

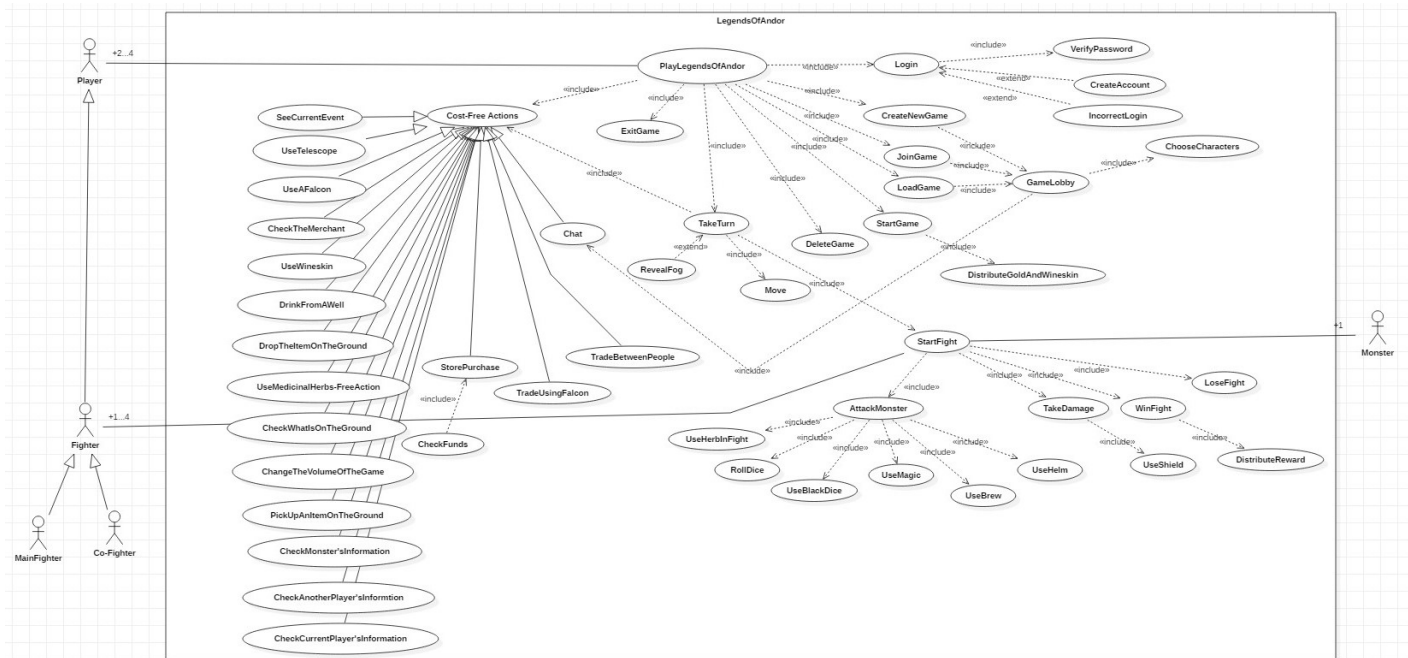
Legend of Andor Use Cases

Group 12

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Overview: Use Cases Diagram



1 User Goal Level

Play Legend of Andor

Use Case: Play Legend of Andor

Scope: LegendOfAndor

Level: User Goal

Intention in Context: The intention of the Player is to play the game “Legend of Andor” in cooperation with other players. **Multiplicity:** Between 2 and 4 Players are required to play the game. A given player is not allowed to play multiple games at the same time.

Primary Actor: Player

Main success Scenario:

1. Player logs onto System.
2. System presents a list of joinable games.
3. Player chooses to join existing game, load a previous game or create a new game.
5. Players choose their heroes and inform System when they are ready to begin.
6. Players take turns.
7. System informs Players about the outcome of the game.

2 Subfunction Level

Login

Use Case: Login

Scope: LegendOfAndor

Level: Subfunction

Intention in Context: The intention of the Player is to login into System.

Multiplicity: 1. Only 1 Player can login into a given account.

Primary Actor: Player

Main success Scenario:

1. Player logs into System.
2. System verifies the password and username match.
3. Player is taken to the MainLobby.

Extensions:

- 2a. If the password is incorrect or Player is already logged in another device. There will be a pop-up message indicating an error occurred.
- 2b. If Player is new. An account will be created using the username and password provided.

CreateNewGame

Use Case: CreateNewGame

Scope: LegendOfAndor

Level: Subfunction

Intention in Context: The intention of the Player is to create a new game others can join.

Multiplicity: There can be only one Player that created a given game.

Primary Actor: Player

Main success Scenario:

1. Player instructs System to create a new game for 2, 3 or 4 Players.
 2. Player chooses a name for the room.
 3. Player chooses the difficulty.
 4. System creates the game and Player enters a GameLobby.
- Extensions:**
- 1a. Player quits unexpectedly or loses connection. Use case ends in failure.

JoinGame

Use Case: JoinGame

Scope: LegendOfAndor

Level: Subfunction

Intention in Context: The intention of the Player is to join a game created by someone else.

Multiplicity: 1-3.

A maximum of 3 Players can join a game, since one player must be creator and in total no more than 4 players in a game.

Primary Actor: Player

Main success Scenario:

1. System presents a list of available games to Player.
 2. Player informs System that she wishes to join a specific game.
 3. System presents GameLobby of the chosen game to the Player.
- Extensions:**
- 2a. Player cancels his action and goes back to the MainLobby.

