(Advance Programming Practices)
SOEN-6441
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BattleShip Game

Presented To -

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Problem Statement

- Building a super duper Battleship Board game using java as a programming language.

- There will be two players.
  1. Computer
  2. User

- Goal- To sink opponent's all the Ships .

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# Technical Specifications

1.

Screenshots of Game

Game Detail

- The game grid is divided into two grids :
  - Radar Grid:
    - This grid keeps a track of opponent's grid hits and misses.
    - Here we mark the grid position we want to hit for the opponent.
    - According to the marked position the we the opponent will confirm a hit or miss and then it will be updated in the same way as Red or White.

  - Ship Grid :
    - All 5 ships are placed on the ship grid by the user.
    - After the user turn is over AI(Computer) hits the tries to sink the ships on user grid.
    - If it's a hit from the Computer side then the color of the ship cell is changed to red
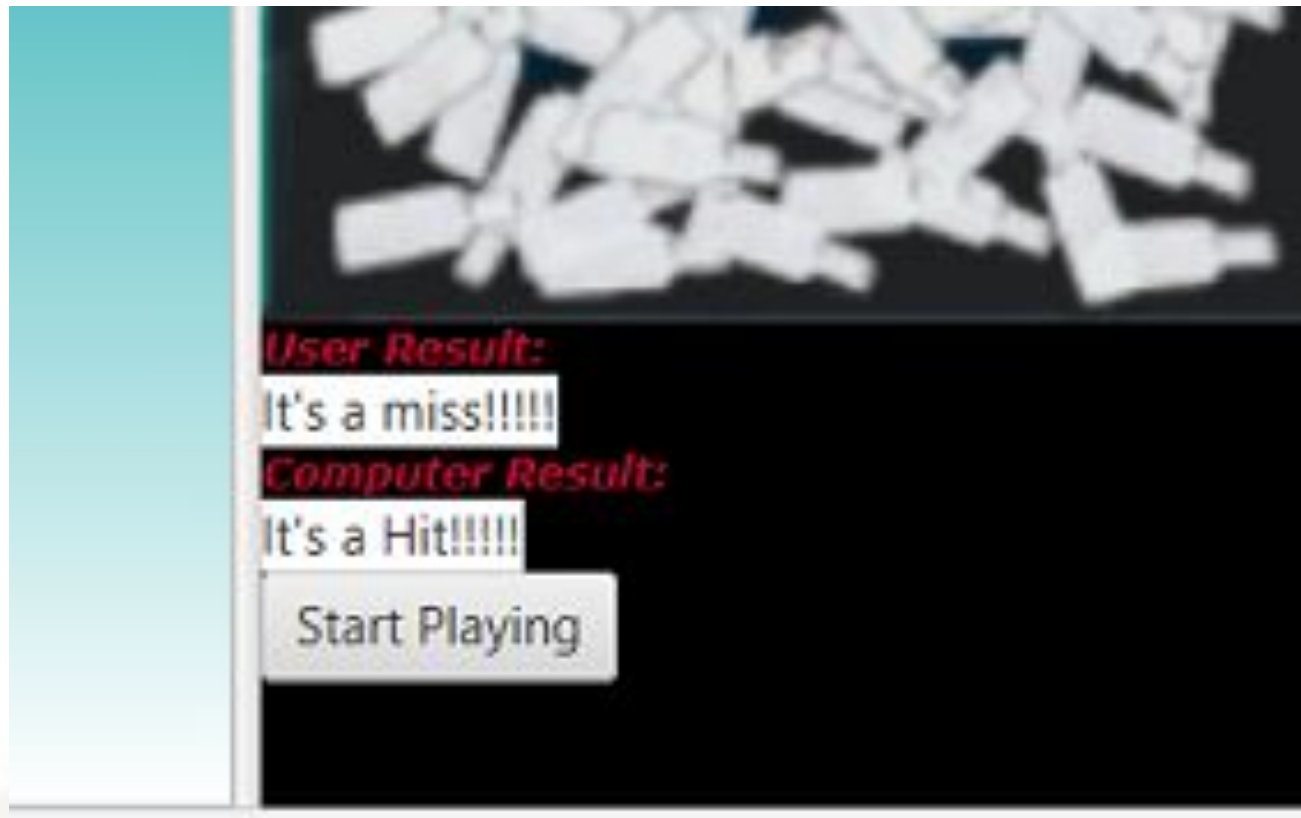
- Before start playing battleship game between computer and user. All the ships needs to be placed correctly on the Ship Grid.
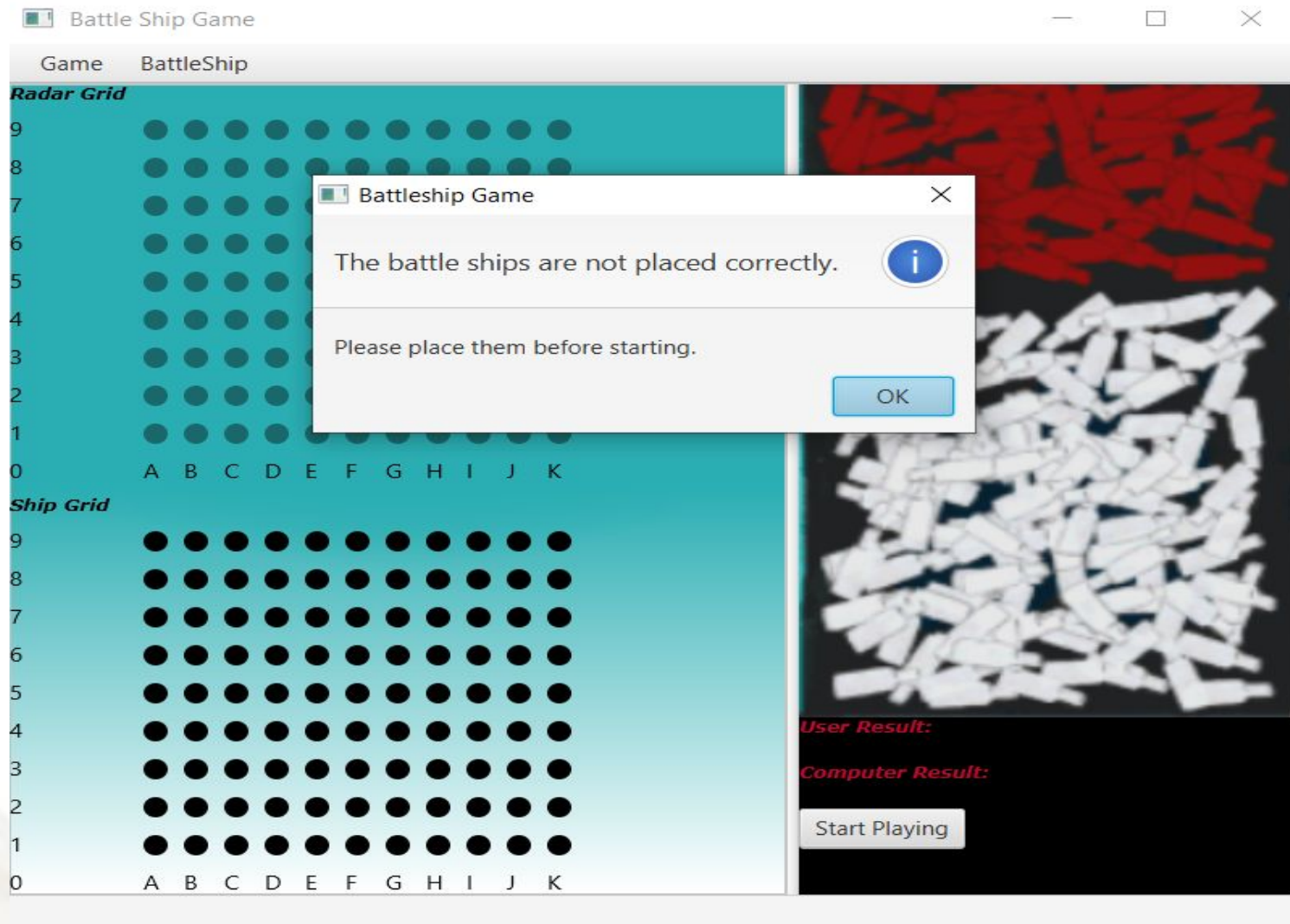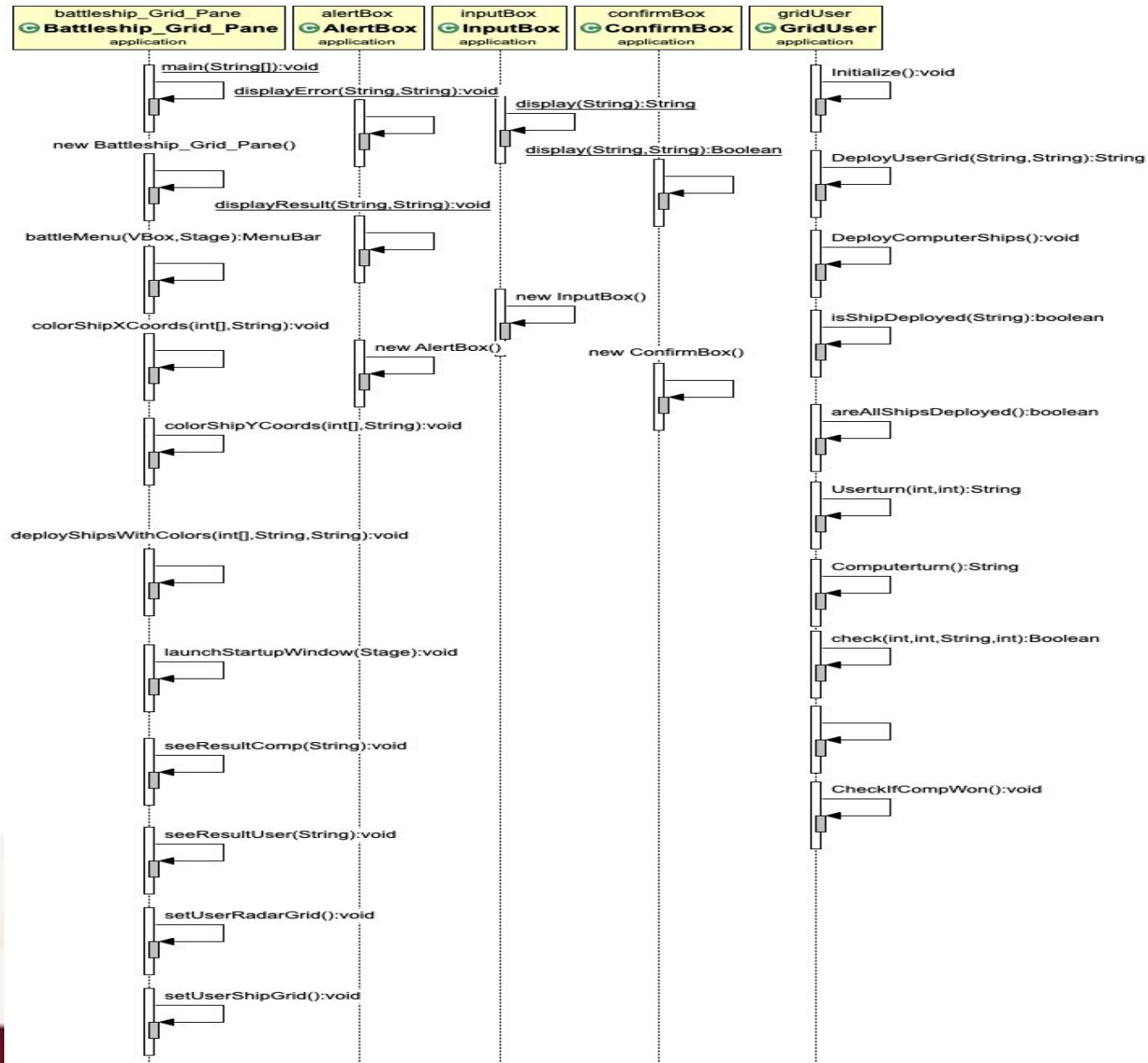
