MAGIC REALM

BASED ON MAGIC REALM BY AVALON HILLS

COMP 3004 - Team 17

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1 INTRODUCTION

Welcome to the Magic Realm. Magic Realm is a complex board game designed by [blah]. Magic realm is a fantasy adventure, hex-tile, turn-based game that is filled with monsters and treasures. Choose between any 6 heroes. All of which have different skills and weapons. Combat against monsters and collect all the treasure.

1.1 Purpose

This project aims to allow the user to play the Magic Realm board game, but in software format. The complete board game is very big and complicated, thus this document will contain only the game functionalities that were implemented in the software corresponding this document. For additional rules and game functionality (those that were not implemented), please see the official Magic Realm rules.

1.2 Definitions

These definitions are based on what is given in the 3rd edition rules of the Magic Realm. The 3rd edition is the most modern version of Magic Realm. Below you will find the table of game definitions, these will be important to know in order to enjoy the game play.

Term	Definition
Attention Chit	The combat chit which has the character symbol on one side and is blank on the other.
Cave Clearing	A clearing that is in a cave.
Caves Tile	Any tile with at least one cave on it, in which treasure sites can appear.
Character	One of the 16 adventurer types that can be played by a player. Described on the character cards.
Chit	The smallest square counters, including combat chits, sound chits, warning chits, site chits, Lost City and Lost Castle chits, Monster Roll, Day (Turn), weather chits, visitor chits, and number chits.
Counter	Any game piece other than the hex tiles, character cards, and chits.
Denizen	A monster or native of the Magic Realm.
Dwelling	A dwelling is any building located on the map.
Mountain Clearing	A clearing that has ridges drawn around it on a mountain tile; not every clearing on a mountain tile is a mountain clearing.
Mountain Tile	A tile with at least one mountain clearing in which treasure sites can appear. Also includes the Deep Woods tile (even though there are no mountains in it) to round out the 5 Mountain tiles, along with the 5 Cave tiles, in which treasure sites can appear.
Player	A person who plays one of the characters. A distinction between the character and the player is made in some rules.
Tiles	The hexagonal Map Tiles (or "hex tiles") show the terrain of the Magic Realm. The green side of each tile is the front or "normal" side.
Wood Clearing	Any clearing that is not a cave or mountain clearing.

2 GAME RULES

Below you will find all the official game rules as per presented in the 3rd edition rules of the Magic Realm rules. Each rule is identified by its rule ID. These ID's are used as identifiers with respect to the game requirement traceability. The game rules presented are reflected to what has been implemented in our iteration.

2.1 Table

Game Rule ID	Description
GR-01	Each player plays the part of one character in the game. He controls that character's pieces and uses that character's counter to represent him on the map.
GR-02	The characters start the game in the same clearings with the Dwellings and move from clearing to clearing following the roadways.
GR-03	The clearings are connected by four kinds of roadways: black underground "tunnels", light brown "open roads", dark brown "hidden paths" and grey-speckled black "secret passages"
GR-04	The character's combat chits are the twelve chits that show his symbol on one side and either Move, Hide, Attack or Block on the other side. He plays these chits to do actions in the game. The values on each chit define its qualities.
GR-05	Magic Realm using the 20 map tiles. The map chits in each tile indicate the special places in that tile.
GR-06	Each player plays the part of one character in the game. He controls that character's pieces and uses that character's counter to represent him on the map
GR-07	Victory Points are calculated by comparing the characters' Fame, Notoriety, Gold, Great Treasures, and Spells with the Victory Requirements recorded at the beginning of the game.
GR-08	The player secretly chooses the Dwelling where he will start the game.
GR-09	The player records the requirements he needs to win the game in his Victory Requirements box.
GR-10	Each character gets one turn per game day. He plays the game by doing activities when he takes his turn.
GR-11	A character, hired leader, or controlled monster uses the Hide activity to try to hide. To record a Hide activity.
GR-12	At daylight, the character becomes unhidden and executes his activities.
GR-13	The Character can only move one clearing at a time
GR-14	The character card provides a quick reference to the character. The front of the card names and pictures him, and shows the symbol that identifies all of his personal pieces. The back summarizes his qualities and lists the items he starts the game with. Each character is explained in detail in the List of Characters. The List of Characters explains each character, and his Character card summarizes his qualities.

3 REQUIREMENTS

In this section, you will find all the features that were implemented in our version of Magic Realm. Each requirement contains its own unique ID, requirement description and where in the game rules it may be traced back to. There is also an assumption's table, which clearly indicates all the assumptions that we made for all our functional requirements.

3.1 Assumptions

Assumptions are a fairly important step in software development because it may make clear of any misunderstandings (of the requirements) that may occur during the development. Assumptions many of

the functional requirements that we will consider will trace to this list of assumptions. In Table 3.1.1, you will find the assumption ids, the assumption description as well as the justification.