LoadGame

Use Case: LoadGame

Scope: LegendOfAndor

Level: Subfunction

Intention in Context: The intention of the Player

is load a previous and incomplete game from internal memory.

Multiplicity: 2-4.

The original Players of the game can all load after it was saved.

Primary Actor: Player

Main success Scenario:

1. Player informs System to load a previous game.
2. System presents the GameLobby to the Player.
3. System verifies all Players have the same data in the game scene.

Extensions:

- 3a. If there is a difference between the game files of the Players or one of the Players does not have a saved copy, the game will be synced from the Player that created the game.

StartGame

Use Case: StartGame

Scope: LegendOfAndor

Level: Subfunction

Intention in Context: The intention of the creator is to start the game with the given settings, given that the other Players informed System that they are ready to begin.

Multiplicity: 2-4

Primary Actor: Player

Main success Scenario:

1. System determines the order of turns of the Players.
2. System presents the GameMap the Players.
3. System places heroes and other game objects, such as the well, to their corresponding positions.
4. Players distribute gold and wineskins among themselves
5. System informs the first Player it is his turn.

DeleteGame

Use Case: DeleteGame

Scope: LegendOfAndor

Level: Subfunction

Intention in Context: The intention of the Player is to delete a previous game file that was saved internally.

Primary Actor: Player

Main success Scenario:

1. Player informs System to delete a specific game file.
2. System demands a confirmation of the action with a pop-up message.
3. System deletes all files related to the game.

TakeTurn

Use Case: TakeTurn

Scope: LegendOfAndor

Level: Subfunction

Intention in Context: The intention of the Player is to play his turn and choose among multiple possible actions.

Multiplicity: 1

Primary Actor: Player

Main success Scenario:

1. System informs Player it is his turn.
2. Current Player informs System of what he wishes to perform, among the following actions:
Move: Move to a given position
Fight: with a Monster
Perform free actions
Interact
End your day
3. Player informs System he wishes to end his turn.
4. System informs Players of new game state.

Extensions:

- 2a. The position could be invalid, or the Player might not have enough hours, in which case the action will not be executed.
- 3a. If the Player didn't move, it will still cost him an hour.
- 3b. If the player walked into a space with fog token, reveal fog.

Exit the Game

Use Case: Exit the Game

Scope: LegendOfAndor

Level: Subfunction

Intention in Context: Player informs System of their interest in exiting the game.

Multiplicity: Any number of Players can simultaneously perform make the request.

Primary Actor: Player

Main success Scenario:

Player informs System that he/she wants to exit the game by clicking on “Quit the Game” button.

1. System blocks possibility to quit the game for Players.
2. System waits until current turn has finished and blocks any new actions of the next Player.
3. System blocks any new free actions of Players and waits until already started free actions will be finished.
4. System displays a message informing Players that someone wants to exit the game.
5. System locally saves the current state of the game.
6. System redirects all Players to the Game Lobby.

Cost Free Actions

Use Case: Cost Free Actions

Scope: LegendsOfAndor

Level: Subfunction

Intention in Context: The intention of the Player is to make a basic move without costing any hour, but it will end his turn.

Multiplicity: The system allows 4 players to do some free actions at the same time.

Primary Actor: Player

Secondary Actors: Player (who play other roles)

Main success Scenario:

Step 1 can be repeated as many times as desired by the current Player.

1. Player performs one of the following:
 - Chat
 - Check the merchant
 - See Current event
 - Check current player's information
 - Check another player's information
 - Check Monster's information
 - Use a falcon
 - Drink from a well
 - Pick up an item on the ground
 - Drop the item to the ground
 - Use wineskin
 - Use telescope
 - Use Medicinal herbs
 - Check what is on the ground

- Change the volume of the game

2. Current player informs the system he wishes to end his turn or do other free actions.

Extensions:

1.a Player is not allowed to do any free action at the same time, if he tries to do them at the same time, system will inform a warning and cancel the later free actions.

1.b When Player is performing any free actions, but he receives a notification from the system

1.b.1 If System informs Player there is another player wants to quit the game, the system ends the use case;

1.b.2 If System informs current Player that another player wants to trade with him, System will pause the use case;

1.b.3 If System informs current Player that another Player wants him to join the fight, System will pause the use case.

Chat

Use Case: Chat

Scope: LegendOfAndor

Level: Subfunction

Intention in Context:

The Players want to communicate with each other to make decisions in various situations including in the game lobby, game room, map (during the game) and fight.

Multiplicity: 2-4 (in a specific game)

Primary Actor: all the users who are currently involved in the main game lobby or in a specific game

Main Success Scenario:

1. Any Players are currently in a situation that involves a chat are automatically joined in the chat
2. Players can send a chat message by typing the content in the message bar and send it by clicking the return key or return button on the screen.
3. The messages that are sent will be visible in all the other users chat panel.

Extensions:

2a. A message will fail to be sent if it's too long (more than 2000 characters). The System will inform the user that the message is too long.

3a. A message will not be sent or will not be received

by other users if the network fails. The System will inform the user who fails to send a message.

CheckTheMerchant

Use Case: CheckTheMerchant

Scope: LegendOfAndor

Level: Subfunction

Intention in Context: The intention of the Player is to take a look at what is inside the merchant without buying anything

Primary Actor: Player

Facilitator Actor: Merchant

Multiplicity: Maximum 4 Players can check the merchant concurrently.

Main success Scenario:

Players are allowed to check the merchant any territory and they can check it at any time.

