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Q2. Consider an application of declaring the examination result of class XII science stream. The XII class science student has to take three optional (, Physics, Chemistry, Math or Biology) and two compulsory courses (such as English and Computer or English and Physical Education). There are two types of exams conducted by the examination authority theory and lab. Mathematics doesn't have lab exam component. Each theory exam is of 100 marks except Physics, Physics and Biology (they are of 70 marks each). Policy of grading is as follows:

Percentage >=80 : Honours
Percentage >=60 :First Div
Percentage >=480: Second Div
Percentage >=40 :Third Div
Below 40 : Failed

Determine the classes and their relationships
Write the testing class to enter 5 students records and for the following functions.

1. To display the student details with highest percentage.
2. To display a record of student on the basis of Roll number.

Q3. Suppose we want to model a library which contains many kinds of items:

- Printed: books, journals, magazines, and documents;
- Multimedia: vinyl, tapes, CDs, and DVDs.

... and title. Every printed item must have a number

Q3. Suppose we want to model a library which contains many kinds of items:

- Printed: books, journals, magazines, and documents;
- Multimedia: vinyl, tapes, CDs, and DVDs.

Every item in the library must have an ID number and title. Every printed item must have a number of pages, and every multimedia item must have a length, in seconds.

Develop class hierarchy in Java and main program to test your classes.

Q4. The Charity Collection Box contains money in different currencies - dollars-cents or pounds-pence or rupees-paise. All of these currencies have notes and coins. The note and coin numbers are counted when they are added based on their value (that is number of 5 rupee notes, or $1 dollar note).

- Create a super class representing Currency is created with different denomination for of notes and coins and subclasses Dollar, Pound and Rupee has conversion methods to rupees, print() and compute().
- Create a class called CollectionBox that allows entry of these currencies in terms of number of notes and coins of different denomination. Create a display method that allows any of these currency types and displays the total amount collected in terms of Rupees. (Assume1 dollar= Rs. 50 and 1 pound = 78).

Q5