3.1.1 Table

Assumption ID	Assumption Description	Justification
A-01	The first player to start the game gets first pick on which character they would like to play.	No two players can have the same character.
A-02	Some characters can pick any dwelling to start from.	Only the Dwarf and the Captain can start from different dwellings. All the other characters begin at the Inn
A-03	Any player can exit at any point, and the game may still continue.	
A-04	The system allows for players to play together from separate machines.	A game can still be played if players decide to play on different machines.
A-05	All players begin with 5 Victory Points	These Victory points can be distributed between Gold, Fame Notoriety, Treasure and Spell points.
A-06	Player cannot create character without first distributing all 5 Victory Points	All 5 Victory points must be used in order for a player to be able to create a character.
A-07	Once the game starts, no other players can join	The game can have 1-6 players, but players cannot join the server once a game has begun.
A-08	The game displays the character's status	Players can be able to keep track of their characters' status
A-09	Players wish to know the current phase of the game.	There are several phases during game play that affect different characters, players should be able to see the current phase of the game they are playing.
A-10	The players can chat in the lobby (before the game starts)	This is an additional feature, Players can chat in the lobby while they wait for other Players.

3.2 Functional Requirements

Functional requirements define what behaviour and functionality that is implemented in our software.
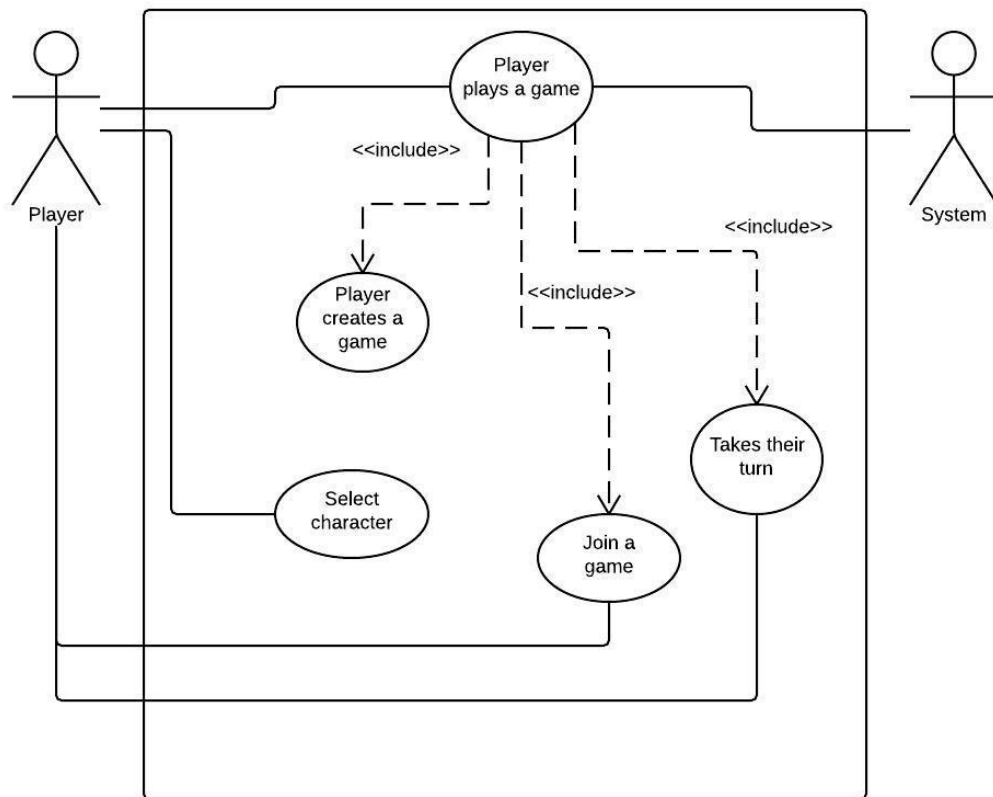
3.2.1 Table

Functional Requirement ID	Functional Requirement	Traceability
FR-01	Player can create a game	GR-01
FR-02	Players choose one character from a list of characters	GR-01, A-01
FR-03	Player can choose (depending on the character) which dwelling they would like to start at	GR-08,A-02
FR-04	The host player may start the session when desired amount of participants have joined the game	A-04
FR-05	Each player has 5 Victory Points which they can distribute as they wish.	GR-07, A-05
FR-06	Player can move their character to desired location	GR-03, GR-06, GR-13
FR-07	Player can choose to hide their character	GR-04
FR-08	Player can name character	GR-01
FR-09	Player can join game	GR-01, A-05

4 USE CASES

[A use case depicts a scenario, the system's interactions from "actors", and the paths of events that may follow. In the case of Magic Realm, the external actors include the player and the system]

4.1 Use Case Diagram

The diagram below corresponds closely to our use cases. Actors are the stick figures. Ellipses represent use cases, dashed arrows with an <<include>> stereotype represent an "includes" relationship, and regular lines represent association.

