

Software Architecture Document

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Team no. 17

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10/19/2017	1.0	Made Software Architecture document for the Risk Game.	Sohrab Singh Chawla	

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1. Architectural Representation

Use Case view

Audience: Risk game stakeholders

Area: describes the set of scenarios and/or use cases that are critical to the architecture

Related Artifacts: Use Case Diagram

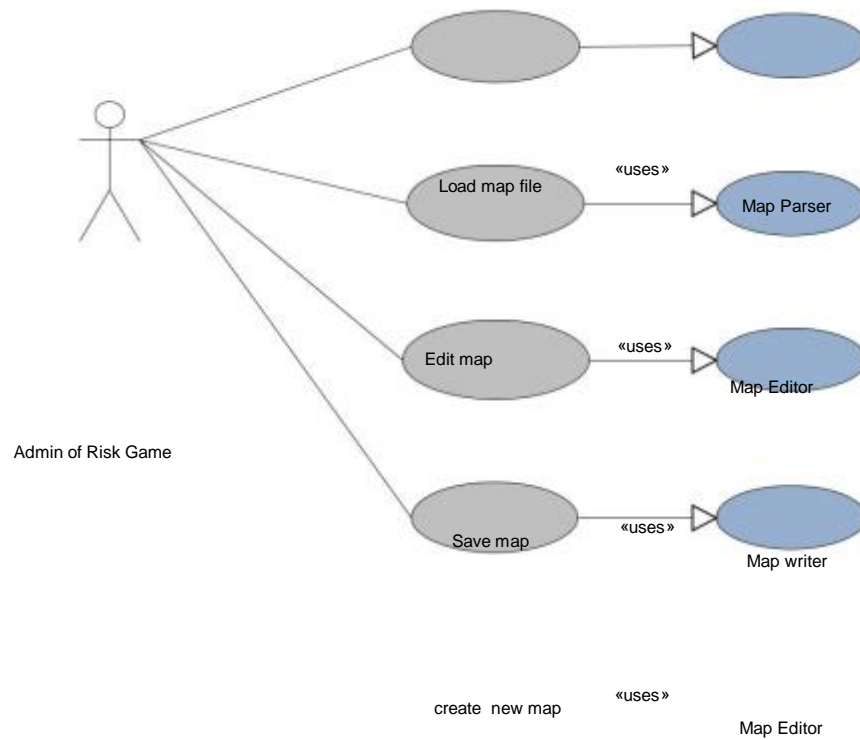
Implementation view

Audience: Risk game designers and programmers

Area: Functional Requirements, to assess functionality

Related Artifacts: Architectural diagram

1.1. Use-Case View

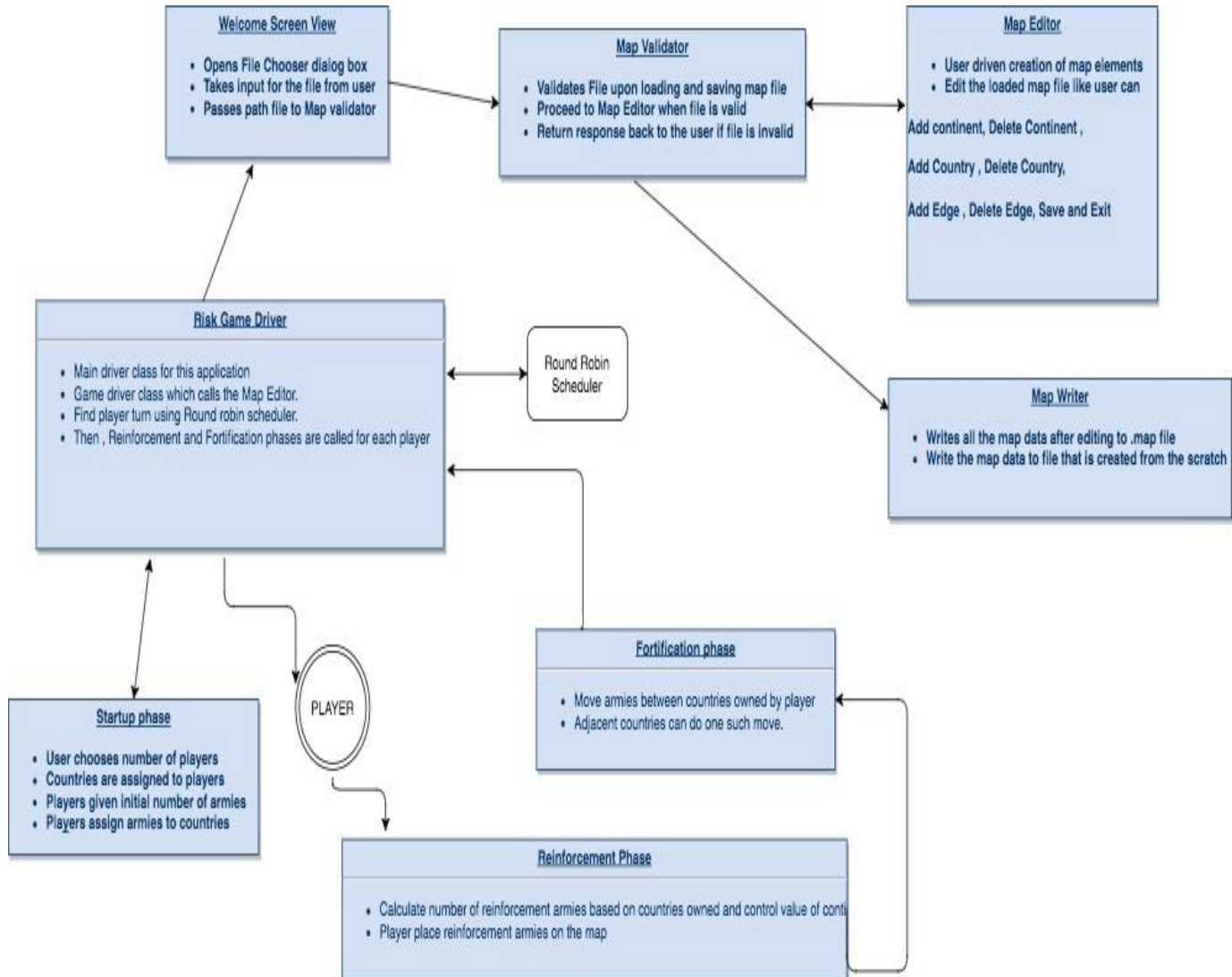


The following are the set of use cases that are architecturally significant to system:

