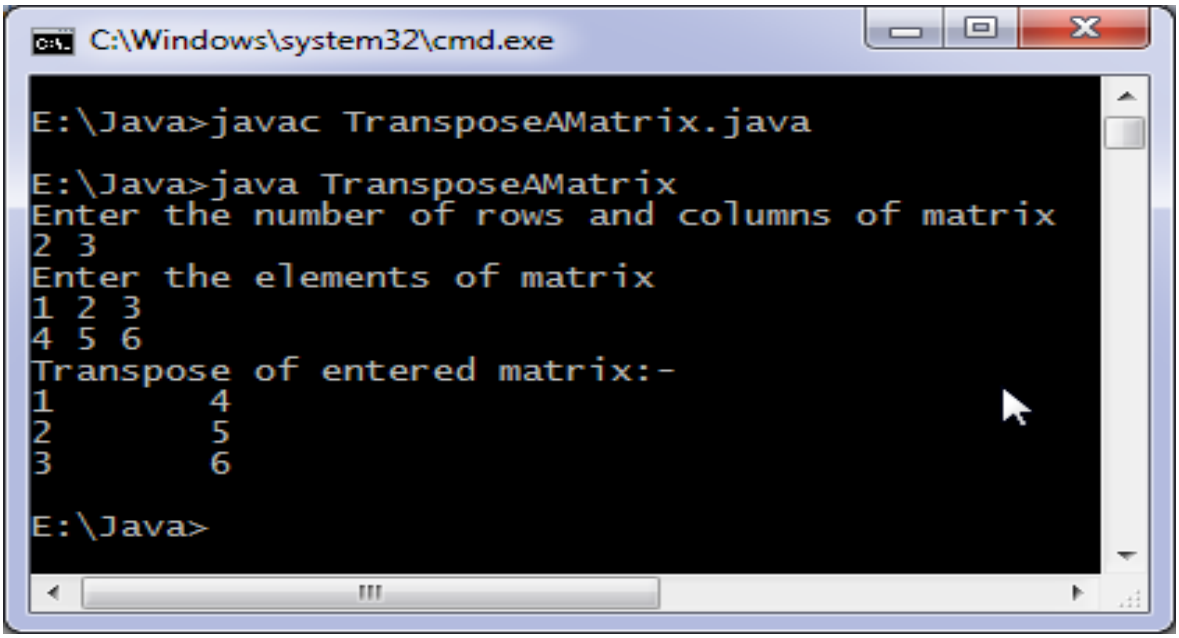
Web Engineering

Course Instructor: Dr. Wasim Ahmad Khan

- Read the statements carefully before starting the implementation.

TASK 1: (10)

Input matrix order and values from user and output its transpose.



TASK 2: (10)

Input a number and check if its palindrome or not.

Example:

Input a number: 121

Number is Palindrome

Input a number: 11121

Number is not a palindrome

TASK 3: (10)

Input string from user and display Separated by space.

Example:

Input String: I am Student

Result:

