Programming 1: Lab 1 : Basic Syntax and Example Programs

Write the python code for the following questions. Handle all the valid and invalid test cases. Write down relevant comments in your code:

1. Input the length and width (in metres) of a plot and calculate its area.

2. Modify the above question to take input in feet and calculate the area in square metres.

3. Take 2 integers x and y as input and find whether y is divisible by x or not. For negative integers, display the message "Invalid input".

4. Take an integer as input and check whether it is even or odd.

5. Find the area of a Circle of radius r. Only radius between 1 and 100 should be accepted.

6. Take a value of temperature as input (in Celsius) and convert into degree Fahrenheit. Also, display the equivalent temperature in Kelvin.

7. Using the temperature conversion formula, calculate the value at which the Celsius and corresponding Fahrenheit values are the same.

8. The a value of year as input and find whether it is a leap year or not. Consider all the cases of valid and invalid inputs. Write down the test cases for the same.

9. You are designing a software for a bank. The bank calculates interest on their RD accounts at 7.1% p.a. You need to develop the functionality, where the user can check their returns for a given duration and for a given monthly installment amount. Note that the bank does not allow monthly installment less than Rs. 500/- and the duration of RD should be atleast 6 months. Check for valid and invalid inputs.

10. A day has 86,400 secs (24*60*60). Given a number in the range 1 to 86,400, output the current time as hours, minutes, and seconds with a 24-hour clock. For example: 70,000 sec is 19 hours, 26 minutes, and 40 seconds.