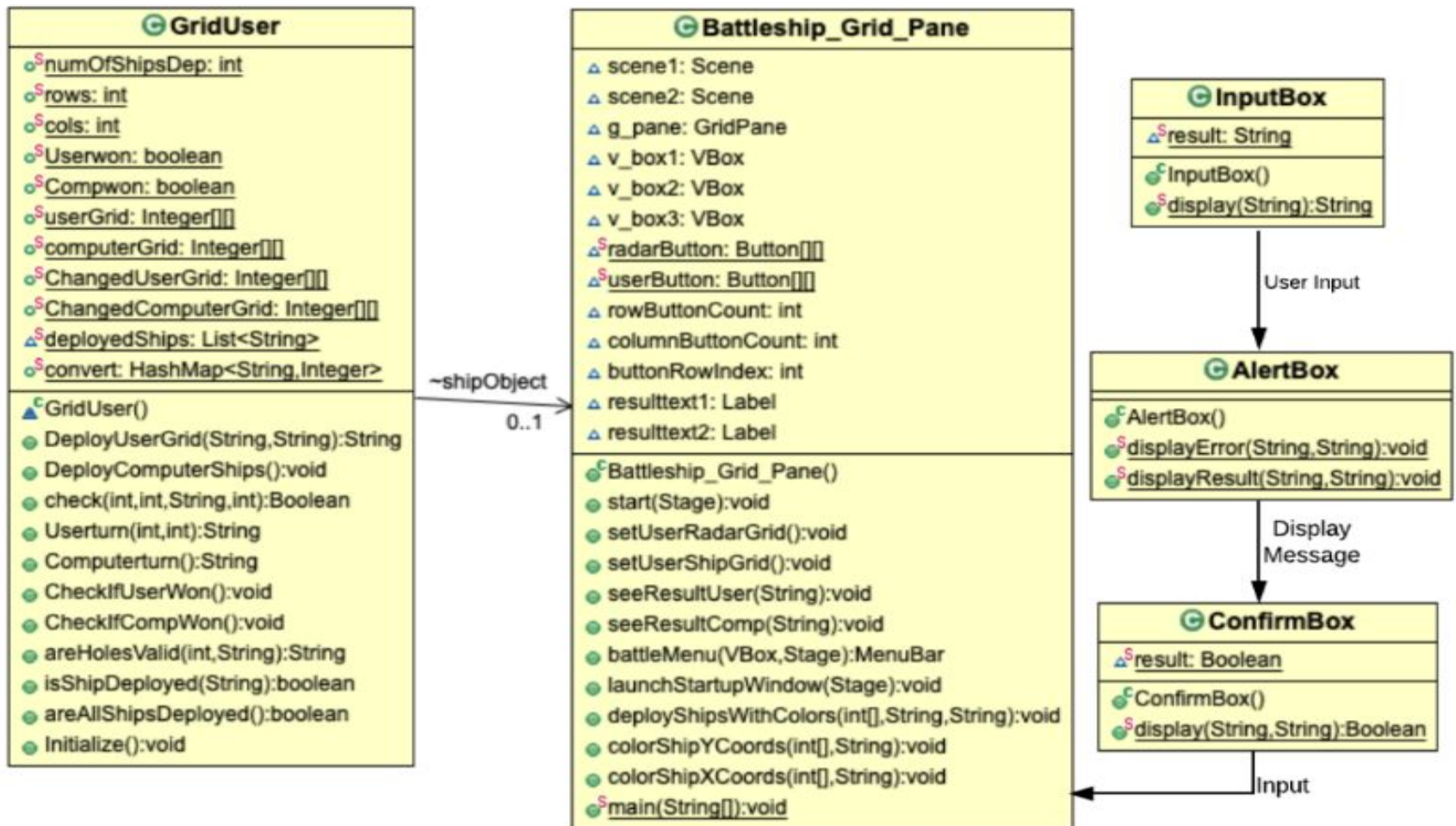- Computer and user are playing game. Red colour is showing hit whereas White colour is showing miss.
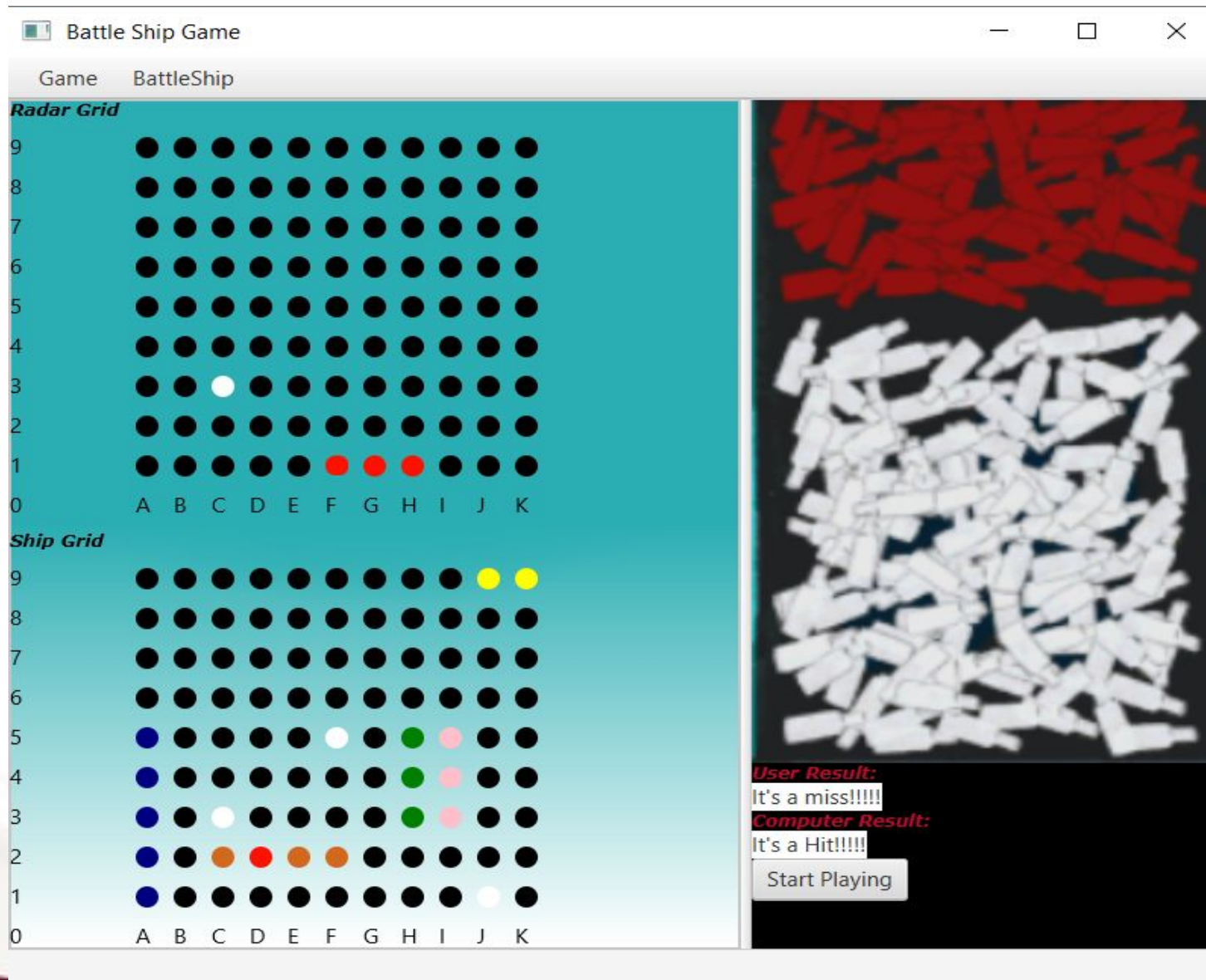
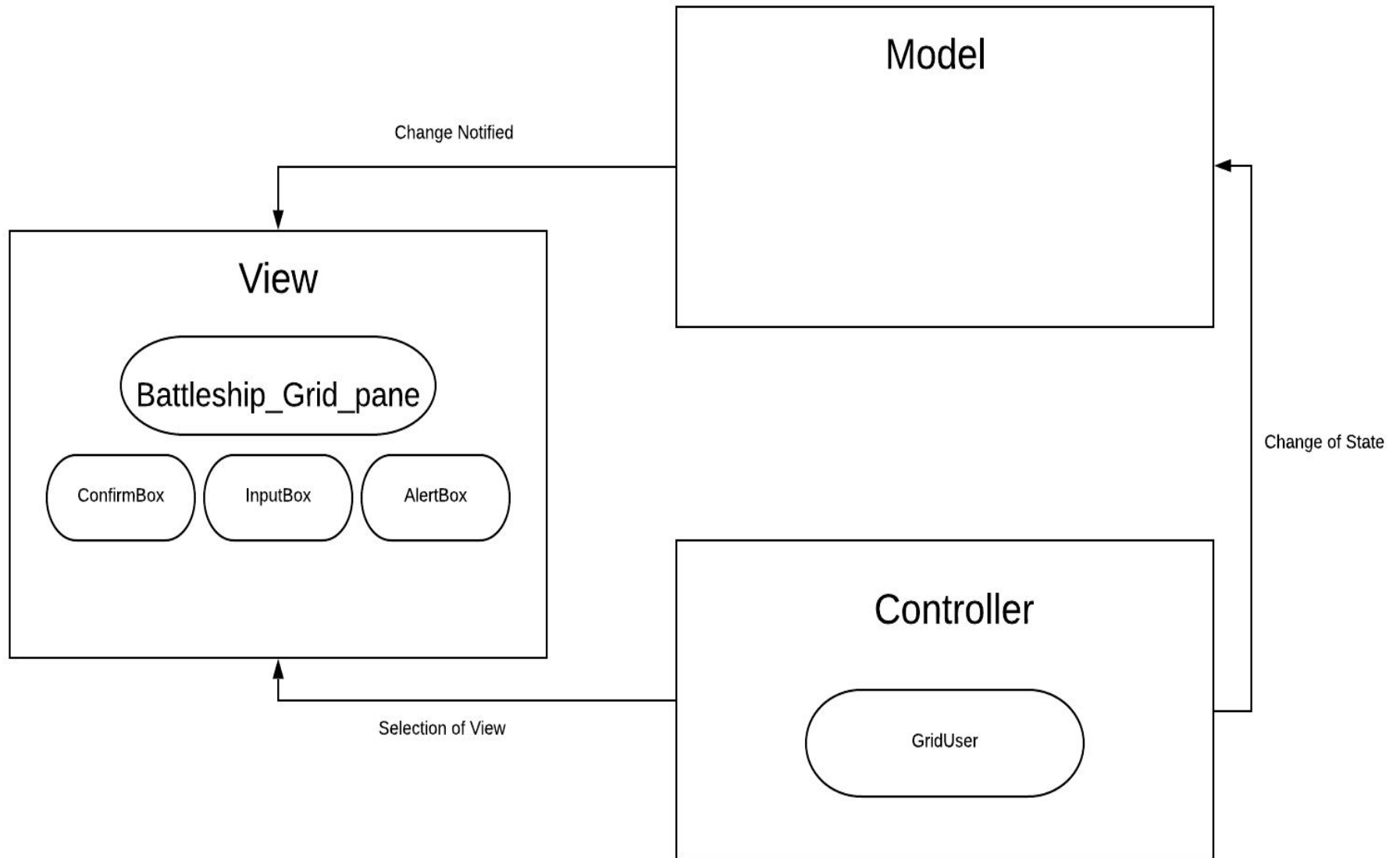- User's and Computer's Hits and Misses will be displayed as below.

