

OUTPUTS FOR BATTLESHIP GAME

*If the user starts the game, 10x10 grid is initialized with '-' characters representing empty cells.

- Four ships are randomly placed on the board:
 - One 4-cell ship
 - Two 3-cell ships
 - One 2-cell ship
- Ships are placed either horizontally or vertically without overlapping.
- The ship positions are saved to "ships.txt".

*If the user enters coordinates (e.g., 3 5), the game checks whether it is a hit or a miss.

- If the selected coordinate contains part of a ship, it is marked with 'X' and the user is notified of a hit.
- If the selected coordinate is empty, it is marked with 'O' and the user is notified of a miss.
- The game board is updated and displayed after each move.
- The move is logged in "battleship_log.txt".

*If all parts of a ship have been hit, the ship is considered sunk.

- A congratulatory message is displayed, such as: "Congratulations! You have sunk a 3-cell ship!"
- This message is displayed only once per ship.

*If the user enters 'X', the game immediately ends.

- No further inputs are accepted after exiting.
- The current state of the board and log file are preserved.

*If all ships are sunk, the game announces the victory.

- The total number of shots taken is displayed.
- The user is prompted: "Press N to start a new game or X to exit."

*If the user chooses to start a new game by pressing 'N', the game resets.

- The board is cleared.
- New ship positions are generated and saved.
- The previous log can be overwritten or continued.

```
busra-gizen-yilmaz@busra-gizen-VirtualBox: ~/Masaüstü$ ./230104004044
Welcome to Battleship Game!

 0 1 2 3 4 5 6 7 8 9
0 - - - - - 
1 - - - - - 
2 - - - - - 
3 - - - - - 
4 - - - - - 
5 - - - - - 
6 - - - - - 
7 - - - - - 
8 - - - - - 
9 - - - - - 
Enter coordinates (X to quit): 2 8
HIT!

 0 1 2 3 4 5 6 7 8 9
0 - - - - - 
1 - - - - - 
2 - - - - - X - 
3 - - - - - 
4 - - - - - 
5 - - - - - 
6 - - - - - 
7 - - - - - 
8 - - - - - 
9 - - - - - 
Enter coordinates (X to quit): 2 7
MISS!

 0 1 2 3 4 5 6 7 8 9
0 - - - - - 
1 - - - - - 
2 - - - - - O X - 
3 - - - - - 
4 - - - - - 
5 - - - - - 
6 - - - - - 
7 - - - - - 
8 - - - - - 
9 - - - - - 
Enter coordinates (X to quit): 2 0
```

```
Enter coordinates (X to quit): 3 8
HIT!
```

```
  0 1 2 3 4 5 6 7 8 9
0 - - - - -
1 - - - - -
2 - - - - - 0 X -
3 - - - - - X -
4 - - - - -
5 - - - - -
6 - - - - -
7 - - - - -
8 - - - - -
9 - - - - -
```

```
Enter coordinates (X to quit): 4 8
MISS!
```

```
  0 1 2 3 4 5 6 7 8 9
0 - - - - -
1 - - - - -
2 - - - - - 0 X -
3 - - - - - X -
4 - - - - - 0 -
5 - - - - -
6 - - - - -
7 - - - - -
8 - - - - -
9 - - - - -
```

```
Enter coordinates (X to quit): 1 8
HIT!
```

```
  0 1 2 3 4 5 6 7 8 9
0 - - - - -
1 - - - - - X -
2 - - - - - 0 X -
3 - - - - - X -
4 - - - - - 0 -
5 - - - - -
6 - - - - -
7 - - - - -
8 - - - - -
9 - - - - -
```

```
Enter coordinates (X to quit): 0 8
HIT!
```

