**DAY 3 26/08/25**

1/Write a program in C langauge to find out the last digit of an integer without using modulus and also using modulus

CODE:

#include <stdio.h>

int main()

{

int num, lastDigit1, lastDigit2;

printf("Enter an integer: ");

scanf("%d", &num);

lastDigit1 = num % 10;

lastDigit2 = num - (num / 10) \* 10;

printf("Last digit (using modulus) = %d\n", lastDigit1);

printf("Last digit (without modulus) = %d\n", lastDigit2);

return 0;

}

OUTPUT:

Enter an integer: 12345

Last digit (using modulus) = 5

Last digit (without modulus) = 5

2/Write a program in C langauge to find out the compound interest

CODE:

#include <stdio.h>

#include <math.h

int main()

{

double principal, rate, time, ci, amount;

printf("Enter Principal amount: ");

scanf("%lf", &principal);

printf("Enter Rate of Interest (in %%): ");

scanf("%lf", &rate);

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

scanf("%lf", &time);

amount = principal \* pow((1 + rate / 100), time);

ci = amount - principal;

printf("Compound Interest = %.2lf\n", ci);

printf("Total Amount = %.2lf\n", amount);

return 0;

}

OUTPUT:

Enter Principal amount: 5000

Enter Rate of Interest (in %): 8

Enter Time (in years): 2

Compound Interest = 832.00

Total Amount = 5832.00

3/Write a program in C langauge to find out the area and perimeter of a rectangle

CODE:

#include <stdio.h>

int main()

{

float length, width, area, perimeter;

printf("Enter the length of the rectangle: ");

scanf("%f", &length);

printf("Enter the width of the rectangle: ");

scanf("%f", &width);

area = length \* width;

perimeter = 2 \* (length + width);

printf("Area of the rectangle: %.2f\n", area);

printf("Perimeter of the rectangle: %.2f\n", perimeter);

return 0;

}

OUTPUT:

Enter the length of the rectangle: 7.5

Enter the width of the rectangle: 3.2

Area of the rectangle: 24.00

Perimeter of the rectangle: 21.40

4/Write a program in C langauge to find out the floor and ceiling value of a positive and negative number

CODE:

#include <stdio.h>

#include <math.h>

int main()

{

double num;

printf("Enter a number (positive or negative): ");

scanf("%lf", &num);

double floorValue = floor(num);

double ceilValue = ceil(num);

printf("Number: %.2lf\n", num);

printf("Floor value: %.2lf\n", floorValue);

printf("Ceiling value: %.2lf\n", ceilValue);

return 0;

}

OUTPUT:

CASE1:

Enter a number (positive or negative): 5.7

Number: 5.70

Floor value: 5.00

Ceiling value: 6.00

CASE2:

Enter a number (positive or negative): -5.7

Number: -5.70

Floor value: -6.00

Ceiling value: -5.00

5/Write a program in C langauge to find out the roots of quadratic equation

#include <stdio.h>

#include <math.h>

int main()

{

double a, b, c, discriminant, root1, root2, realPart, imaginaryPart;

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

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

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

if (discriminant > 0)

{

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

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

printf("Roots are real and distinct.\n");

printf("Root 1 = %.2lf\n", root1);

printf("Root 2 = %.2lf\n", root2);

}

else if (discriminant == 0)

{

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

printf("Roots are real and equal.\n");

printf("Root 1 = Root 2 = %.2lf\n", root1);

}

else

{

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

imaginaryPart = sqrt(-discriminant) / (2 \* a);

printf("Roots are complex and conjugates.\n");

printf("Root 1 = %.2lf + %.2lfi\n", realPart, imaginaryPart);

printf("Root 2 = %.2lf - %.2lfi\n", realPart, imaginaryPart);

}

return 0;

}

OUTPUT:

CASE1:REAL AND DISTINCT ROOTS

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

Roots are real and distinct.

Root 1 = 2.00

Root 2 = 1.00

CASE2:REAL AND EQUAL ROOTS

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

Roots are real and equal.

Root 1 = Root 2 = 1.00

CASE3:COMPLEX ROOTS

Enter coefficients a, b and c: 1 2 5

Roots are complex and conjugates.

Root 1 = -1.00 + 2.00i

Root 2 = -1.00 - 2.00i