

# **Final Report Executive Summary**

## **Rise of Civilizations**

**[Group 13]**

**Akhil Kateja , Adil Qaisar , Andriy Serafyn , Himanshu Anand**

### **Project Description**

Rise of Civilization is a turn based strategy game. It is an intuitive and easy to play game that is suitable for everyone. As a strategy game, it requires the player to think logically in order to beat his opponents. Once you start the game, you get the opportunity to choose to play either versus an AI opponent or versus players on your local area network. The objective of this game is to develop and expand the user's empire that can last for ages and resist conquests from other empires.

Each player assumes the role of a ruler of an empire and will initially have some resources in the form of manpower, goods, army units and virtual currency to build his/her empire and compete with other empires/civilizations. The player should possess a knack of taking critical decisions regarding exploration, warfare and diplomacy. The game basically requires players to build a base where they build their units and eventually defeat all of the other players that are not in their team.

### **Functional Requirements**

#### ***Game Login and Configuration***

- When logging in, the player must allow the player to play in Single player(Play against Game AI) or Multi Player modes.
- The system must allow the player to change gameplay settings by selecting the Options menu.
- The system must allow the player to gain knowledge about a particular era or civilization by selecting the History option and to gain knowledge about the different aspects of the game by selecting the Learn to Play option.
- The system must allow the player to customize the game with options such as population size, difficulty level , map style , starting age, etcetera.

#### ***Game Start***

- The system must allow the player to begin the game after setting all the parameters.
- Once the game is started, the system must display a map for the player, along with the player's current score, timer and the name and number of all the resources.
- The system must display the health of the villagers and the weapons owned by the scout cavalry, by clicking on any of them.
- The system must also display the player with a town centre.

#### ***Players Engage in Conquest***

- The system must allow the players to engage in conquests and to use the available technologies.
- The system must allow the players to add new villagers in case they lose some in an attack.
- The system must allow players to build castles to solidify their defense.

#### ***Players Engage in Trade.***

- The system must allow players to be able to trade with other users throughout the game.
- The system must implement a scorecard for each trade to help evaluate the deal for each player.

#### ***Advancing to the Next Level and Ending the Game***

- The system allow the user to advance to the next age when the player builds enough units and possess enough resources.
- The system must end the game when the player has played in all the eras and has captured all the available resources.

### **Non-Functional Requirements**

- The game must run at least 120 fps(frame per second).

- The movement of the players being used must be precise and must have no lag in instruction and action.
- The game should be fully capable of logging in five users at a time, simultaneously.
- There should be no loss of user data in the even of system failure.
- The game shall allow the users to personalize their username, and profile space.
- The product shall be available to provide assistance for all users 24/7 through an automated system.
- There shall be access requirements where only the developers should have access to the code.

## **Design Goals**

The Rise of Civilizations follows the Model-View-Controller (MVC) architecture which can be explained as follows:

**Model** is where the application's data objects are stored. The model doesn't know anything about views and controllers. In the game, the model layer will encapsulate the logic for gameplay. The model layer will be responsible for performing all the computations such as determining the outcome of an attack, adding/subtracting user's resources. The Model layer will also have the logic to interact with the database.

**View** is what's presented to the users and how users interact with the app. In the game, view layer will be responsible for building the user interface. Everything that will be visible on screen will be part of the view layer. The view layer will also take care of the interaction of the user with UI such as entering his/her username, controlling the movement of villagers/scout cavalry/ army/ resources in order to perform activities such as building units attacking opponents.

**Controller** is the decision maker and the glue between the model and view. The controller updates the view when the model changes. It also adds event listeners to the view and updates the model when the user manipulates the view. The controller will be responsible for delegating the calls between the model and the controller. The controller will load the necessary view based on the computations performed by the model. The controller will be responsible for calling the necessary model classed based on the conditions in the game such as calling the database classes in case of storage/retrieval of user information or the calling of the appropriate model classes in order to update the user resources in case the user acquires/loses any.

## **Testing**

Testing must be integrated with various development activities from the start. A detailed test plan will be integrated in the report. Various testing activities such as code inspection, unit testing, integration testing and acceptance testing, will be designed and included and described in detail.

## **Conclusion**

To summarize, the Rise of Civilizations is a game where player face off opponents to be the last one standing, whether it is through conquest or by just outlasting others with a heap of resources. The game is targeted to all users, experienced or not experienced, games of any age that simply want to spend their time playing strategy game based on real facts, or rewriting history that "suits" them. The game is really easy and fun to be played and if a player has difficulty in understanding the game rules, there is an instructions menu that will bring you the instructions screen, where everything that you are required to do as a player is described.