

ED5340:Data Science: Theory and practice

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LAB 6: INHERITANCE & FILES - PART A

✓ Done

Opened: Wednesday, 28 February 2024, 1:30 PM

Due: Wednesday, 28 February 2024, 6:00 PM

1. Design a class named Polygon that initializes with the length of a side. Then, derive a class named Square from the Polygon class. Utilize the side length defined in the Polygon class for the Square class. Within the Square class, implement a method called findArea() that calculates and returns the square's area based on its side length. Use __init__() for necessary initialization

2. (a) Create a class Father with attributes

- father_name (string), father_age (int), father_talents (set of strings)

Create a class Mother with attributes:

- mother_name (string), mother_age (int), mother_talents (set of strings)

Create a class Child that inherits both father and mother with attributes:

- child_name (string), child_age (int), child_gender(string)

(b) Create a function getChildDetails() in Child to input the details of the child, it's father and mother and printChildDetails() to print the details using printChildDetails()

(c) Create an object of class Child and read the details by invoking getChildDetails() and display the details entered.

(d) Create a function displayTalents() in class Child that displays the talents of the child inherited from father and mother. A talent is inherited to a child if both

the parents possess it.

3. Text File Input Output

Create a .txt (text) file and use the pledge of India as the content of the text file.

Write a python program that reads this text file, processes it by counting the number of occurrences of each word in the file, and then writes the result back to a new text file.

4. For a restaurant, create a parent class 'Bill' which has the properties as 'Customer name', 'Table Number' and 'Order' of which the name, order are strings and table number is a positive integer. Define a method to extract the order details from the string and return a 2-D array of ordered items & their number. Create a child class 'Restaurant Bill' which has a property called 'Price list' of the items and has a method to calculate the total bill amount by using the price list and order details. Also have a method to print the complete bill for the customer including taxes and service charges.

The strings will be of the following format:

#Name: "Akshay" (Name of the customer)

#Table Number: 7 (Table Number)

#Order: "Item1x1,Item2x3,Item3x1,..." (ItemxNumber needed)



#Price List: "Item1-100,Item2-70,Item3-250,..." (Item-Price)

5. For the previous question(restaurant Bill) - take name, table no, order details from a file, price list from another file and print the whole bill to the new file.

Edit submission

Remove submission

Submission status

Submission status	Submitted for grading
Grading status	Graded
Time remaining	Assignment was submitted 1 hour 8 mins early
Last modified	Wednesday, 28 February 2024, 4:51 PM
File submissions	<div><div> AM23M022_LAB6_PART1_28_02_2024.py 28 February 2024, 4:47 PM</div><div> txt_files_LAB6_PART1.zip 28 February 2024, 4:51 PM</div></div>
Submission comments	<div><div></div><div>▶ Comments (0)</div></div>

Feedback

Grade	10.00 / 10.00
Graded on	Wednesday, 22 May 2024, 8:43 PM
Graded by	eM ed19b017 M JASWANTH KUMAR

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