Use Cases for the Yahtzee Game

UC-01	Player Plays Yahtzee
Description	This use case describes when a new Yahtzee game is started.
Actors	Player, System
Triggering Event	Start of a new Yahtzee Game
Pre-Condition	Game Loaded Successfully
Main Sequence	1. Player selects to play the game with 1-5 players 2. 1-5 player select a valid game name 3. 1-5 players plays a game 4. System adds the score of each player's game to their game total 5. Steps 3-4 are repeated 5 times 6. System reports the game total of each player to the respective player
Post-Condition	A Game is played and the score recorded.
Resulting Event	Yahtzee Game Ends

Alternative Scenarios	***Player plays the game with 2-5 players***
	Player decides to play the game with another player
	1. System decides the turn order for the players
	    a. Each player throws a die that has a value between 1 and 6
	    b. The Player with the highest die value goes first, the second highest next and so on. If two players throw the same die value then their order is determined arbitrarily.
	
	2. System informs players of their turn order.
	
	Player plays the game with 2-5 players and the game ends
	
	1. System compares 2-5 players game total and decides a winner for the entire game.
	    a. The player with the highest score is selected as the winner
	    b. System announces the winner and their score to the rest of the players

NFRs	Players cannot view other players' game scores; they can only see the winner's score. A valid game name consists of only letters and is not taken by another player.
Comments	

UC-02	Player Plays a Game
Description	This use case describes the scenario of a player playing a game
Actors	Player (s), System
Triggering Event	Start of a new game
Pre-Condition	Player has selected their name and the order of their turn
Main Sequence	1. System creates a score sheet for each player 2. 1-5 players play a turn in the game according to their turn order 3. The above step is repeated 12 more times 4. System adds the scores from each player's score sheet and creates a total game score for each player a. If the total score of the upper section in a score sheet is greater than or equal to 63, then 35 points is added to the total score of the game 5. System reports the total of each score sheet to their corresponding player
Post-Condition	A game has been scored
Resulting Event	Game Ends
Alternative Scenarios	***1-5 players play more than 13 turns*** Player tries to play the 14th turn in a game and receives an error message, informing them that the game has ended. ***Total Score of Upper Section is more than 63*** Player scores more than 63 points in the Upper Section of the score sheet: 1. System adds 35 points to the total game score for the player 2. System reports game score to the player
NFRs	Each player has their own score sheet for the game and cannot access the score sheet of another player. All players must complete a turn in the game before anyone can play the next turn.
Comments	

UC-03	Player Plays a Turn
Description	This use case describes the steps of a player playing a turn in a game
Actors	Player
Triggering Event	Start of a new game or end of another turn in a game
Pre-Condition	Player has scored their previous turn if this turn is not part of a new game.

Main Sequence	1. Player rolls five dice
	    a. System verifies that each dice displays a value between 1 and 6
	2. Player chooses to roll the dice again or proceed to step 3.
	    a. Player chooses to hold 0 or more dice
	    b. Player rolls all un-held dice
	        i. System verifies that each un-held dice displays a value between 1 and 6
	    c. Player goes to Step 3 if they have rolled the dice 3 times (total) and they go to Step 2 if they have not.
	3. Player scores in a scoring category that has not yet been scored
	    a. System validates the player's score

Post-Condition	A category is scored in the scoring sheet of the game
Resulting Event	Player turn ends
Alternative Scenarios	***Player enters an invalid score in a scoring category*** Player scores in a category that they cannot (i.e. don't have the dice values) or they have entered an invalid score in a scoring category 1. Player jumps to Step 3. ***Die in a roll has a value that is not between 1 and 6*** 2. Roll becomes invalid and does not count towards the 3 rolls 3. Player rolls the dice again
NFRs	Players cannot change their score once they have scored in a category unless their score is invalid. Players can only score in **<u>one</u>** category (i.e. they cannot score in two categories when the values of the dice allow; they need to pick a category to score).
Comments	