Exercises for Java Lab session – 5 (19/9/2024)

Topics: Abstract class, static, Date API, Array List

Write an *abstract* class called **UniversityLibrary** whose fields are:Books - an *arraylist* of **Book**, **acquisitionDate**(Date), **dueDate**(Date). *Static* variable fineperDay(double) initialised to Rs.4/-. The methods are:

i.   **LendingLibrary()** that initialises **acquisitionDate** and **dueDate** with default values: false.

ii. **void addBook(Book)** – includes the Book into Books

iii. **Bool issue(Book)** that if Book is available for issue, it sets the acquisitionDate to the current Date, dueDate as 15th day from the current Date, decrements the number of copies of Book available. For successful issue, it returns true else false

iv. **Bool return(Book)** – calculates whether returned before dueDate, increments the number of copies of Book available and calculates the fine if delayed return.

v.   **double CalculateFine()**- calculates the fine

vi. static method **void setfineperDay(double)**- modifies the fineperDay

vii. **toString()** that displays the details

Write a test application to invoke the functionalities of each class.

NOTE: make use Date API
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