Mandatory Seminar Exercise

Battleship Game

Taking as reference Sprint 2 of the Battleship game, draw the following UML diagrams.

Exercise 1:

Draw a **class diagram** (the same as in Sprint2) to model the main classes of the game, their attributes, public methods and relations. The following classes should appear: Main, Game, Board, Player, HumanPlayer, ComputerPlayer, Square, Target, Ship, Water, TurnSelector and Coordinate.

You must consider the following concerns:

- Setup the diagram boxes to avoid line intersections.
- Lines must be vertical or horizontal (or both).
- Class names and methods must follow UML[1] conventions.

Exercise 2:

Draw a **sequence diagram** to model the interaction between the objects used when a turn takes place. In each turn, a coordinate that has not been shot before is generated randomly and a shot is made into that coordinate.

You must consider the following concerns:

- Model only second level calls.

- Model at least the objects of these classes.: Game, Player, Coordinate, Board and ConsoleWriter (presenter)

- Remember that you can represent loop or alternatives using frames.

Exercise 3:

Draw a **state diagram** to model the state of a Square and its transitions.

Exercise 4:

Draw an **activity diagram** to represent the process of method play() of the class Game.

You must consider the following concerns:

- Lines must be vertical or horizontal (or both).

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[1] Same as the name convention that we use for Java.

− Symbols (boxes) of activity tend to be in line either horizontally or vertically.

Handling over

You must follow these guidelines:

1. Only **1 pdf with the 4 diagrams** should be handed over. Use one page for each diagram.

2. All diagrams should be made with an **UML tool**.

3. Diagrams should be clear, without lines crossing, and they must follow the Java Code Conventions.

4. All diagrams should fit properly each page, without being either too small or too big.

5. This assignment must be handed over on **the appropriate task in the virtual campus**.

6. **Handling over date: March 22**. This date you must hand over in the tasks designated for it:

   ✓ The PDF file with all the diagrams (*identified with name and surname*)

   ✓ The three projects Sprint1, Sprint2 and Sprint3 (*identified each with name and surname).*