



Risk Game (Build-1)

Architectural Design

Advanced Programming Practices

SOEN 6441
Fall-2019

Team: Group_U_J

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Introduction

Developed an operational version demonstrating a subset of the capacity of Risk game. It was an effort to implement several extreme programming key features such as Collective ownership, Coding Standards, JavaDoc, Unit Testing and many more.

1. SCOPE

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

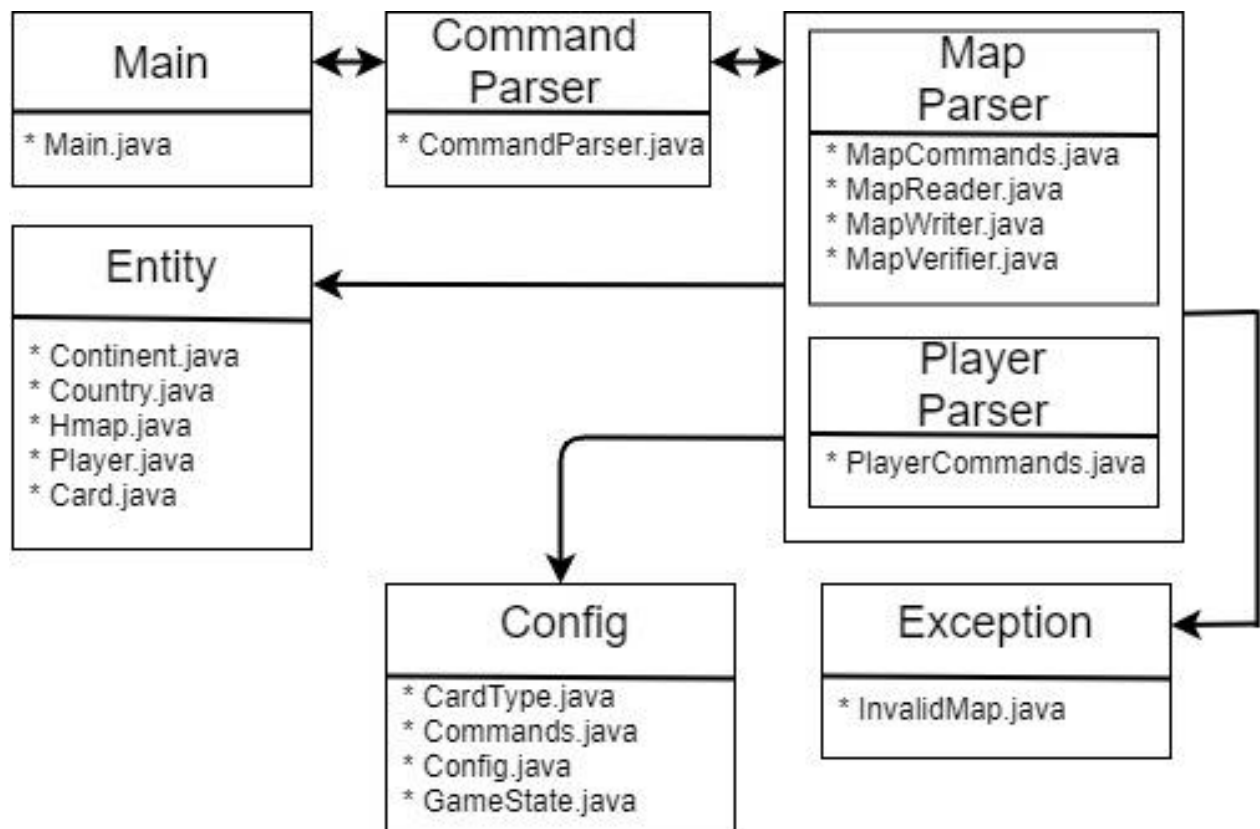
1.1 MAP EDITOR:

- Create a new map file
- Edit an existing map file
- Add/Update/Delete Continent, Country and Adjacent Country
- Make sure that the integrity of the connected graph is maintained.

