# REQUIREMENT DOCUMENT

D-RISK

TEAM INFERNO
ABHINAV MISHRA
ADITYA TOGANI
ARPIT MATHUR
NIKHIL KUMAR
VIMARSH DEO

# Table of Contents

# 1. Introduction

## 1.1 Purpose

Risk is a turn-based board game, in which 2 to 6 players fight over the occupation of 42 territories in a political map, trying to achieve a secret mission that generally requires the control of the territories in the map.

The goal of this project is to develop a turn based client server Risk game, in which users play the game through a web site, and that offers high configurability, in particular: it allows users to define and upload map configurations, including not only the aesthetic aspects such as images, etc., but also specific numbers of territories and neighboring relations (and optionally stronger restrictions on the number of players); it allows for maps to automatically adjust granularity, by collapsing neighboring territories according to number of players and a user selected complexity for the game (e.g., easy, medium, hard).

## 1.2 Purpose and Scope of this specification

The purpose of this specification is to outline the requirements of D-Risk game. Moreover, this document explains the purpose of each of the individual functionalities that will be provided to the user. This document intended audience includes the developers of this web based game, as well as the interested users who will play this game.

# 2. Overall Description

## 2.1 Product Context

This game is just like other multiplayer games where two or more user can join together and start playing the game. This game is independent of any other products. All a user needs is client browser viz. chrome, Mozilla to connect to website and follow the instructions to join the game.

## 2.2 Product Functions

The main aim of this project is to implement all the core functionalities of the board version of the game Risk. This section of the SRS contains a brief introduction about all the major functions implemented with respect to the user's perspective.

When a user opens up the game main page, he will be presented with these major features:

- Log In – The already existing users can directly enter the game by providing the login details
- Sign up – The first time users should first signup using the link provided on the homepage and then login to start the game.
- Game Instructions – This link provides all the rules that a user must follow to play the game.

Once a user is in the game, he will have 3 major phases presented in form of button which controls all the phases of the game (A detail version of the rules and strategies is presented in the Game Instructions link of the home page):

- Deploy – When a user clicks this button he can start deploying the army in his owned territories
- Attack/Transfer – When a user clicks this button he can start transferring his armies to either his owned territories or to an enemy territory.
- Commit – When a user clicks this phase all the moves are executed and the turn is passes to the next player.

The detailed project requirement and description can be found at the official SCORE project website (http://score-contest.org/2016/projects/drisk.php)

## 2.3 User Classes and Characteristics

The users of this game are expected to have a compatible browser viz. Chrome, Firefox or IE and a good enough internet connection. All the interested game playing users, who have a little idea about any strategy game can user this product.

## 2.4 Operating Environment

This product is Operating system independent and will work with virtually any system that can connect to the internet and browse web pages.

## 2.5 Design and Implementation Constraints

The development code is written in java-script and html (front end). The server side coding is done using node JS.

## 2.6 Assumptions and Dependencies

It is assumed that the user is familiar with some if the strategies game and also have some idea of probability which will be used in the attack strategies.

# 3. Requirements

## 3.1 Functional Requirements

| Requirement ID | Requirement Definition |
|---|---|
| FR 1 | Implementation of the home page of the game |
| FR 2 | Implementation of the login/sing-up page |
| FR 3 | Implementation of other link such as game instructions and query submission. |
| FR 4 | The user can choose the number of players (2-6) |
| FR 5 | The user can choose the complexity of the game |
| FR 6 | The game shall start with one preloaded standard Risk map with 42 territories. |
| FR 7 | The user can control the various phases of the game |
| FR 8 | The user should not see other user's details such as password or any other specific information |
| FR 9 | The user should have an option to specify neighboring relations |

## 3.2 Usability

| Requirement ID | Requirement Definition |
|---|---|
| UR 1 | The user can start the game in Google Chrome |
| UR 2 | The user can start the game in Firefox |
| UR 3 | The user can start the game in IE |

## 3.3 Performance

| Requirement ID | Requirement Definition |
|---|---|
| PR 1 | The database can store large user details |
| PR 2 | The game can support simultaneous games |
| PR 3 | The game launches the map as soon as the game starts |
| PR 4 | The map contents get updated as soon as the player finishes his moves |
| PR 5 | The server can support multiple request at once i.e. related to game details or any other website access. |

## 3.4 Reliability

| Requirement ID | Requirement Definition |
|---|---|
| RR 1 | The user gets to proper html pages once they click on the respective links |
| RR 2 | The game data shared across one game instance is same for all the players in that game instance |

## 3.5 Manageability/Maintainability

| Requirement ID | Requirement Definition |
|---|---|
| MR 1 | The changes can be incorporated at any stage when a user submits a query for a fault. |
| MR 2 | The website will work with any update of the browsers |

