ED5340:Data Science: Theory and practice

LAB 5: PART 2- FUNCTIONS AND CLASSES

✔ Done

Opened: Wednesday, 21 February 2024, 12:00 AM
Due: Saturday, 24 February 2024, 11:59 PM

5. WAP to implement a class called "Bank_Account" representing a person's bank account.
The class should have the following attributes: account_holder_name (str), account_number(int), address (str) and balance (float).
The class should have methods to implement the following:
deposit - Deposits a given amount into the account
withdraw - Withdraws a given amount from the account
check_balance - To get the current balance
update_details - To update the name and address from the user and displays a message indicating successful update
display_details - To display the details of the account.

6. Define a Matrix class of dimensions m X n (the values for m and n can be taken as input). Demonstrate matrix addition, subtraction, multiplication, element-by-element multiplication, scalar multiplication (use map here). Use operator overloading wherever possible. (Hint: In the constructor, use 'random' and create list of list using list comprehension. In the arguments of constructor, send the number of rows and columns)
Ensure that your implementation follows best practices for class design and encapsulation in Python. Comment your code to explain the functionality of each method.

7. Create a Python class named Time that represents a moment of time. The class should have attributes hour, minute, and second. Include the following features:
A constructor that initializes hour, minute, and second, with validation to ensure each attribute is within its correct range (hours: 0-23, minutes: 0-59, seconds: 0-59).
A __str__() method that returns the time in a format hh:mm:ss.
Methods set_time(hour, minute, second) and get_time() to update and access the time, respectively.
An add_seconds(seconds) method that adds a given number of seconds to the current time object, adjusting the hour, minute, and second attributes accordingly.

8. Create a class named Geometry that provides static methods for various geometric calculations, such as area and perimeter, for different shapes (circle, rectangle, square). Include:
Static methods like circle_area(radius), rectangle_area(length, width), and square_area(side).
Static methods for perimeter calculations for the above shapes.
Ensure that methods check for valid inputs (e.g., positive numbers).

Edit submission | Remove submission

Submission status

Submission status	Submitted for grading
Grading status	Graded
Time remaining	Assignment was submitted 41 mins 34 secs early
Last modified	Saturday, 24 February 2024, 11:17 PM
File submissions	AM23M022_LAB5_PART2_21_02_2024.py 24 February 2024, 11:17 PM
Submission comments	Comments (0)

Feedback

Grade	10.00 / 10.00
Graded on	Monday, 3 June 2024, 9:16 AM
Graded by	eM ed19b019 MISHMA MARIYAM RAJU

◄ Lab 5: Part 1- Functions and classes

Jump to...

LAB 5 :VIDEO LINK SUBMISSION ►