / (2 \* a);

root2 = (-b - sqrt(d)) / (2 \* a);

printf("Real and distinct roots: %.2f and %.2f\n", root1, root2);

}

else if (d == 0)

{

root1 = -b / (2 \* a);

printf("Real and equal roots: %.2f and %.2f\n", root1, root1);

}

else

{

float real = -b / (2 \* a);

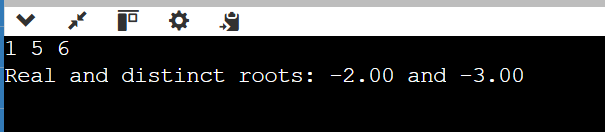
float imag = sqrt(-d) / (2 \* a);

printf("Complex roots: %.2f+%.2fi and %.2f-%.2fi\n", real, imag, real, imag);

}

}

**OUTPUT:**

****

1. Write a program to find the number of digits in a number.

**IPO:**

Input: Integer

Process: Divide number by 10 until 0

Output: Digit count

**CODE:**#include <stdio.h>

int main()

{

int num, count = 0;

scanf("%d", &num);

if (num == 0)

count = 1;

else {

while (num != 0) {

num /= 10;

count++;

}

}

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

}

**OUTPUT:**

**A screenshot of a computer

Description automatically generated**