# 4. Use Case Scenario/ Use cases

| | |
|---|---|
| **Use Case ID** | UC 1 |
| **Use Case Name** | Login/Sing up |
| **Description** | As a user I must be able to sign up first and then login to the game page |
| **Pre-condition** | User is on the home page |
| **Basic Flow of events** | 1. The user comes on the home page<br>2. The user clicks on the sign up page<br>3. The user should be able to enter the details |
| **Post-condition** | The details of the user are entered into the database. |

| | |
|---|---|
| **Use Case ID** | UC 2 |
| **Use Case Name** | Accessing various link provided on the home page |
| **Description** | As a user I must be able to access all the links provided on the home page. |
| **Pre-condition** | User is on the home page |
| **Basic Flow of events** | The user must be able to access all the links available on the home page viz. game instructions, about us, submit query. |
| **Post-condition** | The user is taken to the requested page without any issues. |

| | |
|---|---|
| **Use Case ID** | UC 3 |
| **Use Case Name** | Choosing the complexity level |
| **Description** | As a user I must be able to choose the number of player and level |
| **Pre-condition** | User is logged in. |
| **Basic Flow of events** | 1. The user logs in to the game page<br>2. The use selects the number of player and level and press submit |
| **Post-condition** | After submitting those values the user waits for other players to join |

| **Use Case ID** | UC 4 |
|---|---|
| **Use Case Name** | Deploying Army |
| **Description** | As a user I must be able to deploy the armies in the territory |
| **Pre-condition** | User is in the game |
| **Basic Flow of events** | 1. The user clicks the deploy button<br>2. The user clicks on the territory. |
| **Post-condition** | After clicking on the territories the values of the army should increase by one. |

| **Use Case ID** | UC 5 |
|---|---|
| **Use Case Name** | Attacking Neighbors |
| **Description** | Aa a user I must be able to attack my neighboring countries |
| **Pre-condition** | User is in the game. |
| **Basic Flow of events** | 1. The user clicks on the attack button.<br>2. The user clicks on one of the territory owned by him.<br>3. After step 2 the user clicks on the neighboring enemy or neutral territory<br>4. An input window prompt pops up to enter the number of army |
| **Post-condition** | After attacking the updated army count, the new color and the new owner should be reflected |

| **Use Case ID** | UC 6 |
|---|---|
| **Use Case Name** | Create Game |
| **Description** | As a user I must be able to create a new game. |
| **Pre-condition** | User is logged in successfully. |
| **Basic Flow of events** | 1. The user enters nickname for the game.<br>2. The user clicks on create game button. |
| **Post-condition** | A new game id will be created and the user is shown the page to invite friends and to select the complexity of the game. |

| **Use Case ID** | UC 7 |
|---|---|
| **Use Case Name** | Join Game |
| **Description** | As a user I must be able to join an already created game. |
| **Pre-condition** | User is logged in and has been invited for a game. |
| **Basic Flow of events** | 1. The user enters nickname.<br>2. The user enters the game id.<br>3. The user clicks on join game button. |
| **Post-condition** | After entering details, the user should be taken to the waiting lobby. |

| **Use Case ID** | UC 8 |
|---|---|
| **Use Case Name** | Invite Friends |
| **Description** | As a user I must be invite friends by sending emails to them. |
| **Pre-condition** | User is logged in and has created a game. |
| **Basic Flow of events** | 1. The user enters the email id of friends one by one.<br>2. The user selects the complexity of game.<br>3. The user clicks join game button. |
| **Post-condition** | After entering details, the user should be taken to the waiting lobby. |

| **Use Case ID** | UC 9 |
|---|---|
| **Use Case Name** | Start Game |
| **Description** | As a user and the host, I must be able to start the game when required. |
| **Pre-condition** | User is host, All players have joined. |
| **Basic Flow of events** | 1. The user clicks the start game button when in the lobby. |
| **Post-condition** | The map should be loaded to all users and a game started notification is sent to all users. |

| **Use Case ID** | UC 10 |
|---|---|
| **Use Case Name** | Execute Turn |
| **Description** | As a user I must be able to execute turn once I have done all my actions in the map. |
| **Pre-condition** | User is in the game |
| **Basic Flow of events** | 1. The user clicks the Execute Turn button. |
| **Post-condition** | The user's map becomes inactive. The turn indicator in the bottom should now update with the next player's name. The next player's map should become active. |

| **Use Case ID** | UC 11 |
|---|---|
| **Use Case Name** | End Game |
| **Description** | The game should end when one player has conquered all territories. |
| **Pre-condition** | User is in the game |
| **Basic Flow of events** | 1. The user performs actions in the map. For each action the number of territories captured are counted to check if user has captured all territories. |
| **Post-condition** | The End of game and winner information is displayed. |