Settlers of Catan Requirements Document

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Introduction

Settlers of Catan is a strategy board game in which players compete against each other to build a greater civilization on the island of Catan. Settlers of Catan has never been implemented on the Knights Party Table, and therefore it must be developed from the ground up.

Key Concepts

The following are key concepts for the strategy board game, Settlers of Catan:

- The map is made up of 19 tiles. For each type of tile, there is a different type of resource that can be gathered:
    - Hill tiles have Brick
    - Pasture tiles have Wool
    - Mountain tiles have Ore
    - Filed tiles have Grain
    - Forest tiles have Lumber
    - Desert tiles have nothing
- Each player begins with two settlements and two roads. Each settlement is worth one point, and the first payer to reach ten points wins
- In order to build settlements and roads and upgrade settlements to cities, a player needs resources. Resources are obtained by rolling a dice to determine which tiles on the map will produce resources. A player can only harvest resources from a tile that borders or contains a settlement or city. Different resources are required for settlements and cities. They are as follows:
    - Brick, Grain, Lumbar, and Wool for Settlements
    - Three Ore and Two Grain for Cities
    - Grain, Ore, and Wool for a Development Card
- When a player rolls a seven, no players receive resources. Instead, every player with more than seven resource cards must round down and lose half of their resource cards. Additionally, the Robber is activated and must be moved to either the Desert tile or any

tile without any other terrain tile. The player who rolled the seven must then steal a random resource card from an opponent who has a settlement or city next to the target tile.

- There are three different types of Development Cards. They are as follows:
    - Knight: When played, the Robber must be moved and the same procedure follows for when a seven is rolled. The first player to have three Knight Cards receives the card "Largest Army" which is worth two Victory Points. When another player receives more knight cards, he takes the Largest Army card in addition to the two Victory Points.
    - Progress Cards: When a Progress Card is played, the player will follow the instructions on the card. The card is then removed from the game.
    - Victory Point Cards: When a Victory Point card is received, it is hidden from other players unless the player has received ten of them.

Use Cases

Starting a Game

Goal

The player will successfully start a game of Settlers of Catan.

Other Resources Needed

No other resources are needed to start a game of Settlers of Catan.

User Action

After starting the Knight's Party Table, the player will select "Settlers of Catan" from the list of games shown to them. The second player will then select the option to confirm the game.

Product Action

The product will display the list of available games to the player. After the player selects "Settlers of Catan" from the list, the product will display a confirmation window to the other player.

Taking a Turn

Goal

The player will take their turn in Settlers of Catan.

Other Resources Needed

No other resources are needed to play a game of Settlers of Catan.

User Action

The player will roll the dice, indicating how many resources each player will receive in that turn. After receiving the resources, the player will then have the option to trade, build, buy a Development Card, or pass. Regardless of what they choose, they will still have the option to choose another action in order after completion (the player will not be able to build, then trade, but rather trade, then build). It is then the next player's turn.

Product Action

The product will generate a random number between zero and twelve. The product will then assign this quantity of resources to both players. The product will then present the current player with the menu of actions for them to select, in order: trade resources, build, buy Development Cards, or play Development Cards. Once a player has selected an action, they can perform the next sequential action, if they have the resources for it.

Building

Goal

The player will successfully build a settlement, city, or road.

Other Resources Needed

No other resources are needed for a player to finish a game.

User Action

When prompted, the player will select "Build" from the list of actions during their turn. The player will then select whether they wish to build a settlement, city, or road, and on which tile. If the player can afford to, the settlement, city, or road will be built.

Product Action

When the player selects "Build" from the list of actions, the product will display the items available to build. When the player selects the item they wish to build, the product will then prompt the user to select a tile to build on. After the player chooses a tile, the product will update the game board to feature the newly built item.

The Robber

Goal

The player will successfully utilize the Robber card.

Other Resources Needed

No other resources are needed for a player to finish a game.

User Action

If the player rolls a seven, they will then move the Robber to a tile on the board and receive one of the other player's Resource Cards. Both players will lose half of their resources.

Product Action

If a seven is generated, the product will alert the users of the Robber and randomly remove half of both player's resources, rounding down if there is an odd number. The product will then display a map of all tiles to the player whose turn it currently is, and that player will select a tile to place the Robber. That player will also receive a random Resource from the other player.

Playing a Card

Goal

The player will play a Development Card.

Other Resources Needed

No other resources are needed for a player to finish a game.

User Action

When prompted, the player will select "Play Development Card" from the list of actions. The user will then select a Development Card from the cards they have.

Product Action

After the player selects "Play Development Card", the product will display the Development Cards in their inventory. After the player selects their Development Card, the product will perform whichever action the card dictates.

Finishing a Game

Goal

The player will either win or lose a game.

Other Resources Needed

No other resources are needed for a player to finish a game.

User Action

The user will achieve 10 Victory Points.

Product Action

When one of the players has achieved 10 Victory Points, the game will end. The product will then ask the players whether or not they wish to play another game of Settlers of Catan, or go back to the game menu.

Functional Requirements

For further clarification, the following are requirements necessary for the Settlers of Catan game to function as designed:

- Two Players

Non-Functional Requirements

The following are non-functional requirements for the Settlers of Catan game:

Platform

Settlers of Catan will run on the Knight's Party Table. The Knight's Party Table will run the following:

Windows 10 Home Edition

Performance

Settlers of Catan will run within a reasonable amount of time, reasonable being dictated by the definition found in the project scope document.

Reliability

Any form of a system crash is unacceptable. Users are using the product to play Settlers of Catan, not constantly reboot the Knight's Party Table.