CS383: Software Engineering

HW1: Use Cases
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1 Playtest

1.1 Results from the playtest

(Author: John Goettsche & David Klingenberg)

Annoying the features of the game (John):

- pain in the ass to set up and find units
- a lot of time checking tables
- pieces get bumped out of position a lot
- pace was slow

How will manual elements be translated? (David)

- The map would have to become zoomable and scrolling enabled to accommodate the limited real estate of the computer screen.
- Physical elements such as the cards and cardboard unit markers would have to be translated into icons
- The dice would have to represent by a random number generator.
- Most of the rules would be automated
- Most housekeeping functions, such as advancing the solar cycle, would also be automated
- Lore items would be stored in a searchable library.

What parts have to change? (John)

- Scenarios can be set up by the computer (optional)
- Neutrals can be set up by the computer (optional)
- Combat and other random events and their results will be determination by the computer
- Phases will be tracted by the computer
- General housekeeping will be automated

What parts of the manual game can be retained as-is? (David)

- The appearance of the map, unit layout, artwork, history, and other lore items could be preserved as is.
- The general flow of the game and the rules would be maintained as is.
- The primary difference is who is handling housekeeping chores and administering the rules.

2 Use Cases

2.1 Main Menu

(Author: David Klingenberg)

2.1.1 Pregame

Pregame Main Menu:	**Initiate a game state.**
Summary	A player initiates the initial state of the game.
Actors	• Human player
Preconditions	• The game is not in a active game state.
Primary Sequence:	• Player chooses one of the following: 1. New game 2. Resume game 3. Exit game 4. Game options
Alternative	• Canceled game menu.

2.1.2 Active Game-play

Game-play Main Menu:	**Alter or save game state.**
Summary	A player is at least in the initial state of the game or play has progressed beyond the initial state.

Actors	• Human player
Preconditions	• The game has been initialized to the beginning of play or the game is in progress.
Primary Sequence:	• Player chooses one of the following: 1. New game 2. Resume game 3. Save game 4. Exit game 5. Game options
Alternative	• Canceled game menu.

2.1.3 Resume Game

Resume game:	**Resume a saved state.**
Summary	The player restores a previously saved state.
Actors	• Human player
Primary Sequence:	• 1. Select the name of the saved state. 2. Initiate load.
Alternative	• Resume game is canceled.

2.1.4 Save Game

Save game:	**Preserving a game state.**
Summary	The player saves the state of the game to resume it at a later time.

Actors	• Human player
Preconditions	• A scenario is underway.
Primary Sequence:	• 1. Name the state to be saved. 2. Initiate save.
Alternative	• Save game is canceled.

2.2 Scenario Selection

(Author: David Klingenberg)

2.2.1 Scenario Selection

New game:	**Choosing a scenario.**
Summary	The player chooses a scenario.
Actors	• Human player
Preconditions	• Scenario selection has been chosen from the main menu. • Players have agreed on a scenario.

Primary Sequence:	• The player selects from the following scenarios. 1. War of the League of Arrival, 1100 BF 2. The War of the Black Dwarrows, 366 AF 3. The Rise of the Dark Lord, 473 AF 4. The War of the Great Sword, 502 AF 5. The Orcish Revolution, 794 AF 6. The War of X, 799 AF 7. The 1st DwarroOrcish War, 846 AF 8. Gundarchuksson's Weird, 845 AF 9. The 2nd Dwarro-Orcish war, 846 AF 10. Northern Kingdoms, 867 AF 11. Imperial Expansion, 877 AF 12. The Destruction of the ORC, 922 AF 13. The Conquest of the South, 934 AF 14. The 3rd War of the League of Arrival, 974 AF
Alternative	• Scenario selection is canceled.

2.2.2 Race Selection

New Game:	**Choosing a race.**
Summary	A player chooses a desired race to represent during the scenario.
Actors	• One of (N) human players allowed in the scenario.
Preconditions	• One of the 14 scenarios has been selected.

Primary Sequence:	• The current player selects a race from the list of races allowed by the scenario. • Next player initiates use case "Race selection" or else use case "unit placement" is initialized.
Alternative	• The current player returns the game to use case "Scenario Selection".

2.2.3 Unit placement

New game:	**Unit placement**
Summary	A player places his units one at a time into a legal hex.
Actors	• One of (N) human players allowed in the scenario.
Preconditions	• The player representing the race to be deployed is in active control.
Primary Sequence:	• Unit Placement 1. The player initiates the use case "select unit". 2. The player initiates the use case "select hex". 3. If the player still has units to place or relocate, they are returned to step one. • Next player initiates use case "Unit Placement" or the game begins.
Alternative	• The current player returns the game to use case "Scenario Selection".

