Assignment -02

Experiment 2: Operators

Q1. WAP a C program to calculate the area and perimeter of a rectangle based on its length and width.

Code:

```c
//WAP a C program to calculate the area and perimeter of a rectangle based on its length and width.


#include <stdio.h>
int main()
{
    int length, width, area, perimeter;

    //input the length and width of rectangle
    printf("Enter the length: ");
    scanf("%d", &length);

    printf("Enter the width: ");
    scanf("%d", &width);

    //calculates the result
    area = length * width;
    perimeter = 2 * (length + width);

    //prints the output
    printf("area = %d\n", area);
    printf("perimeter = %d", perimeter);

    return 0;

}
```

Output:

```
Enter the length: 2
Enter the width: 3
area = 6
perimeter = 10
```

Summary**:**

- Formula for **Area** = length × width.
- Formula for **Perimeter** = 2 × (length + width).
- %d is used for integer values.
- Negative inputs accepted but meaningless for geometry.

- Only works for rectangles, not other shapes.

Q2. WAP a C program to Convert temperature from Celsius to Fahrenheit using the formula: F = (C * 9/5) + 32.

Code:

```c
//WAP a C program to Convert temperature from Celsius to Fahrenheit using the formula: F = (C * 9/5) + 32.


#include <stdio.h>
int main()
{
    float celsius, fahrenheit;

    //input the temperature in celsius
    printf("Enter the temperature in Celsius: ");
    scanf("%f", &celsius);

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

    //prints the output
    printf("Temperature in fahrenheit = %.2f", fahrenheit);

    return 0;
}
```

Output:

```
Enter the temperature in Celsius: 32
Temperature in fahrenheit = 89.60
```

Summary:

- Formula: F = (C × 9/5) + 32.
- Celsius to Fahrenheit conversion is widely used in weather reports and thermodynamics.
- float datatype is used because temperature can be in decimals.
- Only converts **Celsius → Fahrenheit**, not both ways.
- Floating-point rounding errors possible for precise scientific calculations.