1. Player informs the Ssystem that he wishes to see what is in the merchant by clicking the merchant icon on the map or on his screen.
2. System opens a window and shows the player what the merchant is selling.
3. Player informs the system that he wishes to see more details about the article by moving his mouse onto that article.
4. System opens a window and shows the player the description of this article.
5. Player informs that he finished checking the merchant by clicking the error icon on the window.
6. System closes the merchant window.

CheckCurrentPlayersInformation

Use Case: CheckCurrentPlayersInformation

Scope: LegendOfAndor

Level: Subfunction

Intention in Context: The intention of the Player is to check his hero's information

Multiplicity: Maximum 4 Players can check their hero information concurrently.

Primary Actor: Player

Main success Scenario:

Player are allowed to see his players' state at any time.

1. Player informs the system that he wishes to see his

hero's state by clicking the hero's head icon on the bottom of the user interface.

2. System opens a window and shows the player his hero's information.

3. Player informs the window that he wants to close the hero's information window by clicking the error icon on the window.

4. System closes the hero information window.

CheckAnotherPlayersInformation

Use Case: CheckAnotherPlayersInformation

Scope: LegendOfAndor

Level: Subfunction

Intention in Context: The intention of the Player is to check other hero's information

Multiplicity: Maximum 4 Players can check other hero information concurrently.

Primary Actor: Player

Secondary Actor: Other Players

Main success Scenario:

Player are allowed to see other players' state at any time.

1. Player informs the system that he wishes to see other hero's state by clicking the other hero's head icon on the bottom right of the user interface.

2. System opens a window and shows the player other hero's information.

3. Player informs the window that he wants to close the hero's information window by clicking the error icon on the window

4. System closes the hero information window.

Extensions:

- 2.a. If another player's states changes. The system won't update the opened hero information board.

CheckMonstersInformation

Use Case: CheckMonstersInformation

Scope: LegendOfAndor

Level: Subfunction

Intention in Context: The intention of the Player is to check Monster's information

Multiplicity: Maximum 4 Players can check other hero information concurrently.

Primary Actor: Player

Main success Scenario:

Player are allowed to see other players' state at any time.

1. Player informs the system that he wishes to see Monster's information by clicking the Monster icon on the map or on the bottom right of the user interface.
2. System opens a window and shows the Monster's information.
3. Player informs the system that he wants to close the Monster's information window by clicking the error icon on the window.
4. System closes the Monster information window.

Extensions:

- 2.a. If the Monster is defeated by other players. The system won't update the opened hero information board.

DrinkUpAWell

Use Case: DrinkUpAWell

Scope: LegendOfAndor

Level: Subfunction

Intention in Context: The intention of the Player drink a well

Multiplicity: Maximum 4 Players can drink up different well at the same time.

Primary Actor: Player

Main success Scenario:

Player only allows to drink the well when it is his turn and his stand on a region with a well on it.

1. Player informs the system that he wishes to drink well.
2. System updates the willpower of the player
3. System changes the well icon to grey
4. System informs the player that his turn is over

Extensions:

- 1.a If it is not Player's turn then System will inform a warning and end the use case.
- 1.b If the icon is grey then System will inform the Player the well has already been drunk and end the use case.
- 2.a.1 If Player's hero is Warrior then he will get 5 willpower.
- 2.a.2 If Player's hero is not Warrior then he will get 3

willpower.

PickUpAnItemOnTheGround

Use Case: PickUpAnItemOnTheGround

Scope: LegendOfAndor

Level: Subfunction

Intention in Context: The intention of the Player is to pick up some item on the ground

Primary Actor: Player

Multiplicity: Maximum 4 Players can pick up item from the ground concurrently. However, if multiple players are in the same region, only the first player will get the item.

Main success Scenario:

Player allows to pick up an item from the ground at any time.

1. Player informs the system that he wishes to pick up some item from the ground.
2. System opens the ground window for the user.
3. Player picks up something and drags it to his bag.
4. System updates the game state for every Player.

Extensions:

- 1.a If it is not this Player's turn System will inform a warning and end the use case.
- 2.a If Player's bag is full, then System will show a warning and use case ends.
- 3.a The player can only carry one thing on his arm
 - 3.a.1 If Player has a falcon, then when he picks a bow or shield then the system will show a warning and end the use case.
 - 3.a.2 If Player has a shield, then when he picks a bow then the system will show a warning and end the use case.
- 4.a System decreases the number of that item by 1. If the result is zero, then System delete that icon from Ground board.

DropAnItemToTheGround

Use Case: DropAnItemToTheGround

Scope: LegendOfAndor

Level: Subfunction

Intention in Context: The intention of the Player is to drop an item to the ground

Primary Actor: Player

Multiplicity: Maximum 4 Players can drop an item to the ground concurrently.

Main success Scenario:

Player allows to drop an item to the ground at any-time.

1. Player informs the system that he wishes to drop an item to the ground (By click the region icon).
2. System opens the ground window for the user.
3. Player picks the item and drop it to the ground window.
4. System updates the game state.

Extensions:

3.a If the item is a falcon then System will show a warning and ends the use case.

4.a When one drops and an item, System creates an icon for instance lying on the ground.

CheckWhatIsOnTheGround

Use Case: CheckWhatIsOnTheGround

Scope: LegendOfAndor

Level: Subfunction

Intention in Context: The intention of the Player is check what is on the ground

Multiplicity: Maximum 4 Players can check what's on the ground concurrently.

Primary Actor: Player

Main success Scenario:

Player allows to check what is on the ground at any-time.