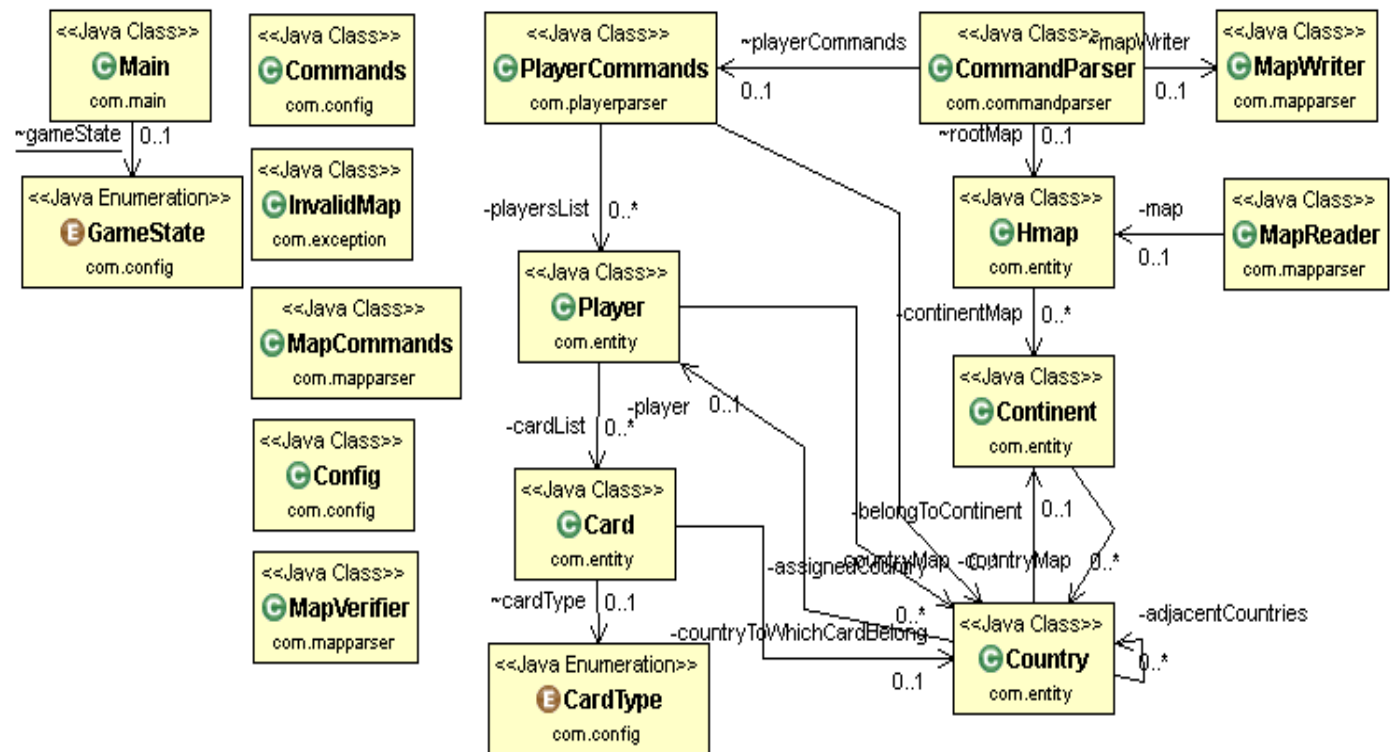
1.2 GAME PLAY:

- Assigning country to player
- Player can assign armies to each country in round robin manner
- With proper calculation of armies, Reinforcement phase is implemented
- With a valid fortification move, Fortification phase is implemented

