**Day 2**

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

#include <stdio.h>

int main() {

int num;

printf("Enter a number: ");

scanf("%d", &num);

if (num > 0)

printf("Positive");

else if (num < 0)

printf("Negative");

else

printf("Zero");

return 0;

}

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

#include <stdio.h>

int main() {

int a, b, c;

printf("Enter three numbers: ");

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

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

printf("%d is the largest.", a);

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

printf("%d is the largest.", b);

else

printf("%d is the largest.", c);

return 0;

}

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

#include <stdio.h>

int main() {

int year;

printf("Enter a year: ");

scanf("%d", &year);

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

printf("Leap year");

else

printf("Not a leap year");

return 0;

}

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

#include <stdio.h>

int main() {

char ch;

printf("Enter a character: ");

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");

else

printf("Consonant");

} else {

printf("Not an alphabet");

}

return 0;

}

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

#include <stdio.h>

int main() {

int marks;

printf("Enter marks: ");

scanf("%d", &marks);

if (marks >= 90)

printf("Grade A");

else if (marks >= 75)

printf("Grade B");

else if (marks >= 60)

printf("Grade C");

else if (marks >= 40)

printf("Grade D");

else

printf("Fail");

return 0;

}

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

#include <stdio.h>

int main() {

int num;

printf("Enter a number: ");

scanf("%d", &num);

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

printf("Divisible by both 5 and 11");

else

printf("Not divisible by both 5 and 11");

return 0;

}

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

#include <stdio.h>

int main() {

int num;

printf("Enter a number: ");

scanf("%d", &num);

if (num < 0)

num = -num;

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

return 0;

}

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

#include <stdio.h>

int main() {

int a, b, choice;

printf("Enter two numbers: ");

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

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

scanf("%d", &choice);

switch (choice) {

case 1: printf("Sum = %d", a + b); break;

case 2: printf("Difference = %d", a - b); break;

case 3: printf("Product = %d", a \* b); break;

case 4:

if (b != 0)

printf("Quotient = %d", a / b);

else

printf("Division by zero error");

break;

default: printf("Invalid choice");

}

return 0;

}

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

#include <stdio.h>

#include <math.h>

int main() {

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

printf("Enter coefficients a, b, c: ");

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, %.2f", root1, root2);

} else if (d == 0) {

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

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

} else {

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

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

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

}

return 0;

}

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

#include <stdio.h>

int main() {

int num, count = 0;

printf("Enter a number: ");

scanf("%d", &num);

if (num == 0) count = 1;

while (num != 0) {

num /= 10;

count++;

}

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

return 0;

}