1. Player informs the system that he wishes to check item to the ground.
2. System opens the ground window for the user.
3. Player checks what is on the ground.
4. Player informs the system that he has already finish checking by clicking the error icon on the ground information board.
5. System closes the window.

ChangetheVolume

Use Case: ChangetheVolume

Scope: LegendOfAndor

Level: Subfunction

Intention in Context: The intention of the Player is to change the volume of the game

Multiplicity: Maximum 4 Players can change their volume at any time, each of them should have an individual game volume.

Primary Actor: Player

Main success Scenario:

Player is allowed to change the volume of the game at anytime

1. Player informs the system that he wishes to change the volume of the game.
2. System changes the volume according to user's choice.

Usefalcon

Use Case: Usefalcon

Scope: LegendOfAndor

Level: Subfunction

Intention in Context: The intention of the Player is to use a falcon to pass article to another player

Multiplicity: Maximum 4 Players use their falcon at the same time.

Primary Actor: Player

Secondary Actor: Other Players

Main success Scenario:

Player only allows to use his falcon when it is his turn.

1. Player informs the system that he wishes to use the falcon. (Which Player is the receiver and what article will be sent)
2. System checks if Player can use the falcon.
3. System informs receiver about the falcon.
4. The receiver informs System that he accepts the article sent by falcon.
5. System informs Players the trade has been made and new game state.

Extensions:

1a. If Player use the falcon to send a shield or a bow then the system informs a warning and ends the use case.

1b. If the receiver is in a fight then System informs a warning and ends the use case.

2a. System checks if the falcon's icon is grey, if it is grey then show a warning and end the use case.

(3-4)—a. Current Player informs the System that he wishes to cancel the proposed falcon trade.

(3-4)—a.1 System informs the chosen Players that the falcon trade has been cancelled. Use case ends in abandon.

5a. System updates the state of falcon after the trade, change the state of falcon to grey.

Usewineskin

Use Case: Usewineskin

Scope: LegendOfAndor

Level: Subfunction

Intention in Context: The intention of the Player is to use his wineskin

Multiplicity:Maximum 4 Players use wineskin at the same time.

Primary Actor: Player

Main success Scenario:

Player only allows to use his falcon when it is his turn.

1. Player informs the system that he wishes to use the wineskin. (And select the next region he wants to go)
2. System checks the state of the waterskin and updates the states of the wineskin.
3. System updates the new game states.

Extensions:

- 1.a.If Player is doing a move action, then System shows a warning and ends the use case.
- 1.b.If the chosen location is unreachable then System shows a warning and ends the use case.
- 2.a.1.If the waterskin is full, then System changes the icon to half-full. Continue at Step 3.
- 2.a.2.If the waterskin is half-full, then System changes the icon to empty. Continue at step 3.
- 2.a.3.If the waterskin is empty, then System shows a warning and ends the use case.

UseTelescope

Use Case: UseTelescope

Scope: LegendOfAndor

Level: Subfunction

Intention in Context: The intention of the Player

is to use his telescope

Multiplicity: Maximum 4 Players use their telescope at the same time.

Primary Actor: Player

Main success Scenario:

Player is allowed to use his telescope at any time except when he is moving.

1. Player informs System that he wishes to use the telescope. (And select the adjacent region and tokens he wants to discover)
2. System checks if it is available to use the telescope at selected region.
3. System updates the new game states.

Extensions:

- 1.a.If Player is doing a move action, then System shows a warning and ends the use case.
- 2.a.1.If the region Player selected is not adjacent, then System shows a warning and ends the turn.

UseMedicinalHerbs

Use Case: UseMedicinalHerbs

Scope: LegendOfAndor

Level: Subfunction

Intention in Context: The intention of the Player is to use the Medicinal Herb

Multiplicity: Only 1 player can use medicinal at each time

Primary Actor: Player

Main success Scenario:

Player only allows to use his Medicinal on his turn.

1. Player informs the system that he wishes to use the Medicinal Herb. (And select the which way he wants to use it)
 - If Player chooses to use the herb to do a free move, then he needs to select the next region he wants to go;
 - If Player chooses to increase his willpower, then continue of step 2.
 - If Player chooses to use herb during a fight, then UseHerb
2. System checks what was the Player's choice and updates the new game states
3. System removes any left herbs in Player's bag if there is any left.

Extensions:

- 1.a. If Player is doing a move action, then System shows a warning and ends the use case.
- 1.b. If it is not Player's turn, then System shows a warning and ends the use case.
- 1.c. If Player chooses an unreachable region, then System shows up a warning and ends the use case.

Store-Purchase

Use Case: Store-Purchase**Scope:** LegendOfAndor**Level:** Subfunction**Intention in Context:** Player's intention is to purchase an article or strength points from a merchant or a witch (i.e. a store).**Multiplicity:** Any number of eligible Players can make a purchase at the same time.**Primary Actor:** Player**Main Success Scenario:**

Player double-clicks on a store and then selects desired item(s), article(s) or number of strength points.

1. System validates Player's position (i.e. standing in same space as the store).
2. Player requests System to make a purchase.
3. System checks the availability of an item (i.e. limit on articles of the same type).
4. System checks if Player has sufficient funds (i.e. calls check funds subfunction).
5. System verifies if Player's bag has enough of space.
6. System creates items in Player's bag.
7. System updates Player's balance or Player's strength points.
8. System updates all open Store windows (i.e. if multiple players buy from the same place) with the new number of items and does nothing if Player bought strength points.

Extensions: 1.a. If Player does not stand in the same space as the store, System aborts request and displays an error message.