I

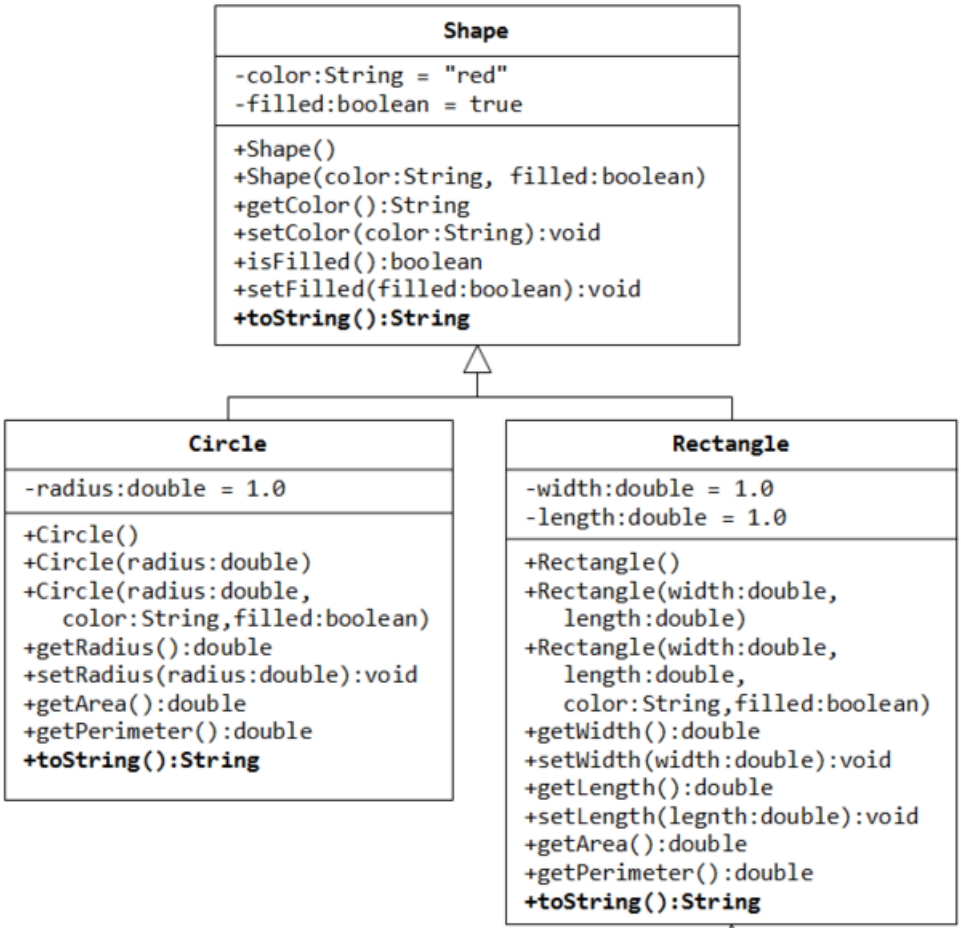
Am
Student

TASK 4: (10)

Write an Interface of **StudentData ,** having methods like setName(), setRollNumber(), setCGPA() , getName(), getRollNumber(), getCGPA() ,showData(). Then implement and use this interface in a class named as **Student.** Implement all methods and show proper working.

TASK 5: (10)

Create a class Shape as shown in figure. Also create the classes Circle and Rectangle that should inherit the Shape class and implement all the functions. Display all information on console.



```
public class Shape{
//Member Functions
}
public class Circle  extends Shape{
//Data Members
//Member Functions
}
public class Rectangle extends Shape{
//Data Members
//Member Functions
}
```

TASK 6: (10)

Create a class called Book to represent a book. A Book should include four pieces of information as instance variables-a book name, an ISBN number, an author name and a publisher. Your class should have a constructor that initializes the four instance variables. Provide a mutator method and accessor method (query method) for each instance variable. Inaddition, provide a method named getBookInfo that returns the description of the book as a String (the description should include all the information about the book). You should use this keyword in member methods and constructor. Write a test application named BookTest to create an array of object for 30 elements for class Book to demonstrate the class Book's capabilities.

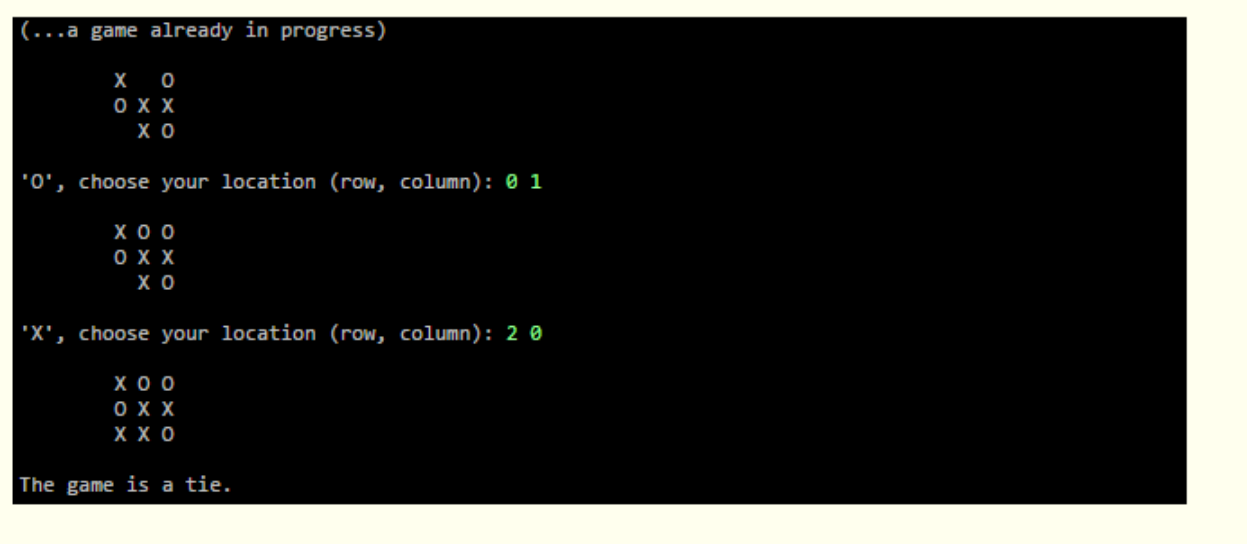
```
Public class Book{
//Data Members

//Member Functions
}
public class BookTest {
```

```
public static void main(String[] args)
{
Book test[] = new Book[13];
test[1] = new Book();
test[1].getBookInfo();
}
```

TASK (BONUS):

Tic-Tac-Toe

Code two-player game of Tic-Tac-Toe. You'll use a two-dimensional array of chars.



Best of Luck