2. Architecture Design



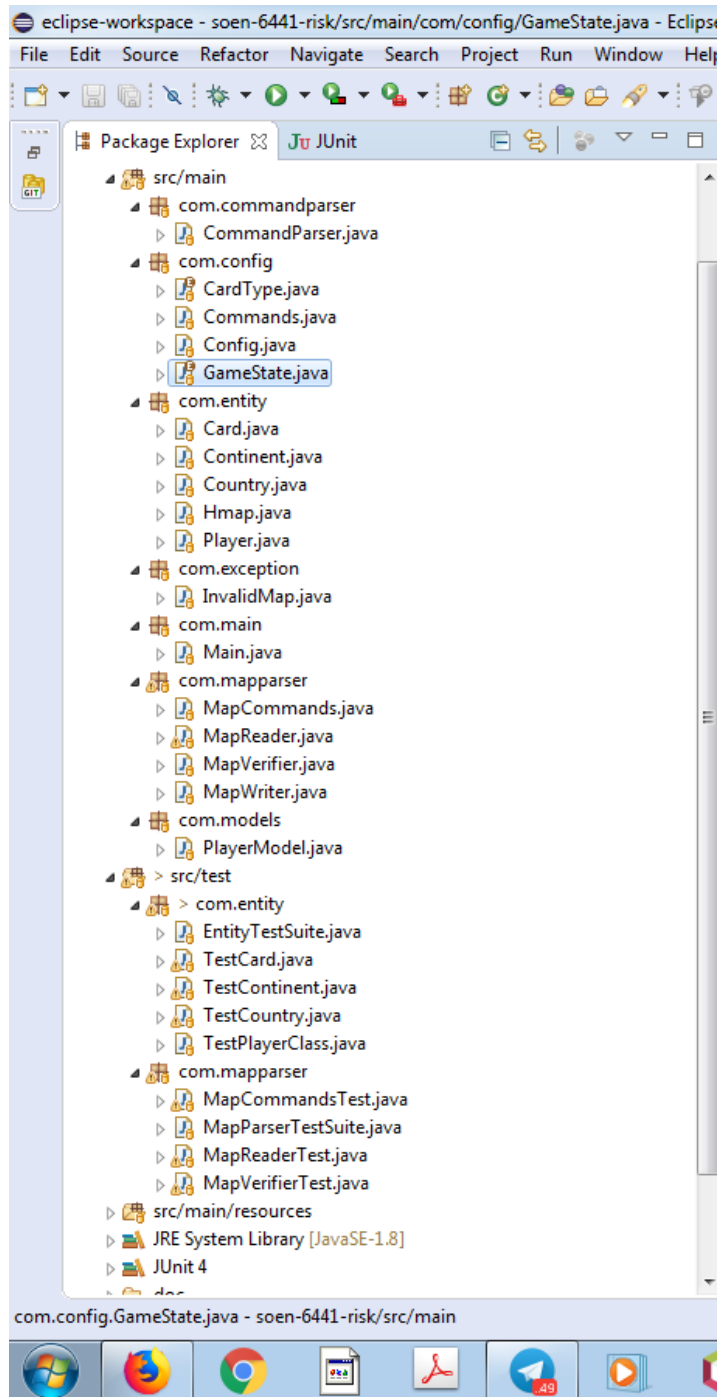
3. UML DIAGRAM



4. Modules Description

Detailed Structure and Explanation

The overview of project packages is as shown in Screenshot 1.



4.1. Config

| File_name | Description |
|-----------------------|--|
| CardType.java | It is a class for cardtype configuration. |
| Commands.java | It is a class for Command configuration. |
| Config.java | It is a class for army configuration . |
| GameState.java | It is a class for GameState configuration. . |

4.2. Entity

| File_name | Description |
|-----------------------|--|
| <i>Hmap.java</i> | It contains all the information of the Map and a list of the continents. |
| <i>Card.java</i> | It contains all the information regarding to Card. |
| <i>Continent.java</i> | It contains all the information of the continent and a list of all the countries that belong to a continent. |
| <i>Country.java</i> | It contains the information of the country like name, a reference to which continent the country belongs, list of all the adjacent country, count of armies currently residing on the country. |
| <i>Player.java</i> | It contains all information related to a player and the number of armies assigned to the player. |

4.3. Mapper

| File_name | Description |
|-------------------------|--|
| MapCommand.java | Contains all the common method of the map like: saving map |
| MapReader.java | It reads the map file format and parsing in to Map object and checks for the validity of data of the map file. |
| MapWriter.java | It is responsible for writing the Map object to the file. |
| MapVerifier.java | object, opening a dialogue box etc. |

4.4 Main

| File_name | Description |
|------------------|---------------------------------|
| Main.java | Entry point for the application |

5. Test Cases (Junit) Description

5.1 Main Test

| File_name | Description |
|---------------------------|--|
| MainTestSuite.java | This is a test class for running all test suits. (MapUtilitiesTestSuite.class, GameUtilitiesTestSuite.class, ModelsTestSuite.class, StrategyTestSuite.class) |

5.2 Entity Test

| File_name | Description |
|-----------------------------|---|
| TestCard.java | This is a test for card class. |
| TestContinet.java | This is a test for continent class. |
| TestCountry.java | This is a test for country class. |
| TestPlayer.java | This is a test for player class. |
| EntityTestSuite.java | This is a test class for running all test suits in Entity i.e. (TestCard.class, TestContinent.class, TestCountry.class, TestPlayerClass.class) |

5.3 Mapper Test

| File_name | Description |
|---------------------------|---|
| MapcommadTest.java | This is a test class for Map operations |
| Mapreader.java | This is a test class for Map-reader. |
| Mapwriter.java | This is a test class for Map writer. |
| Mapverifier.java | This is a test class for Map verifier. |

| | |
|----------------------|--|
| EntityTestSuite.java | This is a test class for running all test suits in Mapparser i.e. (MapcommadTest.class, MapreaderTest.class, MapwriterTest.class, MapverifierTest.class) |
|----------------------|--|

6. Tools and API

| <i>Tools</i> | <i>Description</i> |
|---------------------|---|
| Eclipse | IDE for the game development |
| Git | It is Git code management System which gives one place to plan projects, collaborate on code test and deploy. |
| Junit4 | For writing test class |
| JavaDoc | JavaDoc is a automation tool to generate document to refer regarding libraries and modules of code. |

7. References:

- Rules Followed: <https://www.wikihow.com/Play-Risk>
- <https://sourcemaking.com/refactoring/refactorings>
- <https://www.sourcetreeapp.com>