2.a. If multiple players request the same item, the System will accept the first Player to send the request.

3.a. If an item is no longer available (i.e. all items were bought), System ignored Player's actions on this

item.

4.a. If Player does not have sufficient funds, System displays error message to Player.

5.a. System displays error message to Player.

8.a. If Player bought last item and so no item of that type is available, System fades item's image and ignores any request to purchase it.

Check funds

Use Case: Check funds**Scope:** LegendOfAndor**Level:** Subfunction**Intention in Context:** Verify if a Player has sufficient funds to buy an item from a store.**Multiplicity:** System can check any number of players at the same time.**Primary Actor:** Player**Main success Scenario:**

Player requests to make a purchase by a double-click on corresponding icon.

1. System checks if Player has sufficient quantity of gold.
2. System accepts Player's request

Extensions:

1.a. System checks if Player has gemstones

1.b. System verifies if gold combined with gemstones' value will allow Player to make a purchase.

1.b.a. System displays an error message to Player otherwise.

1.c. System requests Player's approval to use gemstones as gold

1.c.a. System aborts Player's request if Player refuse to use gemstones.

1.d. System accepts Player's request.

Trade between Players

Use Case: Trade between Players**Scope:** LegendOfAndor**Level:** Subfunction**Intention in Context:** Perform a trade between two players standing on the same spot.

Multiplicity: Any number of exclusive pairs of Players can perform this action at the same time.

Primary Actor: Player

Main success Scenario:

Player requests System to start a trade with another Player by clicking on this Player's icon in the bottom right corner.

1. System accepts Player's request.
2. System displays for each Player a window of their bag and another empty one.
3. Player informs System by dragging desired items in the empty bag.
4. System verifies if receiving Player's bag has enough space to receive items.
5. System waits confirmation of both Players.
6. System removes item from its original space and creates it in the bag of receiving Player.

Extensions:

- 4.a. If the bag is full, System verifies if the exchanged objects of a Player are of the same type (i.e. one can take place of another)
 - 4.a.a System displays an error message to the Player.
- 4.b. System accepts the trade request from the Player.
- 5.a. If Players decide to not trade, System returns objects on their initial place in each Player's bag and closes trade window.

Trade Using Falcon

Use Case: Trade Using Falcon

Scope: LegendOfAndor

Level: Subfunction

Intention in Context: Perform a trade between two players that does not stand on the same spot.

Multiplicity: Any number of exclusive pairs of Players can perform this action at the same time.

Primary Actor: Player

Main success Scenario:

Player requests System to trade objects by clicking on Player's icon on the map and then by clicking on falcon.

1. System verifies if Player's falcon has been used today (i.e. verifies falcon status).
2. System displays a pop-up window where Player

drags items to trade.

3. System verifies if Player's objects can be sent by a falcon.

4. System verifies if receiving Player has enough space in the bag.

5. Player sends their confirmation to the System.

6. System accepts the request, deletes item(s) from sending Player's bag, and creates them in receiver's bag.

7. System changes falcon status to unavailable for the rest of the day.

Extensions:

- 2.a. If Player wants to receive something from another Player, they leave their bag empty, click the confirm button, and thus send confirmation to the System.
- 2.b. System executed steps 2 to 7 for the second Player.
- 3.a. System displays an error message to Player.
- 4.a. System displays an error message to Player.

EndTheDay

Use Case: EndTheDay

Scope: LegendOfAndor

Level: Subfunction

Intention in Context: The player wants to end his day so no action will be performed before the new day starts.

Multiplicity: Only 1 player can make this action at each turn.

Primary Actor: Player

Main success Scenario:

1. Player informs System that he wants to end his day.
2. System informs all Players about the new game state. (current Player goes to the golden roaster)

PassYourTurn

Use Case: PassYourTurn

Scope: LegendOfAndor

Level: Subfunction

Intention in Context: The player wants to pass his turn.

Multiplicity: Only 1 player can make once action at

each turn.

Primary Actor: Player

Main success Scenario:

1. Player informs System that he wants to pass his turn.
2. System informs all Players about the new game state. (current Player advances 1 hour)

Extensions:

- 2a. System informs Player that he needs to use willpower to advance 1 hour
 - 2a.1 Player informs System that he wants to use willpower to advance. Use case continues at step 2.
 - 2a.2 Player informs System that he does not want to use willpower and performs EndTheDay.

3 Subsubfunction Level

GameLobby

Use Case: GameLobby

Scope: LegendOfAndor

Level: Subsubfunction

Intention in Context: The intention of the Player is to prepare for the upcoming game.

Multiplicity: 4

Primary Actor: Player

Main success Scenario:

1. Players choose distinct heroes.
2. Player informs System she is ready to start the game.
3. System starts game when all players are ready and the Creator confirms to start the game.

Extensions:

- 2a. If Player is inactive for too long, Creator can kick him out of the GameLobby.

Distribute Gold and Wineskin

Use Case: Distribute Gold and Wineskin

Scope: LegendsOfAndor

Level: Subsubfunction

Intention in Context: The system wants to collectively redistribute 5 gold and 2 wineskins at the beginning of the game.

Multiplicity: From two to four Players participate in redistribution at the same time.

Primary Actor: Player

Main success Scenario:

At the beginning of the game, System displays to each Player the same screen showing images of gold, wine-skin and other Player's choice.

