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COURSE CODE:CSA0239

1. Add Two Integers

IOP:

- **Input:** The user will enter two integer values.
- **Processing:** The program will calculate the sum of the two integers.
- **Output:** It will display the resulting sum to the user.

Program:

```
#include <stdio.h>
int main() {
    int a, b, sum;
    printf("Enter two integers: ");
    scanf("%d %d", &a, &b);
    sum = a + b;
    printf("Sum = %d", sum);
    return 0;
}
```

Output:

Output Clear

```
Enter two integers: 12 7
Sum = 19

=== Code Execution Successful ===
```

2. Swap Two Numbers Using a Temporary Variable

IOP:

- **Input:** The user will enter two numbers.
- **Processing:** The program will use a third variable to temporarily hold one value, then swap the numbers.
- **Output:** It will display the values after swapping.

Program:

```
#include <stdio.h>

int main() {

    int a, b, temp;

    printf("Enter two numbers: ");

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

    temp = a;

    a = b;

    b = temp;

    printf("After swapping: a = %d, b = %d", a, b);

    return 0;}
```

Output:

Output Clear

```
Enter two numbers: 5 4
After swapping: a = 4, b = 5

=== Code Execution Successful ===
```

3.Swap Two Numbers Without Using a Temporary Variable

IOP:

- **Input:** The user will enter two integer values.
- **Processing:** The program will perform arithmetic operations to swap the values without an extra variable.
- **Output:** It will print the swapped values.

Program:

```
#include <stdio.h>

int main() {

    int a, b;

    printf("Enter two numbers: ");

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

    a = a + b;

    b = a - b;

    a = a - b;

    printf("After swapping: a = %d, b = %d", a, b);

    return 0;

}
```

Output:

```
Output Clear
Enter two numbers: 14 7
After swapping: a = 7, b = 14
=== Code Execution Successful ===
```

4. Find the ASCII Value of a Character

IOP:

- **Input:** The user will enter a single character.
- **Processing:** The program will determine the corresponding ASCII value of the entered character.
- **Output:** It will display the ASCII value.

Program:

```
#include <stdio.h>

int main() {

    char ch;

    printf("Enter a character: ");

    scanf(" %c", &ch); // Note the space before %c to consume any leftover newline

    printf("ASCII value of %c = %d", ch, ch);

    return 0;

}
```

Output:

Output Clear

Enter a character: B
ASCII value of B = 66

=== Code Execution Successful ===

5. Calculate Area and Perimeter of a Rectangle

IOP:

- **Input:** The user will enter the length and breadth of a rectangle.
- **Processing:** The program will calculate the area using $\text{length} \times \text{breadth}$ and perimeter using $2 \times (\text{length} + \text{breadth})$.
- **Output:** It will display both area and perimeter.

Program:

```
#include <stdio.h>

int main() {

    int length, breadth, area, perimeter;

    printf("Enter length and breadth: ");

    scanf("%d %d", &length, &breadth);

    area = length * breadth;

    perimeter = 2 * (length + breadth);

    printf("Area = %d, Perimeter = %d", area, perimeter);

    return 0;

}
```

Output:

Output Clear

```
Enter length and breadth: 12 5
Area = 60, Perimeter = 34

=== Code Execution Successful ===
```

6. Compute Simple Interest

IOP:

- **Input:** The user provides the principal amount, rate of interest, and time period.
- **Processing:** The program calculates simple interest using the formula $(P \times R \times T) / 100$.
- **Output:** It displays the computed simple interest.

Program:

```
#include <stdio.h>

int main() {

    float principal, rate, time, si;

    printf("Enter Principal, Rate, and Time: ");

    scanf("%f %f %f", &principal, &rate, &time);

    si = (principal * rate * time) / 100;

    printf("Simple Interest = %.2f", si);

    return 0;

}
```

Output:

Output Clear

```
Enter Principal, Rate, and Time: 2000 2.5 5
Simple Interest = 250.00

=== Code Execution Successful ===
```

7. Convert Celsius to Fahrenheit

IOP:

- **Input:** The user enters temperature in Celsius.
- **Processing:** The program converts it to Fahrenheit using the formula: $F = (C \times 9/5) + 32$.
- **Output:** It displays the temperature in Fahrenheit.

Program:

```
#include <stdio.h>

int main() {

    float celsius, fahrenheit;

    printf("Enter temperature in Celsius: ");

    scanf("%f", &celsius);

    fahrenheit = (celsius * 9/5) + 32;

    printf("Temperature in Fahrenheit = %.2f", fahrenheit);

    return 0;

}
```

Output:

Output Clear

```
Enter temperature in Celsius: 27
Temperature in Fahrenheit = 80.60

=== Code Execution Successful ===
```

8. Find Quotient and Remainder

IOP:

- **Input:** The user inputs two integers (dividend and divisor).
- **Processing:** The program calculates both quotient and remainder using division and modulo operators.
- **Output:** It prints the quotient and remainder.

Program:

```
#include <stdio.h>
```

```
int main() {
```

```
    int dividend, divisor, quotient, remainder;
```

```
    printf("Enter dividend and divisor: ");
```

```
    scanf("%d %d", &dividend, &divisor);
```

```
    quotient = dividend / divisor;
```

```
    remainder = dividend % divisor;
```

```
    printf("Quotient = %d, Remainder = %d", quotient, remainder);
```

```
    return 0;
```

```
}
```

Output:

```
Output Clear  
Enter dividend and divisor: 12 3  
Quotient = 4, Remainder = 0  
=== Code Execution Successful ===
```


9. Check Whether a Number is Even or Odd

IOP:

- **Input:** The user provides an integer.
- **Processing:** The program checks if the number is divisible by 2 using modulus operator.
- **Output:** It displays whether the number is even or odd.

Program:

```
#include <stdio.h>

int main() {
    int num;

    printf("Enter an integer: ");
    scanf("%d", &num);

    if(num % 2 == 0)
        printf("%d is Even", num);
    else
        printf("%d is Odd", num);

    return 0;
}
```

Output:

Output Clear

```
Enter an integer: 5
5 is Odd

=== Code Execution Successful ===
```

10. Calculate Square and Cube of a Number

IOP:

- **Input:** The user enters a number.
- **Processing:** The program calculates the square by multiplying the number by itself and cube by multiplying it three times.
- **Output:** It displays the square and cube.

Program:

```
#include <stdio.h>

int main() {

    int num, square, cube;

    printf("Enter a number: ");

    scanf("%d", &num);

    square = num * num;

    cube = num * num * num;

    printf("Square = %d, Cube = %d", square, cube);

    return 0;

}
```

Output:

Output

Clear

```
Enter a number: 5
Square = 25, Cube = 125
```

```
=== Code Execution Successful ===
```