4.2 Use Cases

4.2.1 Table

UC-01	Player creates a game	Traceability
Summary	Player begins new Magic Realm game	
External Actors	The Server, The Player	
Triggering Event:	Player creates game	GR-01,
Pre-Conditions	Magic Realm program is open and displaying main menu	UC-03,
Main Sequence	1. Player creates a new Magic Realm game 2. When new game is created, game board is generated in Server 3. Player must create a character based on the options shown on the lobby screen (UC-04) 4. Player distributes 5 free Victory points: Gold, Fame, Notoriety, Treasure and spell (UC-04) 5. Player enters character's name (UC-04) 6. Player begins and views game board	UC-04, A-05
Result	Player is now in game	
Post-Condition	Player is no longer in the lobby screen and can now play Magic Realm	

4.2.2 Table

UC-02	Player joins game	Traceability
Summary	Player can join an existing Magic Realm game	
External Actors	The Player	
Triggering Event:	Player joins an existing game	GR-01
Pre-Conditions	Magic Realm program is open and a new game is running on the Server	UC-01, A-05
Main Sequence	1. New player joins an existing game 2. New player enters IP address of desired game 3. Server allows new Player to enter game lobby 4. New player creates character, initializes character's Victory Points 5. New player enters game and views game board	
Result	New player is now in existing game in the Server	
Post-Condition	New player no longer in the lobby screen and is now viewing game board screen with existing Players.	

4.2.3 Table

UC-03	Player plays a game	Traceability
Summary	Player starts and plays Magic Realm game	
External Actors	The Player, The System	All FR
Triggering Event:	A new game of Magic Realm is running	UC-04, GR-10
Pre-Conditions	The player is not in a game, or the game does not exist yet.	UC-01, GR-06
Main Sequence	1. Player creates a new game as per UC-01 2. All external players join new game lobby as per UC-02 3. Once all players are ready, host may create a new game of Magic Realm. 4. The host player starts the first round, thus beginning their turn.	GR-01, GR-02, A-02
Result	Player is now in existing game in the Server	
Post-Condition	Game is now on-going and players may take their turns	UC-05

4.2.4 Table

UC-04	Player selects character	Traceability
Summary	Player selects character to play	
External Actors	The player	
Triggering Event:	Player creates or joins a new game	UC-01, UC-02
Pre-Conditions	A game must exist	UC-03, GR-01, A-02, A-05
Main Sequence	1. Player selects a character based on the options shown	

	on the lobby screen.
	2. Player distributes 5 free Victory points: Gold, Fame, Notoriety, Treasure and spell
	3. Player enters character's name
	4. Depending on the character (Captain or Dwarf) the player may have to select a starting dwelling for their character.
Result	A player now has their desired character
Post-Condition	Player may play game once all players have selected a character

4.2.5 Table

UC-04	Player takes their turn	Traceability
Summary	Player takes their turn during the phases	UC-03
External Actors	The player	
Triggering Event:	Daylight is when players can move	
Pre-Conditions	Game must be running with The server	
Main Sequence	1. Player can move around only one clearing at a time 2. Player can only move once 3. Player can also hide	
Result	The player ends his turn and the next player can play	
Post-Condition	The player is in session	

4.3 Responsibilities

These responsibilities are from the use cases above, and they are used with the use case maps which will be presented below.

4.3.1 - Table

In the table below: all the responsibilities that with respect to in the Use Cases we analyzed earlier

| Resp ID	Responsibility Description	Use Case(s)
RESP-01	The Player creates new Magic Realm Game	UC-01
RESP-02	The Player selects character	UC-04
RESP-03	The Player enters character's name	UC-04, UC-01
RESP-04	The Player enters character's initial VP (Victory Points) distribution	UC-04
RESP-05	The Player joins game	UC-02
RESP-06	The Server is running and displays game board	UC-02
RESP-07	The Server allows new players to join existing game	UC-02
RESP-08	The Player enters IP address of game server	UC-02
RESP-09	The Server allows new Player to enter game lobby	UC-02
RESP-10	The Player (if Dwarf or Captain) selects a starting dwelling	UC-04
RESP-11	The Server notifies the player when the phase has changed and a new day as	UC-05, UC-

	begun	03

4.4 Unbound Use Case Maps

The unbound use case maps presented here correspond to their UC and responsibility counterparts above.

