Assignment(4/8/2025)

### **1. 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\n");

else if (num < 0)

printf("Negative\n");

else

printf("Zero\n");

return 0;

}

**Sample Output:**

Enter a number: -5

Negative

### **2. 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("Largest: %d\n", a);

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

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

else

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

return 0;

}

**Sample Output:**

Enter three numbers: 4 8 6

Largest: 8

### **3. 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\n");

else

printf("Not a leap year\n");

return 0;

}

**Sample Output:**

Enter a year: 2024

Leap year

### **4. 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=='e'||ch=='i'||ch=='o'||ch=='u'||

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

printf("Vowel\n");

else

printf("Consonant\n");

return 0;

}

**Sample Output:**

Enter a character: e

Vowel

### **5. Assign grades based on marks**

#include <stdio.h>

int main() {

int marks;

printf("Enter 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");

return 0;

}

**Sample Output:**

Enter marks: 85

Grade B

### **6. 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 5 and 11\n");

else

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

return 0;

}

**Sample Output:**

Enter a number: 55

Divisible by 5 and 11

### **7. 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\n", num);

return 0;

}

**Sample Output:**

Enter a number: -15

Absolute value: 15

### \*8. 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("1. Add\n2. Subtract\n3. Multiply\n4. Divide\n");

printf("Enter your choice: ");

scanf("%d", &choice);

switch (choice) {

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

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

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

case 4:

if (b != 0)

printf("Quotient = %.2f\n", (float)a / b);

else

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

break;

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

}

return 0;

}

**Sample Output:**

Enter two numbers: 10 2

1. Add

2. Subtract

3. Multiply

4. Divide

Enter your choice: 3

Product = 20

### **9. 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\n", root1, root2);

} else if (d == 0) {

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

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

}

return 0;

}

**Sample Output:**

Enter coefficients a, b, c: 1 -3 2

Real and distinct roots: 2.00, 1.00

### **10. 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;

else {

while (num != 0) {

num /= 10;

count++;

}

}

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

return 0;

}

**Sample Output:**

Enter a number: 12345

Number of digits: 5

Thank you