1. Player informs System of their choice by selecting with arrows the desired number of each item that they want and by clicking the confirm button.
2. System updates the status of each item and updates each Player's icon by indicating the number of each item they have selected.
3. System keeps displaying the screen to each Player until all of the Players clicked the confirm button or decline button.
4. System updates Players bags if it is necessary.

Extensions:

- 1.a. If a Player tries to take more items that are currently available, System displays an error message to the Player.
- 3.a. If at least one Player disagrees with the decision, System will set everything to its initial state. The use case continues from step 1

StartFight

Use Case: StartFight

Scope: LegendOfAndor

Level: Subsubfunction

Intention in Context: The Fighters want to fight with Monsters to save the legend and to gain reward from Monsters.

Multiplicity: The system allows 1 main Fighters to initiate the fight and maximum of 3 co-operative Fighters in a fight. Each fighter will have a maximum of 4 Fighters and at least 1 Fighter to start the fight.

The system allows 1 main Fighters to initiate the fight and maximum of 3 co-operative Fighters in a fight.

Primary Actor: Main Fighter, Co-operative Fighter

Secondary Actor: Monster

Main success Scenario:

The hero except for Archer needs to walk into the same block as Monsters, and the Archer can either stay in the same block or in the adjacent block.

1. The main Fighter, when it is his turn, double-clicks on the Monster to inform the System that he wants to initiate a fight.
2. System displays a pop-up to ask confirmation from main Fighters for initiating the fight.
3. Any co-operative Fighter near the fighting, receives a pop-up window from system. If he confirms, he joins in the fight.
4. System advances each Fighter by one hour.
5. System informs Monster the fight and loads the fighting scene for Fighters who are in the fight.
6. Fighters inform System if he wants to attack the Monster in 3 minutes.
7. When Fighters finish attacking, System will inform the Monsters to attack Fighters.
8. After each round, System informs each Fighter if he win or lose a fight.
9. The system requests Fighters to decide if he wants to continue the fight, which will repeat steps 4 to 9, or leave the fight, which the 11. system will load the map scene for the Fighter, and uses case ends. System restores the willpower of Monsters but does not restore willpower or used equipment for Fighters.

Extensions:

- 1a. Fighter fails to initiate the fight because he used at least 7 hours, at most 9 hours of the day: System asks if he wants to use willpower in change of fighting with Monster for one round.
- 1b. Fighter fails to initiate the fight because he used 10 hours of the day: System will pop-up a warning, and the use case ends.
- 2a. The main fight canceled the fight: the use case ends
- 3a. The co-operative does not accept or cannot accept the invitation: system will not load the fighting scenes for them.
- 5a. The fight might take too long time to inform the system: the system automatically runs the attack Monster use case for a Fighter.
- 6a. The Monster's willpower is equal or less than zero at this moment: System skips step 6 and run step 7.

Move

Use Case: Move**Scope:** LegendOfAndor**Level:** Subsubfunction**Intention in Context:** The player wants to move to a different location on map.**Multiplicity:** Only 1 player can make this action at each turn.**Primary Actor:** Player**Main success Scenario:**

1. Player informs System about which block he wants to set as destination.
2. System displays Player a shortest path to the destination block.
- Steps 3, 4 can be skipped or repeated in sequence
3. Player informs System about which block he wants to pass by.
4. System displays Player the updated path.
5. Player Confirms to move with System.
6. System informs all Players about the new game state.

Extensions:

- 6a. System informs the player that he does not have enough hours. Use case continues at step 1.
- 6b. System informs the player that he needs to use willpower to get to the destination.
- 6c. Player informs system that he wants to use willpower to advance. Use case continues at step 2.
- 6d. Player informs System that he does not want to use willpower. Use case continues at step 1.

4 SubsubsubFunction Level

ChooseCharacters

Use Case: ChooseCharacters**Scope:** LegendOfAndor**Level:** Subsubsubfunction**Intention in Context:** Players want to choose a character with corresponding abilities that they want to have in the game.**Multiplicity:** 2-4 (depending on the game setting in a specific game)

Primary Actor: Players who are currently in the same game room

Main success scenario:

1. System checks the remaining characters that are still available to be chosen.
2. Players checks the characters' ability and discuss with other players in the chat to make a decision.
3. Players choose their desired characters by clicking on one of the character images. Players can change their choice by repeating this step.
4. Players confirms their choice by clicking ready.
5. System processes each Player's character data. Choice cannot be changed from now on.

Extensions:

- 3a. Players fails to choose a character that is already chosen. Use case continues at step 3

power, and additional damage. If there are multiple Fighters in the fighting, the system will add up each Fighter's damage and get the total damage. 3. System subtracts the damage caused by Monster from fights' damage. If the result is less or equal than zero, the Monster does not have to take the damage. Otherwise, the system will inform the Monster the damage he needs to take.

4. Monster informs System he wants to update states.
5. System updates the game state and informs the Fighters of the damage he caused.

Extensions:

- 1a. Fighters want to use one of the powers, but failed to use because of unallowed time to use: system will display a pop up to warn the fighter that he cannot use the power.

AttackMonster

Use Case: AttackMonster

Scope: LegendOfAndor

Level: Subsubsubfunction

Intention in Context: The Fighters want to cause damage on the Monster, and finally defeat the Monster. After Fighters perform its actions, the Monster needs to take the damage. The system can handle one Monster in one battle to take damage. In each round, a Monster only will take once damage.

Multiplicity: The system can handle at most four Fighter in a round. Each player only allow to attack once in a round.

Primary Actor: Fighter

Secondary Actor: Monster

Main success Scenario:

The hero who initiate the fight will attack first, the following orders depends on the order of Fighters joining game.