2.3 Random Events

(Author: John Goettsche)

2.3.1 Display Die Roll

Random Events	**Dispay Die Roll**
Summary	Displays the result of a die roll
Actors	• Players
Preconditions	• A die roll is required for a user command
Primary Sequence	• user selects a command that requires a die roll • Computer selects a random number from 1 to 6 • Computer displays message box with selected value • User clicks OK button • Computer closes message box
Alternatives	• Computer requires more than one die roll, then the process is performed the number of times it is requested
Postconditions	• a random number from 1 to 6

2.3.2 Display Player Order

Random Events	**Display Player Order**
Summary	display the order of play

Actors	• Players
Preconditions	• is currently the Player-Order Determination Inter-Phase
Primary Sequence	• Computer determines the order of play • Computer displays a dialog box with the order of play • User clicks the OK button • Computer closes dialog box
Postconditions	• a message box informing the user of the order of play

2.3.3 Display Random Events

Random Events	**Display Random Events**
Summary	displays a dialog box describing a random event
Actors	• Players
Preconditions	• is currently the Random Event Determination Inter-Phase
Primary Sequence	• Computer selects a random event • Computer displays a dialog box describing the random event. • User selects the OK button • Computer closes dialog box

Postconditions	• a dialog box describing a random event

2.3.4 Display Random Movement

Random Events	**Display Random Movement**
Summary	move all the vortices, uncontrolled killer penguins, or other randomly-moving units or characters which are required to move in this phase
Preconditions	•
Primary Sequence	• Computer centers on the view on a unit to be moved • Computer moves the unit
Postconditions	• each move is displayed on the screen

2.3.5 Rally Demoralized Units

Random Events	**Rally Demoralized Units**
Goals	User rallies demoralized units.
Actors	• Players
Preconditions	• is currently a players Combat Phase
Summary	User attempts to rally units

Primary Sequence	• user selects a unit to rally (see Unit Selection) • Computer determines if the rally was • Computer displays the die roll (see Display Die Roll) • Computer displays the unit in its new status (demoralized or not
Postconditions	• a potential change in status for demoralized unit

2.3.6 Display Unit

Random Events	**Display Unit**
Goals	Display unit information
Actors	• Players
Preconditions	• User turn
Summary	display a message box showing information about a selected unit
Primary Sequence	• User selects a unit • Computer displays a message box containing all the relavant information on the unit • User selects the OK button • Computer closes the message box
Postconditions	• a dialog box displaying the unit information

2.4 Selection

(Author: Gabe Pearhill)

2.4.1 Unit Selection

Select Unit(s)	**Select one or more units**
Summary	Player clicks a unit on the game board.
Actors	• Player
Preconditions	• Phase requiring unit selection.
Steps	• Once a phase requiring unit selection begins, the computer highlights all available units. • The user clicks one or more units. • Computer saves the selection state.

2.4.2 Hexagon Selection

Select Hexagon	**Record the players hexagon selection.**
Summary	The basic action of selecting a hexagon, be it for magic, movement, or attacking.
Actors	• Player
Steps	• Player clicks on a hex. • Computer records the hex selection.

2.5 Movement

(Author: Gabe Pearhill)

2.5.1 Move a Unit

Move Unit(s)	**Move unit(s) across the map!**
Summary	During the movement phase the player selects and moves units.
Actors	• Player
Preconditions	• Movement Phase
Steps	• Select unit(s). (See Unit Selection) • Computer highlights hexagons within range of the selected units. • Player selects an eligible hexagon. • Computer checks if tile has special attributes (a portal for example) and takes action appropriately.

2.5.2 Using a Portal

Teleportation	**Give the player the choice to use a portal hexagon.**
Summary	If a unit moves on top of a portal, and the player chooses to use it, the computer must move the selected units to another portal location on the map.
Actors	• Player

Steps	• Player moves on top of a portal hexagon. • Player is provided a dialog giving them the option to use the portal. • If the player chooses to use the portal the player must then choose to teleport his units individually or as a group. • Perform appropriate teleportation. • Should an enemy unit occupy an output portal, the teleported units should be retreated by one tile.

