Battleship

How to Play

Objective

The goal of the game is to sink all the opponent's ships by guessing their locations on a grid, as fast as possible.

Getting Started

- Start the Game: Run the script to launch the application.
- Controls:
    - Attack: Enter the coordinates in the input box and click the "Attack" button.
    - Quit: Close the window to exit the game.

Gameplay

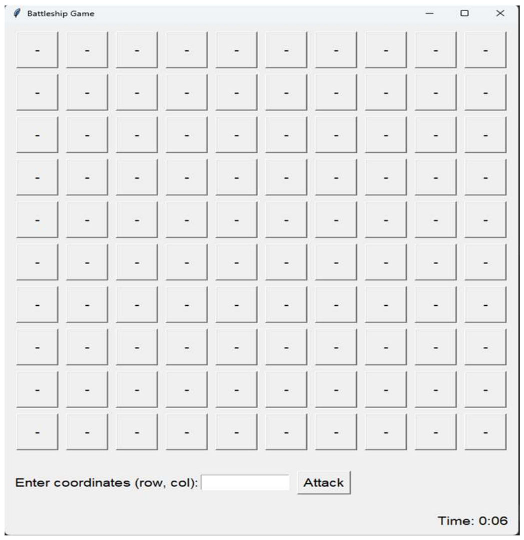
- Setting Up: The game randomly places ships of various lengths on a 10x10 grid. Ships can be placed horizontally or vertically.
- Making a Move:
    - The player enters coordinates in the format "row, col" and clicks the "Attack" button.
    - The game checks if the attack hits or misses a ship.
    - The board updates to show hits ('X') and misses ('O').
- Winning the Game: The game ends when all ships are sunk. The duration of the game is logged

Enjoy playing Battleship!

Battleship Demo Link:
https://drive.google.com/file/d/12KLXGVQMAhfBPZ3xFZTOIgzrBDiem6md/view?usp=sharing

Screenshots

1. Initial Game Screen

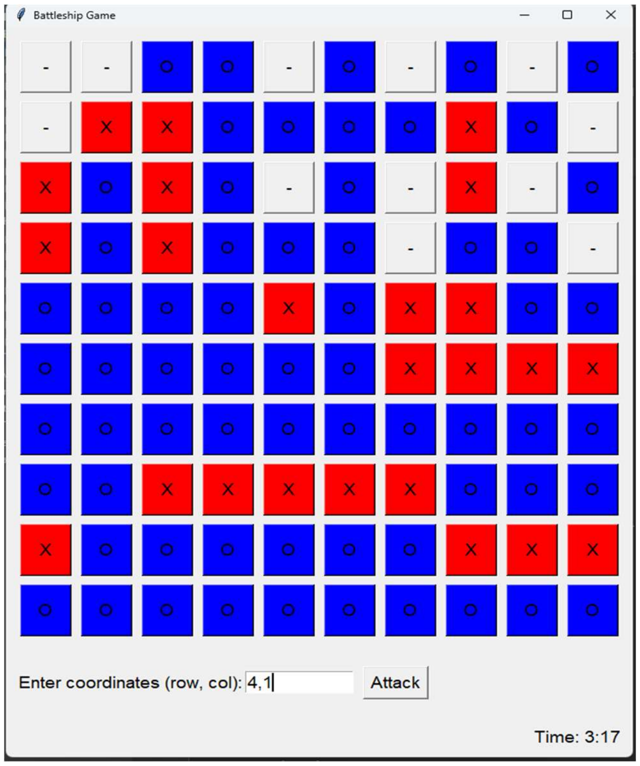


Enter coordinates (row, col):

Time: 0:06

- Description: Empty 10x10 board with '-' symbols, entry box for coordinates, and an "Attack" button. Timer starts.

