CS5617 Software Engineering: Sample quiz

Total: 15 marks   Time: 50 minutes

Question #1: (10 marks)

Design a test harness that will support running automated tests for a software project.

Hint: You can think of three major components for a test harness:

1. An interface that defines how a test class should look like.
2. Various test classes each implementing the interface mentioned above.
3. Execution engine that will run all the selected tests.

You can see that your framework will define and implement #1 and #3 above where as consumers of your framework will be writing #2.

Questions:

- Write the interface definition for #1.   *(3 out of 10 marks)*
- Write a skeletal code for #3.   *(2 out of 10 marks)*
- Draw the class diagram for the test harness.   *(5 out of 10 marks)*

Question #2: (2 marks)

Draw a class diagram to show the relationship between the various types here. The type names are self-explanatory.

- interface IAutomobile,
- class Engine,
- class Chassis,
- class SnowTyre (to be used only during snow),
- class Passenger,
- class Car.

Question #3: (3 marks)

In a software project similar to yours, a whiteboard module is offering an interface with a "Draw" method to render the whole whiteboard onto the canvas where as internally the component might "Draw" one or more shapes (like Circles, Rectangles, Squares etc.) onto the canvas. The client of the whiteboard component only cares about calling the "Draw" method on the whiteboard object itself. Which design pattern is used here? Draw the class diagram for the types mentioned here.