2.6 Magic

(Author: Tao Zhang)

2.6.1 Spell Segment

Magic I	**Spell Segment**
Actors	• Phasing player • Computer
Summary	Phasing player cast spells
Preconditions	• End of Phasing Player's Movement Phase
Steps	1. Phasing player select spells 2. Computer perform spells

2.6.2 CounterSpell Segment

Magic II	**CounterSpell Segment**
Actors	• Non-phasing Player • Computer
Summary	Non-phasing players case counterspells
Preconditions	• End of phasing player spell segment

Steps

1. non-phasing players select counterspells in the player-order of this turn
2. Computer perform counterspells of all non-phasing players selected

2.6.3 Spell Selection

Magic III	**Spell Selection**
Actors	• Player
Summary	Players select spells to cast
Preconditions	• During the movement Phase • During the Spell Segment • During the CounterSpell Segment • During the Combat Phase

Steps

1. Select a character who has magic PL
2. Select a spell
3. Click "Cast Spell" button
4. Repeat steps to cast enough spells

Alternatives	• Click "End Spell Segment" button to end spell selection phase

2.6.4 Spell Selection Helper

Magic IV	**Spell Selection Helper**
Actors	• Computer
Summary	Computer select all available spells for each character and show them to players
Preconditions	• Player start spell selection

Steps

1. Make a list of all current characters who are able to cast spells
2. For each characters on the list, make another list of spells that character has ability to cast.

Postconditions	• Display a list names of spells on the screen when player select the character

2.6.5 Spell Cast

Magic V	**Spell Cast**
Actors	• Computer
Summary	Computer performs spell casting
Preconditions	• Player assign a character to cast a spell

Steps

1. Roll a die (Random Number) to determing spell casting succeed or not
2. Refresh information
3. Second roll taken to determine whether the character die or survive
4. Refresh information

Alternatives	• If succeed, perform the spell and cost manna points • If fail, nothing • If die, anouncement and remove the information of that character • If survive, nothing

2.6.6 Manna Regeneration

Magic VI	**Manna Regeneration**
Actors	• Computer
Summary	Regenerate Manna points for each Spell-casting characters
Preconditions	• End of Diplomacy Inter-phase

Steps

1. Make a list of all current characters who need implement manna regeneration phase
2. Calculate and add the mana points that each character gained based on different kind of conditions and cases
3. Computer refresh the screen to display new manna information

Postconditinos	• Dialog box: "Start Manna regeneration inter-phase" • Sleep for a while • Dialog box: "Manna regeneration phase done!"

2.7 Combat

(Author: Matthew Brown)

2.7.1 Attack Hex

Combat I:	**Attack Hex**
Goal	To attack a unit
Actors	• Phasing Player
Preconditions	• The current user is in his or her combat phase
Summary	The current user has to select an eligible unit then select an eligible hex to attack with the selected unit. The computer then gives the results of the attack and gives all users their possible outcomes and actions to analyse.
Related Use Cases	• Select Unit • Select Hex • Dice Rolling

Primary Sequence	• User chooses an eligible unit with the select use case • User chooses an eligible hex with the hex select use case • Computer calculates the combat results and displays valid options • User chooses a valid option • Computer calculates the result of the option and updates the visual effect of the option

2.7.2 Retreating

Combat II:	**Retreating**
Goal	Retreat from a attack
Actors	• User
Preconditions	• Enemy player attack one of your units
Summary	The current user can choose to retreat from an attack from an enemy unit. This demoralizes the players units but allows them to be used in a later turn
Related Use Cases	• Select Hex

Primary Sequence	• Computer displays a dialogue box stating the option to retreat • User selects the option to retreat • User selects the hex to retreat to using the Select Hex use case • Computer updates the unit location and demoralizes the units
Alternatives	• Player decides to not retreat in Section 2

2.7.3 Advance after combat

Combat III:	**Advance after combat**
Goal	Pursue retreating units
Actors	• User(s)
Preconditions	• Units retreat from attacking units
Summary	When a player attacks, an opposing player may be able to retreat their units. If this retreat occurs then the attacking player may be able to choose to pursue the retreating units
Primary Sequence	• pposing player uses the Retreating use case • Computer displays a dialogue box stating the option to purse retreating units • User selects their preferred option • Computer displays results of the user's selection

2.7.4 Capturing

Combat IV:	**Capturing**
Goal	Capture an enemy character
Actors	• User
Preconditions	• User in either movement phase or Advance after combat usage case
Summary	If a user's unit is in moving, whether through the movement usage case or the advance after combat phase, and finishes movement on an enemy's character then that character has been captured
Primary Sequence	• User chooses a hex during their movement phase or advance after combat usage case • The user chooses a hex with an enemy character • The computer then updates the graphics for a captured unit
Alternatives	• Player does not move to a hex with an enemy character

2.7.5 Escaping

Combat V:	**Escaping**
Goal	Have opponent units abandon captured Character
Actors	• User
Preconditions	• Have a captured character

Summary	Once a character is captured the capturing units must remain with the captured character while escorting him/her to the capital of the players race
Primary Sequence	• User moves an escorting unit away from a captured character • Character automatically escapes • Computer updates the map to show the escaped character

2.7.6 Leadership Rating

Combat VI:	**Leadership Rating**
Goal	Have a character escape with use of his Leadership Rating
Actors	• User
Preconditions	• Game is at the end of any Manna Regeneration phase and is not in the same turn as the turn the character was captured
Summary	A character may have a chance to escape after the game turn he/she was captured. The odds of escaping depend on the leadership rating of the character

