



Foundations of Software Engineering

Use Case Specification

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## Set of Use Cases

### Introduction

The below set of use cases illustrates the vision of the gameplay and indicate the rules and constraints along with alternate case scenarios for the game of Clue-Less.

### Use Case 1 - Player Joins a Game

Use Case 1 - Player Joins a Game		
Description	User connects and joins a game	
Trigger	A client establishes a connection with the server	
Actors	User	
Pre-conditions	Clue-Less server is up and running The maximum capacity of games on the server (100) hasn't been reached The user has created an account	
Post-conditions	A minimum of two players have joined A maximum of six players have joined	
Assumptions	The user has the necessary software installed on the client	
	Actor Actions	System Actions
Success Scenario	1) Client connects to the server 3) User enters account information 5) User specifies to join a lobby to wait for more players or to quit	2) Server accepts connection 4) Server accepts user information 6) Server places user in lobby and shows which users are in that lobby 7) When required users join, the server starts a game
Alternate Scenario	1-Alt) Client cannot connect to server	2-Alt) Server refuses client connection 4-Alt) User account not found on server - server sends informational error to user to either re-enter information or create new account

**Use Case 2 - Player Leaves a Game**

Use Case 2 - Player Leaves a Game		
Description	Player leaves the game before the game is over	
Trigger	The player sends a command to quit	
Actors	User	
Pre-conditions	An update message is sent to all clients The user interface is updated and refreshed	
Post-conditions	The game continues if there is more than one player left after the player quits If there is only one player remaining after the player quits, that player wins the game	
Assumptions	There is a minimum of one other player on the game	
	Actor Actions	System Actions
Success Scenario	1) User sends the quit command 3) The user quits the lobby and disconnects from the server	2) Server accepts the quit command and removes the player from the game and is sent to the lobby
Alternate Scenario	1-Alt) User disconnects from the server without quitting the game - the server removes the player from the game	2-Alt) The server refuses the quit command – the server sends an informational error that the player is unable to leave the game

**Use Case 3 - Player Makes a Move to a Hallway**

Use Case 3 - Player Makes a Move to a Hallway		
Description	A player is moved to a hallway from an adjacent room	
Trigger	A user requests a move to a hallway from an adjacent room	
Actors	Player	
Pre-conditions	There's no other player in the hallway the player intends to move to (it's not being blocked)	
Post-conditions	An update message is sent to all clients The user interface is updated and refreshed	
Assumptions	It's the player's turn The hallway isn't blocked	
	Actor Actions	System Actions
Success Scenario	1) The player requests a move to a specific hallway	2) The server receives the move request 3) The server verifies there is no one present at the hallway 4) The server moves the player to the requested hallway 5) An update is sent to all players
Alternate Scenario		2-Alt) The server doesn't receive a move request - the user is notified of its time remaining and once the maximum time of 2 mins per turn is reached, the user's turn is skipped 3-Alt) There is another player present in that hallway - the user is notified that the move cannot be performed and requests another move

**Use Case 4 - Player Makes a Move to a Room**

Use Case 4 - Player Makes a Move to a Room		
Description	A player is moved to a room	
Trigger	A user requests a move to a room	
Actors	Player	
Pre-conditions	The player must be located in a hallway adjacent to the room	
Post-conditions	An update message is sent to all clients The user interface is updated and refreshed	
Assumptions	It's the player's turn The player is in a hallway adjacent to the room	
	Actor Actions	System Actions
Success Scenario	1) The player requests a move to a specific room	2) The server receives the move request 3) The server verifies the player's location is next to the requested room 4) The server moves the player to the requested room 5) An update is sent to all players
Alternate Scenario		2-Alt) The server doesn't receive a move request - the user is notified of its time remaining and once the maximum time of 2 mins per turn is reached, the user's turn is skipped 3-Alt) The user isn't located next to the requested room - the user is notified that the move cannot be performed and requests another move

**Use Case 5 - Player Makes a Move Through Secret Passage**

Use Case 5 - Player Makes a Move Through Secret Passage		
Description	A player is moved to a room through a secret passage	
Trigger	A user requests a move to a room via the secret passage	
Actors	Player	
Pre-conditions	The player must be located in a room with a secret passage The player is presented with the "Move Through Secret Passage" option	
Post-conditions	An update message is sent to all clients The user interface is updated and refreshed	
Assumptions	It's the player's turn The user is located in a room with a secret passage	
	Actor Actions	System Actions
Success Scenario	1) The player requests a move to a specific room via the secret passage	2) The server receives the move request 3) The server verifies the room has a secret passage 4) The server moves the player to the requested room 5) An update is sent to all players
Alternate Scenario		2-Alt) The server doesn't receive a move request - the user is notified of its time remaining and once the maximum time of 2 mins per turn is reached, the user's turn is skipped 3-Alt) The room doesn't have a secret passage - the user is notified that the move cannot be performed and requests another move

**Use Case 6 - Player Makes a Suggestion**

Use Case 6 - Player Makes a Suggestion		
Description	A player makes a suggestion towards another player	
Trigger	The player makes a suggestion	
Actors	Player	
Pre-conditions	The player is presented with the "Make a Suggestion" option The player can only suggest the room (s)he is currently located at	
Post-conditions	An update message is sent to all clients The user interface is updated and refreshed	
Assumptions	It's the player's turn The suggestion is false/incorrect The server knows the room, therefore, won't ask the player for it	
	Actor Actions	System Actions
Success Scenario	1) The player chooses to make a suggestion 4) The player chooses a suspect and weapon	2) The server receives the suggestion 3) The server asks for a suggested suspect and weapon 5) The server verifies the chosen suspect and weapon are in the current room 6) The server sends the suggestion to each player to verify if false 7) If false, the server notifies the user and moves on to the next player's turn. If not proven false, the server asks the player to end turn or make an accusation. 8) An update is sent to all players



Alternate Scenario		<p>5-Alt) The chosen suspect or weapon aren't in the room - the user is notified that the suggestion cannot be performed and requests another suggestion or end of turn</p> <p>6-Alt) One of the other players doesn't respond - the player is notified of its time remaining and once the maximum time of 2 mins is reached, the player's turn is skipped</p>
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### Use Case 7 - Player Makes an Accusation

Use Case 7 - Player Makes an Accusation		
Description	A player makes an accusation and either wins or is skipped thereafter	
Trigger	The player makes an accusation	
Actors	Player	
Pre-conditions	The player is presented with the "Make an Accusation" option	
Post-conditions	<p>An update message is sent to all clients</p> <p>The user interface is updated and refreshed</p> <p>If the accusation is true, the accuser wins and the game ends. If the accusation is false, the user is skipped thereafter but can still move the player's piece and participate in other's suggestions</p>	
Assumptions	It doesn't have to be the player's turn; the player can accuse at anytime	
	Actor Actions	System Actions

Success Scenario	<p>1) The player chooses to make an accusation</p> <p>4) The player chooses a suspect, room and weapon</p>	<p>2) The server receives the accusation</p> <p>3) The server asks for the accused suspect, room and weapon</p> <p>5) The server notifies all the users that an accusation has been made.</p> <p>6) The server verifies the chosen suspect, room and weapon are the correct ones</p> <p>7) If false, the server notifies the all users, the user is skipped, and moves on to the next player's turn. If correct, the accuser wins the game, all players are notified, and the game is over (all players are sent to the lobby)</p> <p>8) An update is sent to all players</p>
Alternate Scenario		<p>6-Alt) The server can't verify the accusation - the server will retry every 5 seconds and notify all users if the operation can't be performed after ten attempts, in which, case the players will be sent to the lobby</p>