Congratulations! You have sunk a 4-cell ship!

```
  0 1 2 3 4 5 6 7 8 9
0 - - - - - X -
1 - - - - - X -
2 - - - - - 0 X -
3 - - - - - X -
4 - - - - - 0 -
5 - - - - -
6 - - - - -
7 - - - - -
8 - - - - -
9 - - - - -
```

```
Enter coordinates (X to quit): 3 9
MISS!
```

```
  0 1 2 3 4 5 6 7 8 9
0 - - - - - X -
1 - - - - - X -
2 - - - - - 0 X -
3 - - - - - X 0
4 - - - - - 0 -
5 - - - - -
6 - - - - -
7 - - - - -
8 - - - - -
9 - - - - -
```

```
Enter coordinates (X to quit): 0 7
MISS!
```

```
  0 1 2 3 4 5 6 7 8 9
0 - - - - - 0 X -
1 - - - - - X -
2 - - - - - 0 X -
3 - - - - - X 0
4 - - - - - 0 -
5 - - - - -
6 - - - - -
7 - - - - -
8 - - - - -
9 - - - - -
```

```
Enter coordinates (X to quit): 0 7
MISS!
```

```
  0 1 2 3 4 5 6 7 8 9
0 - - - - - 0 X -
1 - - - - - X -
2 - - - - - 0 X -
3 - - - - - X 0
4 - - - - - 0 -
5 - - - - -
6 - - - - -
7 - - - - -
8 - - - - -
9 - - - - -
```

```
Enter coordinates (X to quit): 1 2
HIT!
```

```
  0 1 2 3 4 5 6 7 8 9
0 - - - - - 0 X -
1 - - X - - - X -
2 - - - - - 0 X -
3 - - - - - X 0
4 - - - - - 0 -
5 - - - - -
6 - - - - -
7 - - - - -
8 - - - - -
9 - - - - -
```

```
Enter coordinates (X to quit): 2 2
HIT!
```

```
  0 1 2 3 4 5 6 7 8 9
0 - - - - - 0 X -
1 - - X - - - X -
2 - - X - - - 0 X -
3 - - - - - X 0
4 - - - - - 0 -
5 - - - - -
6 - - - - -
7 - - - - -
8 - - - - -
9 - - - - -
```

```
Enter coordinates (X to quit): 3 2
HIT!
Congratulations! You have sunk a 3-cell ship!
```

```
 0 1 2 3 4 5 6 7 8 9
0 - - - - - 0 X -
1 - - X - - - - X -
2 - - X - - - 0 X -
3 - - X - - - - X 0
4 - - - - - 0 -
5 - - - - - - -
6 - - - - - - -
7 - - - - - - -
8 - - - - - - -
9 - - - - - - -
```

```
Enter coordinates (X to quit): 4 3
HIT!
```

```
 0 1 2 3 4 5 6 7 8 9
0 - - - - - 0 X -
1 - - X - - - - X -
2 - - X - - - 0 X -
3 - - X - - - - X 0
4 - - - X - - - 0 -
5 - - - - - - -
6 - - - - - - -
7 - - - - - - -
8 - - - - - - -
9 - - - - - - -
```

```
Enter coordinates (X to quit): 4 4
HIT!
```

```
 0 1 2 3 4 5 6 7 8 9
0 - - - - - 0 X -
1 - - X - - - - X -
2 - - X - - - 0 X -
3 - - X - - - - X 0
4 - - - X X - - 0 -
5 - - - - - - -
6 - - - - - - -
7 - - - - - - -
8 - - - - - - -
9 - - - - - - -
```

```
Enter coordinates (X to quit): 4 5
HIT!
```

```
Congratulations! You have sunk a 3-cell ship!
```

```
 0 1 2 3 4 5 6 7 8 9
0 - - - - - 0 X -
1 - - X - - - - X -
2 - - X - - - 0 X -
3 - - X - - - - X 0
4 - - - X X X - 0 -
5 - - - - - - -
6 - - - - - - -
7 - - - - - - -
8 - - - - - - -
9 - - - - - - -
```

```
Enter coordinates (X to quit): 0 1
HIT!
```

```
 0 1 2 3 4 5 6 7 8 9
0 - X - - - - 0 X -
1 - - X - - - - X -
2 - - X - - - 0 X -
3 - - X - - - - X 0
4 - - - X X X - 0 -
5 - - - - - - -
6 - - - - - - -
7 - - - - - - -
8 - - - - - - -
9 - - - - - - -
```

```
Enter coordinates (X to quit): 0 2
HIT!
```

```
Congratulations! You have sunk a 2-cell ship!
```

```
 0 1 2 3 4 5 6 7 8 9
0 - X X - - - 0 X -
1 - - X - - - - X -
2 - - X - - - 0 X -
3 - - X - - - - X 0
4 - - - X X X - 0 -
5 - - - - - - -
6 - - - - - - -
7 - - - - - - -
```

```
2 - - X - - - 0 X -
3 - - X - - - - X 0
4 - - - X X X - 0 -
5 - - - - - - -
6 - - - - - - -
7 - - - - - - -
8 - - - - - - -
9 - - - - - - -
```

```
Enter coordinates (X to quit): 0 1
HIT!
```

```
 0 1 2 3 4 5 6 7 8 9
0 - X - - - - 0 X -
1 - - X - - - - X -
2 - - X - - - 0 X -
3 - - X - - - - X 0
4 - - - X X X - 0 -
5 - - - - - - -
6 - - - - - - -
7 - - - - - - -
8 - - - - - - -
9 - - - - - - -
```

```
Enter coordinates (X to quit): 0 2
HIT!
```

```
Congratulations! You have sunk a 2-cell ship!
```

```
 0 1 2 3 4 5 6 7 8 9
0 - X X - - - 0 X -
1 - - X - - - - X -
2 - - X - - - 0 X -
3 - - X - - - - X 0
4 - - - X X X - 0 -
5 - - - - - - -
6 - - - - - - -
7 - - - - - - -
8 - - - - - - -
9 - - - - - - -
```

```
All ships are sunk! Total shots: 16
```

```
Press 'N' to play again or 'X' to exit: X
```

```
busra-gizen-yilmaz@busra-gizen-VirtualBox: ~/Masaüstü$
```

