

START GAME SEQUENCE play, instructions or quit

when play => computer should place their ships randomly

I have laid out my ships on the grid. You now need to layout your two ships. The first is two units long and the second is three units long. Player enters ship coordinates. Asked to enter first ship then asked to enter second ship

QUIT

The grid has A1 at the top left and D4 at the bottom right.

Enter the squares for the two-unit ship:

GAME FLOW players take turns by selecting positions on the grid

Display the map from the current player's point of view, prompt the player for a position on which to fire, indicate whether a shot was a (H)it or (M)iss and display updated

Prompting Player for a Shot

At the bottom of the grid display, the board should include a message prompting the player to enter a coordinate to fire on. This should follow the same pattern as when placing ships – a letter/number combination to indicate the row and column to hit.

You should validate that the player's choice is a valid coordinate on the board, and that they have not already fired on that position before. (If they have, display a message explaining these constraints)

Computer Shot Sequence

Once the player has ended their turn, the AI will fire. This follows a similar process, except that instead of prompting for a target, the computer will simply select one at random from the positions that it has not yet fired at (again, not a very sophisticated AI, but good enough for now).

Once the computer has selected, display a message to the human player indicating which position the computer fired at and whether it was a miss or a hit.

Finally, give the player an overview of the computer's progress so far by displaying the game grid of the player's ships with Hs over any positions the computer has hit and Ms over any positions the computer has fired at but missed.

Then, return to the Player Shot Sequence.

Displaying Shot Information

After the player has entered their target, display a short message indicating whether it was a hit or a miss. Additionally, re-render the board showing the new shot.

Finally, prompt the player to end their turn by pressing ENTER.

Ship Hit Sequence

If the hit did not sink the ship, tell them that they hit an enemy ship

If the hit sunk the ship, tell them they sunk it and the size of the ship.

If the hit sunk the ship and it was the last enemy ship, then enter the End Game Sequence

End Game Sequence

When either the player or computer win the game...

Output a sorry or congratulations message Output how many shots it took the winner to sink the opponent's ships Output the total time that the game took to play