Advanced Programming Practices(SOEN 6441)

Summer-2019

Project- Build1
BattleShip Game
Architectural Design

Submitted By: Team - 1

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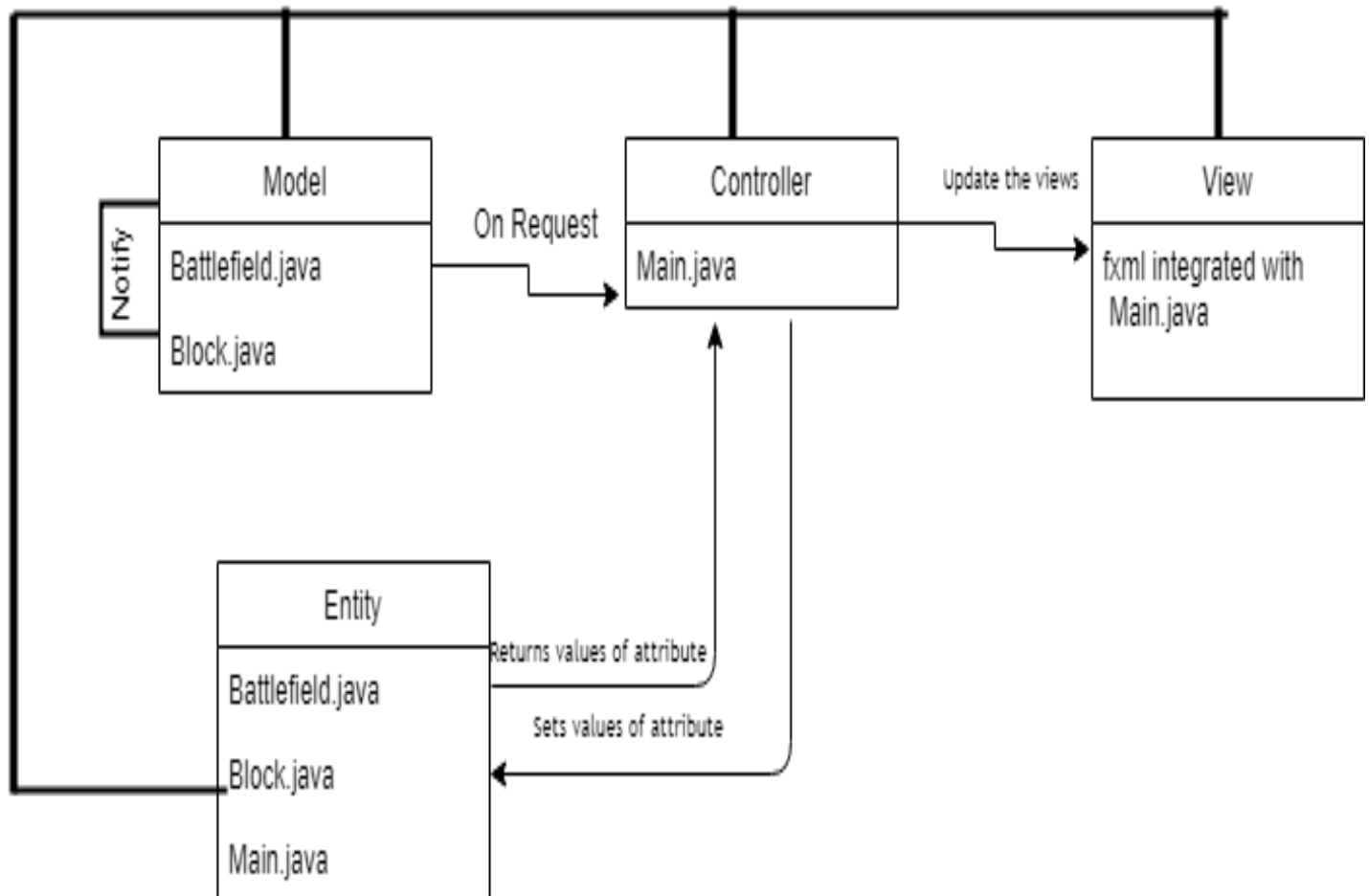## Submitted To :
Nagi Basha

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Introduction

Develop a Battleship game using Model View Controller (MVC) software design architecture with iterative development to deliver working modules in small builds. It was an effort to use extreme programming key features such as Coding Standards and many more.

1.Scope

The scope of the build 1 is as per the instruction guidelines for the build:

- Ship Placement :
    - Placement of ships
    - constrains on placement of ships

- Game Play:
    - Switching turns
    - Verification of invalid moves or repeated moves
    - AI engine
    - Announcement of the winner

2.Architecture Design

Model		Controller		View
Battlefield.java	On Request	Main.java	Update the views	fxml integrated with Main.java
Block.java				

Notify

Entity
Battlefield.java
Block.java
Main.java

Returns values of attribute

Sets values of attribute

3.Modules Description

3.1. Controllers

File Name	Description
Main.java	It is a mediator between the Battlefield and block class and fxml file integrated with main.java . It captures all the action like placing the ships on the cell, Setting up opponent board and also initialization of the game.

3.2 *Model*

File Name	Description
Battlefield.java	This class Manage all actions done on battlefields of both the players. Ship placing on both battlefields with validations. Manage all hits done by both the players. Displaying all informative messages.
Block.java	This Class create a block and fills color for the battlefield.

3.3 Entity

File Name	Description
Main.java	It contains calls for starting of the game and shows the Stage.
Battlefield.java	It is used to create objects for each block in both the grids and setting the ships on the board .
Block.java	It creates the block with the help of x and y co-ordinate of the board.

3.4 Main

File Name	Description
Main.java	Entry point for the application

4.Tools and API

Tools	Description
Eclipse	IDE for the game development
Scene Builder	It is an open source JavaFX system used for UI design and gives a skeleton of the events to be implemented in controller.
JavaFx	Library to control the UI component
Source Tree	It is Git code management System which gives one place to plan projects, collaborate on code, test and deploy.

5. References

1. https://battleship-game.org/en/

2. https://www.draw.io/#G1vXTzxWyTjRE3HVIWdLcsfn2PizpjQNFA

3. https://www.thesprucecrafts.com/the-basic-rules-of-battleship-411069

4. https://stackoverflow.com/questions/10872444/mvc-pattern-in-javafx-with-scene-builder