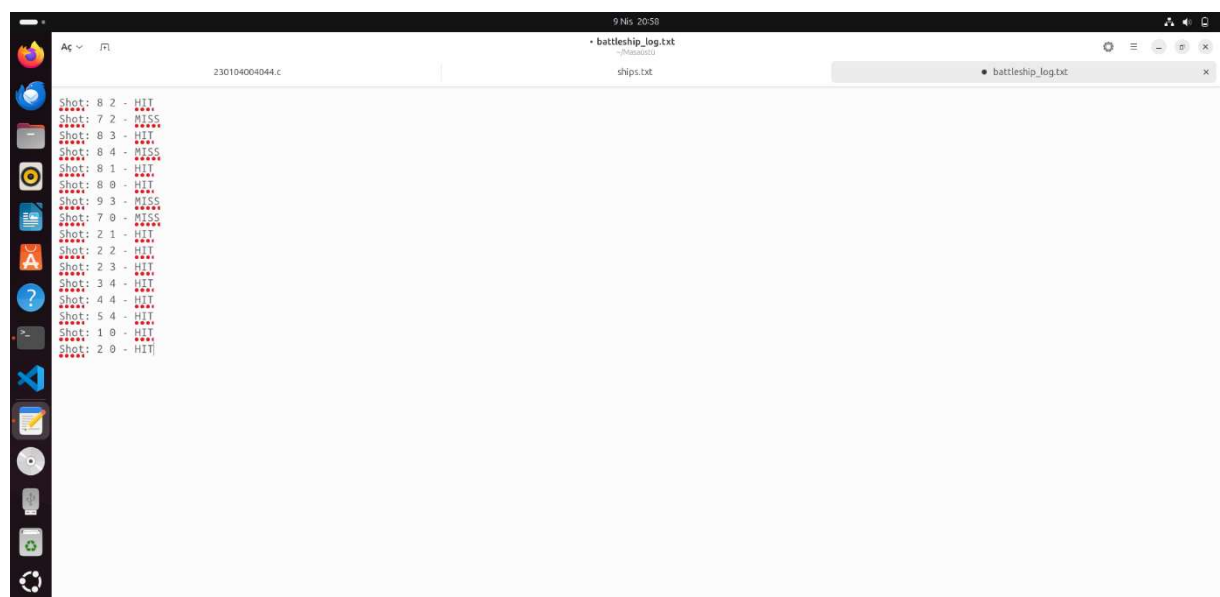
```

All ships are sunk! Total shots: 13
Press 'N' to play again or 'X' to exit: N
Welcome to Battleship Game!

  0 1 2 3 4 5 6 7 8 9
0 - - - - -
1 - - - - -
2 - - - - -
3 - - - - -
4 - - - - -
5 - - - - -
6 - - - - -
7 - - - - -
8 - - - - -
9 - - - - -
Enter coordinates (X to quit): 1 2
HIT!

  0 1 2 3 4 5 6 7 8 9
0 - - - - -
1 - X - - - - -
2 - - - - -
3 - - - - -
4 - - - - -
5 - - - - -
6 - - - - -
7 - - - - -
8 - - - - -
9 - - - - -
Enter coordinates (X to quit): X
Exiting the game.
busra-gizen-yilmaz@busra-gizen-yilmaz-VirtualBox: ~/Masadeti$