1. Current Fighter informs the system to roll all the dice to have damage range of 1 to 6 with immediate chooses of usages of the black dice, the magic power, the witch's brew, the helm, and the medical herb.
2. System determines the effect of the equipment following the above order and calculates the additional damage. System calculates the final damage by adding the largest number among rolled dice, hero's strength

TakeDamage

Use Case: TakeDamage

Scope: LegendOfAndor

Level: Subsubsubfunction

Intention in Context: The Monsters want to cause damage on the Fighters, and finally defeat the Fighter. Monster performs its actions, the hero needs to take the damage.

Multiplicity: The system can handle at least one hero, and at most four heroes to take damage. In each round, a hero only will take once damage. The system can handle one Monster's attack at one time and multiple Fighters in a round. Each Monster only allow to attack once in a round.

Primary Actor: Fighter

Facilitator Actor: Hero Information Panel

Main success Scenario:

After Fighters perform the attack, the Monster will attack.

1. The current Monster informs System to roll all the dice. System calculates the damage by adding the damages from rolling dice with Monster's strength power.
2. After Monster performs the attack, system informs Fighters to take damage.
3. System subtracts the total damage caused by Fighter from Monster's damage. If the result is less

or equal than zero, the Fighter does not have to take the damage. Otherwise, the system will inform each Fighter the damage he needs to take.

4. Each Fighter at this moment chooses to use the shield and informs system by clicking the corresponding button.

5. System calculates the final damage taken by each Fighter and inform each Fighter.

6. Fighter informs System he wants to update the hero information panel.

7. Hero Information Panel will update and informs System that update has finished.

Extensions:

2a. If hero wants to use shield or the helm but currently the corresponding button is not clickable: System will not run use the shield or use the helm use case.

WinOrLoseFight

Use Case: WinOrLoseFight

Scope: TheLegendOfAndor

Level: Subsubsubfunction

Intention in Context: After each round, the system wants to check the result of the fight.

Multiplicity: The system can check at most four heroes' result.

Primary Actor: Fighter

Facilitator Actor: Hero Information Panel

Main success Scenario:

1. System checks each hero information panel and Monster information panel. Fighters will win if the Monster has will-powers less than or equal to zero. Fighters will lose if all the heroes has will-powers less than or equal to zero.

2. After checking, the system informs Fighters and Monsters who win or lose.

3. System loads the win or lose panel for Fighters.

4. System informs Fighters the total reward and heroes can distribute reward freely via communication.

5. Fighters inform system that confirm on the distribution of reward or acceptance on penalties in three minutes.

6. System loads the map scene for Fighters: the defeated Monster will be moved to block 80 and the nar-

rator advanced 1 hour.

Extensions:

1a. If neither Monster or Fighter has will-power less than or equal to zero, the system ends the use case. The system will ask each Fighter if he wants who continue to fight or leave the fight.

1b. If one of the heros in the fighting has a willpower less than or equal to zero and Monster does not lose, the system will inform him that he lose the fight, but since there are other Fighters in the fighting, the fight continues. For the hero who loses the fight, the system will prevent him from joining the battle.

4a. If a hero not in the last round in the fight: system will not load the win board for him and do not inform him to take the reward.

5 SubsubsubsubFunction Level

RollDice

Use Case: RollDice

Scope: LegendOfAndor

Level: Subsubsubsubfunction

Intention in Context: The Fighters or Monsters will want to cause damage on the opponents by rolling the dice.

Multiplicity: The system can handle one Fighter or one Monsters at a time. Each Fighter, or Monster is allowed to roll only once in a round.

Primary Actor: Fighter, Monster

Main success Scenario:

System informs the Fighter to roll the dice.

1. Current Fighter or Monster informs the System that he wants to roll the dice by clicking on the dice objects.

2. System generates random numbers for each dice according to the color of the dice. Gors, skrals, and trolls roll with red dice; wardraks roll black dice.

3. System informs Fighter or Monster the rolling result by displaying a number on dice.

Extensions:

2a. If there are two same number dice when Monster rolled the dice: System will inform Fighters in the fight that they need to take more damage, and calculate the damage by adding all the same number dice and the

Monster's strength power.

2b. If the occupation of Fighter is Archer, he is allowed to roll the dice one by one: Fighter will roll the dice until he wants to stop or he uses all the dice, informing the system on the dice number at stopping time. System will incorporate the number at the stop time into calculating the damage.

UseBlackDice

Use Case: UseBlackDice

Scope: LegendOfAndor

Level: Subsubsubsubfunction

Intention in Context: When attacking the Monster, the Fighter wants to increase the damage he caused to defeat the Monster.

Multiplicity: The system can handle at most four heroes' request in each round, a hero can use black dice once in each round.

Primary Actor: Fighter

Main success Scenario:

After Fighters roll the dice, he has the chance to decide if he wants to use black dice.

1. System checks if the black dice can be used. If yes, the system will inform Fighter that he can use the black dice by lighting the button for black dice.
2. The Fighter informs system by clicking the black dice button.
3. The system informs Fighter a number of 6, 6, 8, 10, 10, 12, and add the number to the final damage the hero cause.
4. System informs Fighter that he has already use the balck dice.

Extensions:

- 1a. If hero wants to use the black dice but currently the corresponding button is not clickable: System will warn the Fighter and end the use case.

UseMagic

Use Case: UseMagic

Scope: LegendOfAndor

Level: Subsubsubsubfunction

Intention in Context: When attacking the Monster, the wizard has the special ability, he wants to use this ability to increase the damage to defeat the Monster.

