

MAT 335E Programming Algorithms

Lab-10 / CRN : 10611

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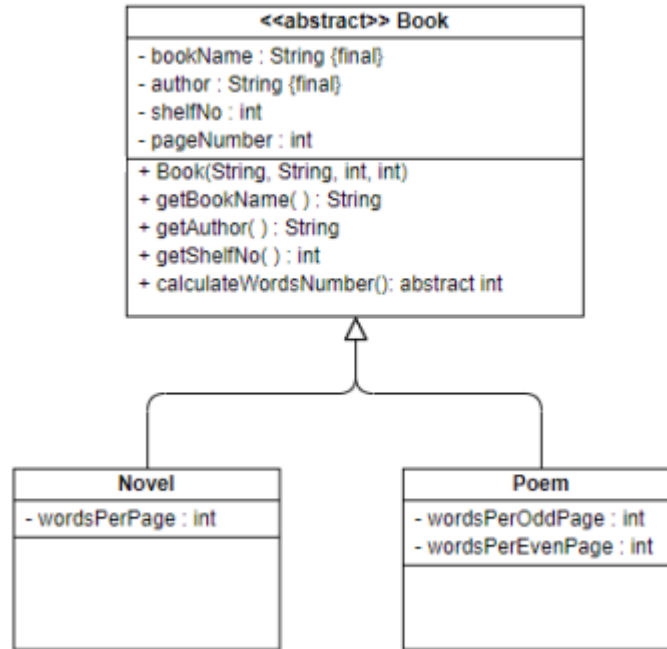
1 Question 1

Definition: A symmetric matrix is a square matrix that is equal to its transpose, i.e. $A^T = A$ where A^T is the transpose of A .

Write a Java static method that takes a matrix as a parameter. The method should return 1 if the matrix is symmetric, and 0 if it is not.

2 Question 2

Write a Java source code of the UML diagram below and a test class to run your program.



a.) Write a Java source code of class Book.

- **shelfNo** indicates shelf number of the book.
- **pageNumber** indicates total number of pages of the book.
- **CalculateWordsNumber()** calculates the average number of words in the book. Note that the first page number of each book is one.

b.) Write a Java source code of class Novel.

- **wordsPerPage** member shows the average number of words per page. That is, each even and odd page number have same number of words.
- Constructor of this class populates all members which associated with Novel.

c.) Write a Java source code of class Poem.

- **wordsPerOddPage** member shows the average number of words in each odd page number of the book.
- **wordsPerEvenPage** member shows the average number of words in each even page number of the book.
- Constructor of this class populates all members which associated with Poem.