**WEEK 1 HOMEWORK**

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**Course Name: ISTG 6010-01-OBJECT ORIENTED SYSTEMS**

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**INTERVIEW REPORT**

The interview is conducted with a Battleship expert to gain insights into the domain of the game. The summary of questions and responses are listed below:

**Questions and Answers**

**Question 1:** What are the fundamental rules of Battleship?

**Answer:** A two-player strategy game is known as the battleship. In this game, each player places a fleet of ships on a grid. To attack the opponent's fleet, players are required to take turns calling out coordinates. The main goal is to sink the opponent's ships before opponents sink yours.

**Q2:** What are the key challenges in implementing Battleship as software?

**Answer:** Ensuring a fair and randomized ship placement is the main challenge. Other challenges are intuitive user interface maintenance and providing accurate feedback on hits and misses also implementing a reliable turn-based system.

**Q3:** What features of the software version should be included?

**Answer:** The software version should require implementation features like a user-friendly grid system and AI opponent for solo play. Also, implements a tracking system for previous moves and multiplayer mode. It should provide visual and audio feedback for every hit and miss.

**Q4:** What are the different types of users for this game?

**Answer:** The main targeted users of the game include casual and competitive players. Also, adding learning instructions with the purpose of beginners learning the game for the first time.

**Q5:** How should structure the user interactions?

**Answer:** With the purpose of selecting and confirming attack coordinates in a simple way, users should have an easy-to-navigate interface with clear instructions. They should have instructions for interactive ship placements easily.

**USER STORIES**

User stories have been developed based on the gathered requirements in the following format:

**Story 1:** As a player, I want to place my ships manually or randomly so that I can start the game with a valid fleet.

**Acceptance Criteria:** The system should provide an option for automatic placement that should allow manual ship placement with drag-and-drop functionality. Before confirming placement, the player can rotate their ships. Also, until all ships are placed the system prevents the game.

**Story 2:** As a player, I want to select a coordinate to attack so that I can try to sink my opponent’s ships.

**Acceptance Criteria:** The system should provide feedback to check if it is a hit or miss by validating the coordinate input. Validate inputs can provide notifications to the selected coordinates that the player has not already attacked the opponent. The system can mark hits with a red indicator and a miss with white indicators for the coordinates. Then the opponent can automatically switch in their turns.

**Story 3:** As the blue player, I want a notification when the red player takes a turn so that I know when it is my turn to play.

**Acceptance Criteria:** When the red player finishes their turn, the system provides a visual or audio notification. When it is the blue player’s turn a message displays “Your turn!”. The blue player cannot take action until their turn begins. Proper turn-based mechanics are ensured by the game.

**Story 4:** As the red player, I want to receive a notification when I successfully sink a ship so that I know my progress in the game.

**Acceptance Criteria:** When all parts of a specific ship have been hit on the blue player’s grid, is detected by the system. On the red player’s tracking grid, the sunken ship is marked visually. A successful sink can be indicated by an audio cue by the system. If applicable, the red player can continue their turn or pass to the blue player.

**Story 5:** As a player, I want an AI opponent option so that I can play even if no human opponent is available.

**Acceptance Criteria:** The predefined logics are followed by the AI for placing ships and making moves. After the player finishes, the AI automatically takes its turn. As per user requirements, the difficulty levels (easy, medium, hard) can be adjusted.

**Story 6:** As a player, I want an option to restart the game so that I can play again without reloading the application.

**Acceptance Criteria:** At any point in the game required to implement a "Restart" button. The previous grids are cleared by restarting and resetting all game states. Before further new processing, players must confirm the restart actions.