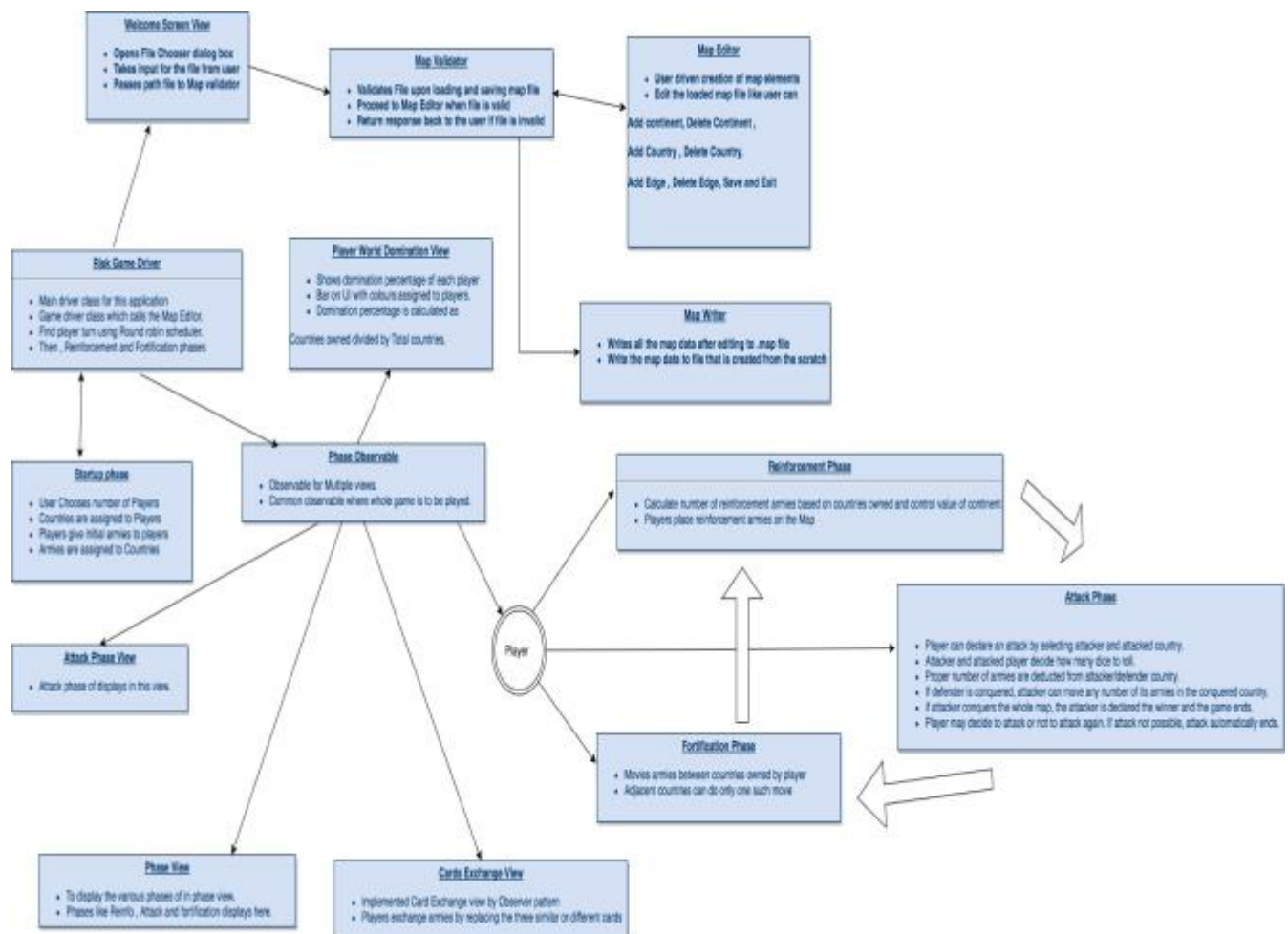
Admin Use Cases

- Load Map File
- Edit Map
- Save Map to File
- Create a new Map

1.2 Build 1 Implementation View



1.3 Build 2 Implementation View



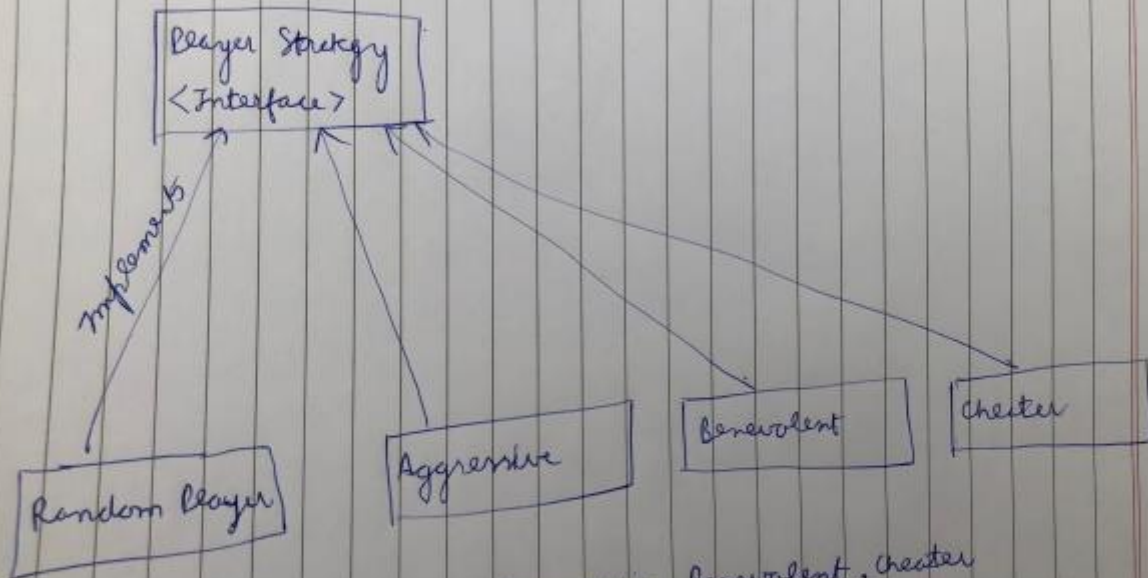
```

classDiagram
    class WelcomeScreenView
    class MapRenderer
    class MapEditor
    class MapValidator
    class MapWriter
    class Console
    class RiskGameDriver
    class StartupPhase
    class AttackPhaseView
    class GamePhaseView
    class RiskGamePhase
    class Player
    class ReinforcementPhase
    class AttackPhase
    class FortificationPhase
    class PlayerDominationView
    class CardExchangeView

    WelcomeScreenView --> MapRenderer : open Existing
    WelcomeScreenView --> MapEditor : Create New
    MapRenderer --> MapValidator
    MapEditor --> MapValidator
    MapValidator --> MapWriter
    MapValidator --> Console : Not Valid
    RiskGameDriver --> WelcomeScreenView
    RiskGameDriver --> StartupPhase
    StartupPhase --> AttackPhaseView
    AttackPhaseView --> GamePhaseView
    GamePhaseView --> RiskGamePhase
    RiskGamePhase --> PlayerDominationView
    RiskGamePhase --> CardExchangeView
    RiskGamePhase --> Player
    Player --> ReinforcementPhase : Reinforce()
    Player --> AttackPhase : Attack()
    Player --> FortificationPhase : Fortification()
    ReinforcementPhase --> AttackPhase
    AttackPhase --> FortificationPhase
    FortificationPhase --> ReinforcementPhase
    
```