2. Game in Progress



Battleship Game

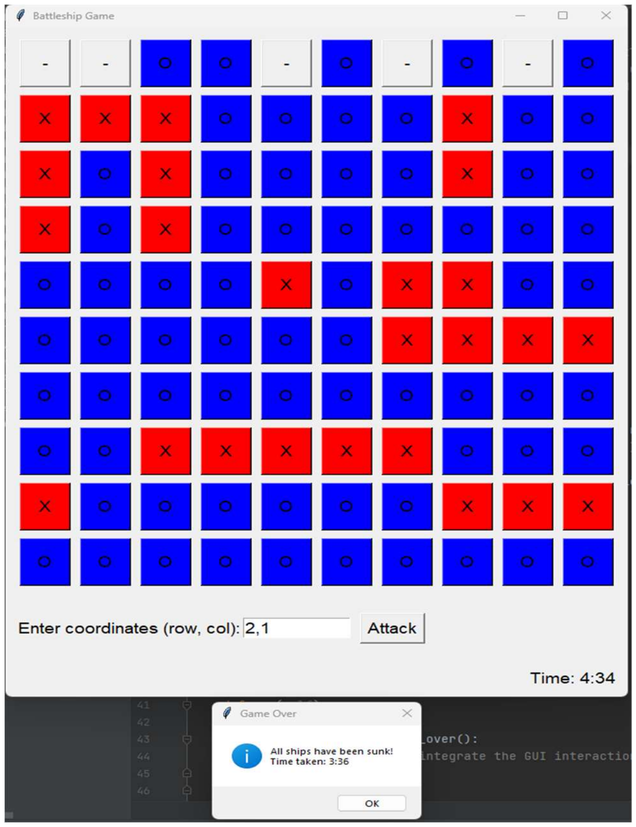
-	-	O	O	-	O	-	O	-	O
-	X	X	O	O	O	O	X	O	-
X	O	X	O	-	O	-	X	-	O
X	O	X	O	O	O	-	O	O	-
O	O	O	O	X	O	X	X	O	O
O	O	O	O	O	O	X	X	X	X
O	O	O	O	O	O	O	O	O	O
O	O	X	X	X	X	X	O	O	O
X	O	O	O	O	O	O	X	X	X
O	O	O	O	O	O	O	O	O	O

Enter coordinates (row, col): 4,1

Time: 3:17

• Description*:* Updated board showing hits ('X') and misses ('O'), with ongoing timer.

3. Game Ended



Battleship Game

-	-	O	O	-	O	-	O	-	O
X	X	X	O	O	O	O	X	O	O
X	O	X	O	O	O	O	X	O	O
X	O	X	O	O	O	O	O	O	O
O	O	O	O	X	O	X	X	O	O
O	O	O	O	O	O	X	X	X	X
O	O	O	O	O	O	O	O	O	O
O	O	X	X	X	X	X	O	O	O
X	O	O	O	O	O	O	X	X	X
O	O	O	O	O	O	O	O	O	O

Enter coordinates (row, col): 2,1

Time: 4:34

Game Over

All ships have been sunk!
Time taken: 3:36

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over():
integrate the GUI interactio
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• Description*:* Board displays all ship positions, game result message shown, and total game duration displayed+

Key Functions

BattleshipGame Class

1. setup(): Initializes the game by placing ships randomly on the board.
2. play_turn(coord): Handles a player's move, updates the board, and logs the move.
3. is_game_over(): Checks if all ships have been sunk, indicating the end of the game.

Logger Class

1. log_move(board, coord, result): Logs the details of each move, including the board state.
2. log_entry(entry): Records custom log entries, such as game start and end times.

BattleshipGUI Class

1. setup_board(): Creates and displays the board with interactive buttons.
2. attack(): Processes the player's attack based on the entered coordinates, updates the UI, and checks for game completion.
3. update_board(): Updates the visual representation of the board to reflect hits and misses.
4. handle_end_of_game(): Manages end-of-game procedures, including logging the game duration and displaying a completion message.