Especificación de requerimientos, Tarea Integradora I.

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<table>
<tr><td>Name or identifier</td><td colspan="3">R1: Game board creation.</td></tr>
<tr><td>Abstract</td><td colspan="3">The system asks the user for the number of rows, columns, snakes and ladders to create the board and start the game.</td></tr>
<tr><td rowspan="5">Inputs</td><td>Input name</td><td>Datatype</td><td>Selection or repetition condition</td></tr>
<tr><td>Number of columns.</td><td>int</td><td></td></tr>
<tr><td>Number of rows.</td><td>int</td><td></td></tr>
<tr><td>Number of snakes.</td><td>int</td><td></td></tr>
<tr><td>Number of ladders.</td><td>int</td><td></td></tr>
<tr><td>General activities</td><td colspan="3">1. Verify the information entered.
2. Create the game board with the entered column and row size using a doubly linked list.
3. Locate the number of snakes and ladders randomly on the previously created board with the following restrictions:
3.1. Verify that no straight is located in the first square.
3.2. Verify that no snake is located in the first and last square.
3.3. Verify that no start or end of a ladder or snake coincides with another.
4. Start the game.
1. 5. Show the created board.</td></tr>
<tr><td>Result or postcondition</td><td colspan="3">Game board and created and started.</td></tr>
<tr><td rowspan="2">Outputs</td><td>Output name</td><td>Datatype</td><td>Selection or repetition condition</td></tr>
<tr><td>Printed board</td><td>String</td><td></td></tr>
</table>

Name or identifier	R2: Show board.		
Abstract	The system prints the current game board with the current position of the players square.		
Inputs	Input name	Datatype	Selection or repetition condition
	Player position	Square	Player must be on an existing square.
General activities	1. Take the current game board. 2. Validates that the players are in a position on the board. 2. 3. Print the board with the current position of each player.		
Result or postcondition	The board printed with the current position of the players.		
Outputs	Output name	Datatype	Selection or repetition condition
	Printed board	String	

Name or identifier	R3: Define shifts.		
Abstract	The system identifies the three players to give them a consecutive order of turns until one reaches the end of the game.		
Inputs	Input name	Datatype	Selection or repetition condition
	Current players	player	
General activities	1. Validate the information of the players. 2. Define a sequential order of the three players. 1. 3. Print the player with the current turn using the previous one as a reference.		
Result or postcondition	Define the player of the current turn.		
Outputs	Output name	Datatype	Selection or repetition condition
	player with current turn.	player	

Name or identifier	R4: Throw the dices.		
Abstract	The system randomly chooses a number between one and six, which will be the number of squares the player will advance on the board.		
Inputs	Input name	Datatype	Selection or repetition condition
	Current player	player	
General activities	1. The system validates that it is the current turn. 2. Give a random number between 1 and 6. 3. Save the number in the player's current turn. 1. 4. Returns the integer of squares that the player advances.		
Result or postcondition	Number of squares advanced.		
Outputs	Output name	Datatype	Selection or repetition condition
	Advance number	int	

Name or identifier	R5: Move player.		
Abstract	The system moves the player depending on the number when rolling the dice, if the player falls on a ladder he advances, if he falls on a snake he goes back and if it is a normal square he stays there.		
Inputs	Input name	Datatype	Selection or repetition condition
	Player position	square	The player is in an existing position.
	Dice number	int	Between one and six.

General activities	1. Validates the information received. 2. The system moves the player the number of spaces indicated on the dice. 3. Check if there is a ladder in the position in which he advanced, if there is one the player advances to the end of the ladder, if there is no ladder he stays in the square he was in. 4. Check if there is a snake in the position in which he advanced, if there is one the player is delayed until the end of the snake, if there is no snake he stays in the square he was in. 5. Returns the position in which the player finally stays.		
Result or postcondition	Square in which the player stays.		
Outputs	Output name	Datatype	Selection or repetition condition
	final position of the player.	square	

Name or identifier	R6: Show ladders and snakes.		
Abstract	The system prints the game board but without the number of the squares, it prints where the ladders and snakes of the game start and end.		
Inputs	Input name	Datatype	Selection or repetition condition
	Ladders positions	square	Previous creation.
	Snakes positions	square	Previous creation.
General activities	1. The system verifies the information it receives. 2. The system locates the ladders and snakes with the information received. 3. The system prints the previously created board but only with the ladders and snakes.		
Result or postcondition	Screen printed ladders and snakes.		

Outputs	Output name	Datatype	Selection or repetition condition
	Printed board	String	Previously created dashboard.

Name or identifier	R7: Calculate and show score table.		
Abstract	The system takes the time in seconds from the start of the game to the moment the players reach the end, the score is calculated and a score table is displayed.		
Inputs	Input name	Datatype	Selection or repetition condition
	Game time in seconds.	int	
General activities	1. Verify the information entered. 2. Calculate for each player his score using the score formula. 3. Organize the results in an ordered table from the highest score to the lowest. 4. Print the results table.		
Result or postcondition	Table of scores printed to the user.		
Outputs	Output name	Datatype	Selection or repetition condition
	Table of scores.	String	