4.4.1 UUCM-01
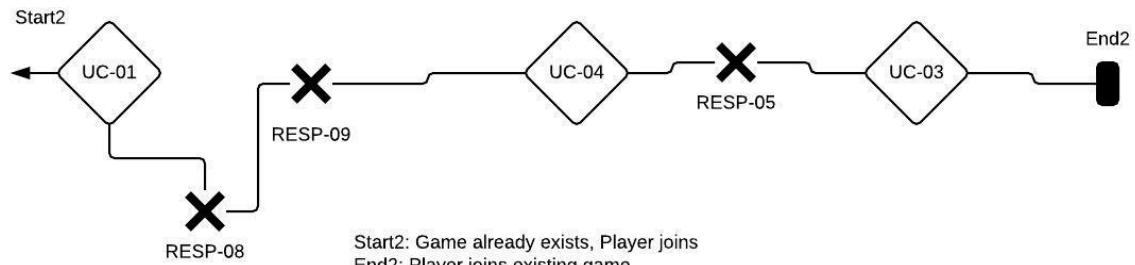
UC-01: Creating a name
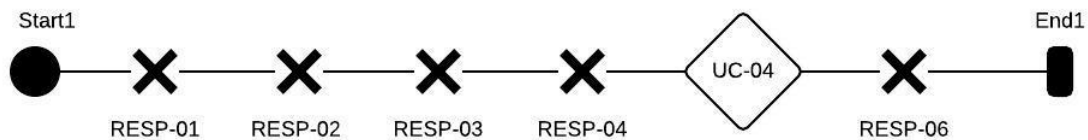
Start1: Player creates new game
End1: Player joins new game
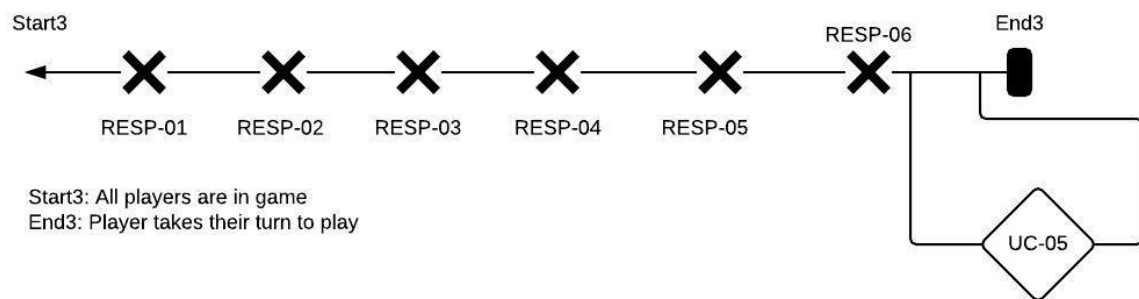
4.4.2 UUCM-02

UC-02: Joining a name

Start2: Game already exists, Player joins
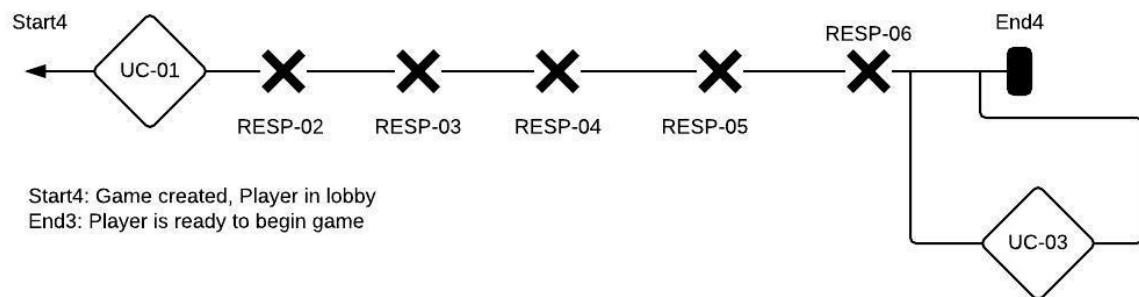End2: Player joins existing game

4.4.3 UUCM-03

UC-03: Playing a game

Start3: All players are in game
End3: Player takes their turn to play

4.4.4 UUCM-04

UC-04: Selecting a character

Start4: Game created, Player in lobby
End3: Player is ready to begin game

5 DESIGN DECISIONS

[This section documents design decisions that have been taken with respect to classes and objects chosen from the system.]

5.1 Decisions

Design ID	Design Decision	Traceability
DD-01	**The host (the player who begins the game) will be the server of the game.** Reasons behind a design decision: We decided that it was easier to maintain a game if a server started when the host began the game. Other alternatives considered: We also considered having a Server run as soon as you start the client, but that would not make sense because then you would have a server for every single client open The tradeoffs evaluated: A serious tradeoff is that if the host exits, the game ends, but there is a way of fixing that problem.	Group Decision