Primary Sequence	• Computer displays dialogue box with option for escape • User chooses the option to escape • Computer calculates whether the character escapes based of the Leadership Rating • Computer updates the graphics to show the escaped character and informs user of result through dialogue box • User clicks "OK"
Alternatives	• Character does not escape

2.8 Diplomacy

(Author: Cameron Simon)

2.8.1 Influencing Neutrals

Actors	• User • Computer
Goals:	Influence Neutrals
Preconditions	• Neutral's Diplomacy marker must be within one hex of a lettered hex(a players hex) on the Diplomacy track.
Summary	When a neutral is influenced by a player that player can move freely through that neutrals territory.

Primary Sequence:	• Steps: 1. Computer recognizes neutral is being influenced by player. 2. Player prompted to see if they want to move through neutral territory. 3. Player moves through the neutrals territory as they wish. 4. If neutrals diplomacy marker is moved should prompt player to move out of neutral territory unless they want to enter "Invading Neutral" state.
Produces:	Diplomacy map with new neutral locations is displayed.

2.8.2 Invading Neutrals

Actors	• User • Computer
Goals:	Invade Neutrals
Preconditions	• User places his/her Army units, Monsters, or Vortices inside territories owned by a Neutral.
Summary	Decide who neutrals in question are going to make alliances with.

Primary Sequence:	• Steps: 1. Computer checks position of Neutral's Diplomacy marker on Diplomacy Track. 2. If marker is closest to a lettered hex, Computer places Neutral on side it was leaning toward. 3. If marker equidistant from two or more opposing, non-invading players, computer displays die roll and players roll (highest wins control). Computer places neutral in winning players hex. 4. If marker equidistant from invading player's hex and one or more other player's hex, it will immediately ally with some non-invading players as in step 3. Computer places neutral in winning players hex. 5. If marker closest to invading Player's hex it is immediately placed in Neutral central hex by computer.
Produces:	Diplomacy map with new neutral locations is displayed.

2.8.3 Human Sacrifice

Actors	• User • Computer
Goals:	Try to gain Influence over Neutrals
Preconditions	• Player moves a unit or Character adjacent to a unit or character controlled by the Neutral to whom he wishes to sacrifice.
Summary	Neutral's Diplomacy marker is moved one hex by the sacrificing Player.

Primary Sequence:	• Steps: 1. Player chooses option of human sacrifice. 2. During the Alliance Determination Phase, the unit or Character is removed from play by the computer. 3. Computer moves Neutral's diplomacy marker one hex. 4. Player may sacrifice as many units/characters as they wish but computer will NOT move diplomacy marker any more for that game turn.
Produces:	Diplomacy map with new diplomacy locations.

2.8.4 Spawn Emissaries

Actors	• User • Computer
Goals:	Creation of emissarries.
Preconditions	• Character must have diplomatic rating greater than zero.
Summary	Up to two emissaries created for character that exist only for one purpose.

Primary Sequence:	• Steps: 1. Computer recognizes game is in Friendly Movement Phase. 2. Computer prompts user to see if they want to create emissaries. 3. User responds yes or no. 4. User selects how many they want to create (1 or 2).
Produces:	Specified number of emissaries on game board. (Do we need rules for emissary movement and deletion in this use case?)

2.8.5 Diplomacy

Author:	**Cameron Simon**
Actors	• User • Computer
Goals:	Establish new diplomacy lines on table.
Preconditions	• Game must be in Diplomacy Inter-Phase state and a player must have a Character of Emissary in the Capital hex of a Neutral Power.
Summary	Establish new diplomacy lines based on game specifications.

Primary Sequence:	• Steps: 1. Computer cross references the race of the player's character or emissary and the race of the neutral power on the table to yield a single number (negative or positive). 2. Player rolls two dice and has that number added to the number found in step 1. 3. Computer references the Diplomacy Results table with number found above (result will be positive, negative, or an 'x'). 4. Based on output from step 3 and the rule specification for those outputs, the computer places the pieces in their new locations on the diplomacy track.
Produces:	Display updated map with new marker location on diplomacy map.

2.8.6 Alliance Selection

Actors	• User • Computer
Goals:	Form alliances with other players.
Preconditions	• Game must be in Player-Order Determination Inter-Phase.
Summary	Players choose who they want to be allied with for the current game turn.

Primary Sequence:	• Steps: 1. Each player is prompted to see if they want to form alliances. 2. If player says yes, then they select the player they want to ally with. 3. Computer checks to see if players selected each other to be allies. (Ex: If player A selects to ally with player B, Player B must also select to ally with player A to form the alliance)
Produces:	Displays current player alliances.