

Comprehensive Python course for AI

Exercises 21 && 22

Deadline: 2023 28 December

Score: 650

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Exercises 21

Score: 500

Question 01 (OOP)

500

You are tasked with designing an object-oriented library management system. This system will manage various aspects of a library, including handling books, staff, members and reservations. Your goal is to create an interactive system that demonstrates key principles of object-oriented programming.

Your system should include the following classes, with the specified attributes and methods:

1. Person (Abstract Base Class)

- Attributes: name, age
- Methods:
 - Method to initialize the name and age.
 - edit_profile to modify the name and age.
 - An abstract method describe_role.

2. Librarian (Inherits from Person)

- Attributes: librarian_id, name, age
- Methods:
 - Method for create a unique ID for each librarian.
 - describe_role to print the role description.

Question 01 (OOP)

500

3.Member (Inherits from Person)

- **Attributes:** member_id, name, age, books_borrowed
- **Methods:**
 - Method for create a unique ID for each member.
 - borrow_book and return_book to manage book borrowings.
 - describe_role to print the role description.

4.Book

- **Attributes:** title, author, book_id, is_borrowed
- **Methods:**
 - Method for create a unique ID for each book.
 - check_availability to see if the book can be borrowed.

5.Library

- **Attributes:** name, books, members, librarians, reservations
- **Methods:**
 - Method to initialize the library.
 - Methods to add books, register members, hire librarians, manage reservations.

6.Reservation

- **Attributes:** reservation_id, member, book, reservation_date, status
- **Methods:**
 - Method to create a new reservation.
 - cancel_reservation to cancel an existing reservation.

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Exercises 22

Score: 150

Question 01 (OOP)

150

- ❖ Find a music-related API and create an object-oriented Python application to interact with it. Focus on understanding and utilizing the API to access and manage music data, applying key OOP principles to structure your application efficiently.

Thanks

Good Luck!

Don't give up on your dreams 😊