**Python Assignment 5: File Handling, Exception Handling & OOPS**

**File Handling:**

**Problem Statement**: Create a Python program that performs the following tasks:

1. Reads data from a text file.
2. Processes the data.
3. Writes the processed data to a new text file.

**Step wise Instructions:**

1. **Write:**
   * Prompt the user to enter their name, age, and favorite color. Save this information to a text file named user\_info.txt.
2. **Read:**
   * Read the content of user\_info.txt and display it on the console.
3. **Append:**
   * Prompt the user to enter their favorite movie and append this new piece of information to the file user\_info.txt.
4. **Readlines:**
   * Read all the lines from user\_info.txt and display each line on the console, one by one.

.

**Exception Handling:**

**Problem Statement**: Create a Python program that converts a temperature from Celsius to Fahrenheit by performing the following tasks:

1. Prompts the user to enter a temperature in Celsius.
2. Converts the entered temperature from Celsius to Fahrenheit.
3. Implements exception handling to manage errors that may occur during the conversion process.
4. Provides appropriate error messages based on the type of exception encountered.

**Step wise Instructions:**

**1) Prompting for User Input:**

* Use the input() function to prompt the user to enter a temperature in Celsius.
* Convert the input to a float using float().

**2) Converting Celsius to Fahrenheit:**

* Use the formula: **Fahrenheit = (Celsius \* 9/5) + 32**, where **Celsius** is the temperature in Celsius and **Fahrenheit** is the temperature in Fahrenheit.

**3) Handling Exceptions:**

* Use try, except, else, and finally blocks to handle exceptions that may occur during the conversion process.
* **ZeroDivisionError:**
  + Handle this exception that may occur if an unexpected division by zero happens during the process.
  + Provide a message indicating that division by zero is not allowed.
* **TypeError:**
  + Handle this exception if an arithmetic operation is attempted on incompatible types (e.g., dividing an integer by a string).
  + Provide a message indicating that arithmetic operations cannot be performed on incompatible types.
* **ValueError:**
  + Handle this exception if the user enters a non-numeric value when prompted for the temperature in Celsius.
  + Provide a message indicating that the input should be a numeric value.
* **Generic Exception:**
  + Handle any other unexpected exceptions that may arise during the execution of the program.
  + Provide a generic error message indicating that an unexpected error occurred.

**4) Output Result:**

* If no exceptions occur, print the calculated Fahrenheit temperature.
* Use the finally block to print a message indicating the end of the program, regardless of whether an error occurred.

**OOPS:**

**Problem Statement**: To create a simple class in Python and understand how to create and use objects of that class.

**Step wise Instructions:**

1. **Create a Class** **Library:**

* Attributes:
  + **book\_title**: Holds the title of the book.
  + **year\_published**: Holds the year the book was published.
* Methods:
  + **\_\_init\_\_(self, book\_title, year\_published)**: Initializes the class with book\_title and year\_published.
  + **display\_info(self)**: Prints out the book's title and year of publication.

1. **Create Objects and Use Methods:**

* Create at least two instances (objects) of the **Library** class with different titles and years.
* Call the **display\_info** method for each object to display their respective information.