MVC

MVC architecture separates the application into three segments(Model, View, Controller)

GridUser : It contains the grid locations for User and Computer Ship deployment. Shows the User Deployed

InputBox : It contains the User Input data and Displays it. AlertBox : It displays all the prompts and results.

ConfirmBox : It is using Boolean operations to confirm user input by a visual **prompt. Battleship_Grip_Pane** : It processes the Input given and marks the operations to be performed including registering hit or miss on the grid by changing the color of the grid location as per the desired action(red for hit, white for miss).

MVC

Model

Change Notified

View

Battleship_Grid_pane

ConfirmBox   InputBox   AlertBox

Change of State

Controller

GridUser

Selection of View

Coding Conventions

Coding Conventions are the defined set of rules that tells how code is to be written. we used following coding conventions in our project.

1. Naming

Type	Notation Followed
Class Name	UpperCamelCase
Method Name	LowerCamelCase
Constant Name	Constant_Case
Parameter Name	lowerCamelCase
Package Name	all Lowercase

2. Indentation

1. Should be properly indented with 1 tab.

2. The opening curly brace should be in the same line as function or class name.

3. Declarations

1. All variables need to be declared on top of the class before any function definitions.

2. Private and public variables / functions should be grouped together.

4. Comments

1. Add comments before all the code blocks (class, function, variables)

2. No unwanted commented code should be present

3. Javadoc comments should include all the parameter and return type if there are any.

Challenges Experienced

The main challenges faced during build:

- Time Management
- Scope of the project
- Team Meetings
- Technical issues came while solving errors

References:

REFERENCES:

1. https://www.thesprucecrafts.com/the-basic-rules-of-battleship-411069
2. https://www.lucidchart.com
3. https://docs.google.com

THANK YOU