Multiplicity: The system can handle at one wizard's request in each round, a wizard can use magic once in each round.

Primary Actor: Wizard(One of the Fighters)

Main success Scenario:

After Fighters roll the dice, wizard has the chance to decide if he wants to use the magic.

1. After a Fighter rolls the dice, System checks if wizard can use the magic in this round. If yes, System will inform wizard that he can use the magic by lighting the button for magic.
2. Wizard informs System that he want to use the dice.
3. System informs Fighter that his dice was inverted to the opposite site.
4. System informs Fighter that his final damage.
5. System informs wizard that he has already used the magic and he cannot use magic in this round .

Extensions:

- 3a. If the wizard does not want to use the magic: Wizard will inform system that he does not want to use the dice, and the use case ends.

UseBrew

Use Case: UseBrew

Scope: LegendOfAndor

Level: Subsubsubsubfunction

Intention in Context: When attacking the Monster, the Fighter wants to increase the damage he caused to defeat the Monster.

Multiplicity: The System can handle one hero request of using brew at a time, a hero can use brew once in each round.

Primary Actor: Fighter

Main success Scenario:

After Fighters roll the dice, he has the chance to decide if he wants to use the witch's brew.

1. System checks if a Fighter can use the brew in this round. If yes, the system will inform the Fighter that

he can use the witch's brew by lighting the button for brew.

2. Fighter informs system by clicking the witch's brew button.

3. System doubles the current damage, and informs the Fighter the final damage.

4. System informs Fighter that he has already use the brew, and reduces the brew to a half if it is full bottle before. If the brew is already used to half, the system removes the witch's brew from the bag of Fighter.

Extensions:

1a.1 If hero wants to use the black dice but currently the corresponding button is not clickable: System will warn the Fighter and end the use case.

1b. If hero use helm, he cannot use the witch's brew: system inform the Fighter the warning and the use cases.

UseHelmet

Use Case: UseHelmet

Scope: LegendOfAndor

Level: Subsubsubsubfunction

Intention in Context: Monster performs its actions, the hero wants to increase the damage. **Multiplicity:** The system can handle one hero's request to use helm. In each round, a hero only uses once the helm.

Primary Actor: Fighter

Main success Scenario:

After Fighters roll the dice, he has the chance to decide if he wants to use the helm.

1. System checks if a Fighter can use the helm in this round. If yes, the system will inform the Fighter that he can use the helm by lighting the button for helm.

2. Fighter informs system by clicking the helm button.

3. System adds up all identical number of dice, and inform the Fighter the final damage.

4. System informs Fighter that he has already use the helm.

Extensions: 1a. If Fighter wants to use the helm but currently the corresponding button is not clickable: system will warn the Fighter and end the use case.

1b If Fighter use brew, he cannot use the helm: system

end the use cases.

1c. If Fighter is archer or wizard, the helm is useless: system end the use case.

UseHerb

Use Case: UseHerb

Scope: LegendOfAndor

Level: Subsubsubsubfunction

Intention in Context: Monster perform its actions, the hero need to take the damage.

Multiplicity: The system can handle one hero's request to use herbs. In each round, a hero only use once herbs. .

Primary Actor: Fighter

Main success Scenario:

After Fighters roll the dice, he has the chance to decide if he wants to use the medicinal herb.

1. System checks if a Fighter can use the herb in this round. If yes, the system will inform the Fighter that he can use the herb by lighting the button for herb.

2. Fighter informs system by clicking the herb button.

3. System informs Fighter by showing a pop-up window on how much a Fighter can gain from the herb and asks Fighter to choose if he wants to increase the willpower or the damage.

4. System adds up the power provided by herb, and informs the Fighter the final damage or the final willpower.

5. System informs Fighter that he has already use herbs and cleans all the herb in fighter's bag.

Extensions:

1a. If hero wants to use the herbs but currently the corresponding button is not clickable: system will warn the Fighter and end the use case.

UseShield

Use Case: UseShield

Scope: TheLegendOfAndor

Level: Subsubsubsubfunction

Intention in Context: Monster perform its actions, the hero need to take the damage.

Multiplicity: The system can handle at least one hero, and at most four heroes to take damage. In each

round, a hero only will take once damage.

Primary Actor: Fighter

Main success Scenario:

After the system informs Fighter to take damage, the Fighter can choose to use the shield.

1. System checks if a Fighter can use the shield in this round. If yes, the system will inform the Fighter that he can use the shield by lighting the button for shield.
2. Fighter informs system by clicking the shield button.
3. System sets the Monster's damage to zero, and informs the Fighter the final damage.
4. System informs Fighter that he has already use shield and remove the shield if the shield was damaged or set the shield to damaged state.

Extensions: 1a. If hero wants to use shield but currently the corresponding button is not clickable: System will not run use the shield or use the helm use case.

DistributeReward

Use Case: DistributeReward

Scope: TheLegendOfAndor

Level: Subsubsubsubfunction

Intention in Context: After Fighters win the fight, Fighters want to distribute the rewards

Multiplicity: The system can allow at most 4 Fighters.

Primary Actor: Fighter

Facilitator Actor: Distribute Panel

Main success Scenario:

The system loads the distribute panel for fighters who are in the final fighting round.

1. System informs the Fighter how many rewards they are going to distribute.
2. Each Fighter informs the system the amount of the rewards they are going to take.
3. Each Fighter informs the system that he confirms on distribution of rewards.
4. System informs the Fighter the rewards have been taken.