The diagram illustrates the architecture of a Risk Game system. It features a central **Risk Game Driver** that interacts with the **Welcome Screen View** and the **Startup Phase**. The **Welcome Screen View** manages map creation (via **Map Editor**) and opening existing maps (via **Map Renderer**). Both lead to the **Map Validator**, which then feeds into the **Map Writer** or provides feedback to the **Console** if not valid. The **Startup Phase** leads to the **Attack Phase View**, which then leads to the **Game Phase View**. The **Game Phase View** leads to the **Risk Game Phase**, which in turn leads to **Player Domination View** and **Card Exchange View**. The **Risk Game Phase** is also associated with a **Player** object. The **Player** object can perform actions like **Reinforce()**, **Attack()**, and **Fortification()**, leading to the **Reinforcement Phase**, **Attack Phase**, and **Fortification Phase** respectively. These phases are interconnected in a cycle: **Reinforcement Phase** leads to **Attack Phase**, **Attack Phase** leads to **Fortification Phase**, and **Fortification Phase** leads back to **Reinforcement Phase**. A **Gameable** interface is also shown, associated with the **Risk Game Phase**.

Tournament Mode



P: Random, Aggressive, Benevolent, chester
G: Game 1, Game 2, Game 3
M: Map 1, Map 2
D: 30

2. Packaging Structure

The following files directory structure describes the details of the hierarchy used to organize the java source files, class files, web pages.

Main Package	Comments
com.game.risk	Root
com.game.risk.core	Core classes like where all the logic resides like CountriesGraph ,MapReader , MapWriter
com.game.risk.util	Utility Classes that are to be used in Reinforcement, Fortification phase resides here
com.game.risk.model	Model classes like Country, Continent comes in this package
com.game.risk.view	View classes resides in this package.