```



SOME ERRORS ABOUT BATTLESHIP GAME

*If the user enters non-numeric input (e.g., letters or symbols), an error message is displayed and new input is requested.

- For example, if the user enters a, b, ., or # %, the program will output: "Invalid input! Please enter two numbers separated by space (0-9)."

*If the user enters coordinates outside the valid range (0–9), an error message is displayed and new input is requested.

- For example, if the user enters 1 10 or -1 3, the program will output: "Invalid coordinates! Please enter values between 0 and 9."

*The program continues to prompt the user until valid coordinates are entered.

- Input is only accepted when both values are integers between 0 and 9.

```
busra-gizen-yilmaz@busra-gizen-yilmaz-VirtualBox: ~/Masadati$ ./238184884844
Welcome to Battleship Game!

  0 1 2 3 4 5 6 7 8 9
0 - - - - -
1 - - - - -
2 - - - - -
3 - - - - -
4 - - - - -
5 - - - - -
6 - - - - -
7 - - - - -
8 - - - - -
9 - - - - -
Enter coordinates (X to quit): 1 3
MISS!

  0 1 2 3 4 5 6 7 8 9
0 - - - - -
1 - - 0 - - - -
2 - - - - -
3 - - - - -
4 - - - - -
5 - - - - -
6 - - - - -
7 - - - - -
8 - - - - -
9 - - - - -
Enter coordinates (X to quit): a
Invalid input. Please enter two numbers separated by space (0-9).

Enter coordinates (X to quit): b
Invalid input. Please enter two numbers separated by space (0-9).

Enter coordinates (X to quit): 1 10
Invalid coordinates! Please enter values between 0 and 9.

Enter coordinates (X to quit): -1 3
Invalid coordinates! Please enter values between 0 and 9.

Enter coordinates (X to quit): 2 3

Enter coordinates (X to quit): -1 3
Invalid coordinates! Please enter values between 0 and 9.

Enter coordinates (X to quit): 2 3
MISS!

  0 1 2 3 4 5 6 7 8 9
0 - - - - -
1 - - 0 - - - -
2 - - 0 - - - -
3 - - - - -
4 - - - - -
5 - - - - -
6 - - - - -
7 - - - - -
8 - - - - -
9 - - - - -
Enter coordinates (X to quit):
```