HOMEWORK 4

Question 1) You are a scientist analyzing temperature variations in different cities. You have recorded temperature values in Celsius and need to display them in both Celsius and Fahrenheit using a structured format.

Given Data:

The recorded temperatures (in Celsius) are: 5, 12.5, 23, 37.8, 100.

Task:

1. **Convert** the given temperature values from Celsius to Fahrenheit using the formula:

$$F = \left(C * \frac{9}{5}\right) + 32$$

2. **Display** the values in a formatted way using `fprintf`. The output should follow this structure:

```
Temperature:  5.00 °C  |  41.00 °F
Temperature: 12.50 °C  |  54.50 °F
Temperature: 23.00 °C  |  73.40 °F
...
```

Question 2) You are developing a simple weather classification system. Your program will take the temperature as input and classify it into one of three categories: **Cold, Warm, or Hot** based on the following conditions:

- **Cold:** Temperature is below 10°C
- **Warm:** Temperature is between 10°C and 25°C (inclusive)
- **Hot:** Temperature is above 25°C

Task:

1. **Ask** the user to enter the temperature in Celsius.
2. **Check** the temperature range using three `if` statements.
3. **Display** the classification using `fprintf`. The output format should be:

```
Enter the temperature in Celsius: 5
The weather is Cold.

Enter the temperature in Celsius: 18
The weather is Warm.

Enter the temperature in Celsius: 30
The weather is Hot.
```

Hint:

- Use conditions like `if temperature < 10`, `if temperature > 25`, etc.
- Each category should be checked separately with an `if` statement.

Question 3) You are developing a MATLAB script that determines whether a given number is even or odd.

Task:

1. **Ask** the user to enter a number.
2. **Check** the number using `if-else`:
    - If the number is **even**, print:

      ```
      The number is even.
      ```

    - If the number is **odd**, print:

      ```
      The number is odd.
      ```

Hint:

- Use the `rem()` function to check if the number is divisible by 2.