

Course Project: Developing Two Players Game in Either CLIPS or Prolog

I have developed a game called "The Lucky Rabbit Game". To start playing, the first thing you should do is choose the names of the players. You can make a game for 2,3 or 4 players, you choose.

The game is developed using SWI-Prolog and XPCE. Here, SWI prolog for the main implementation and XPCE is the tool for graphical applications development in Prolog.

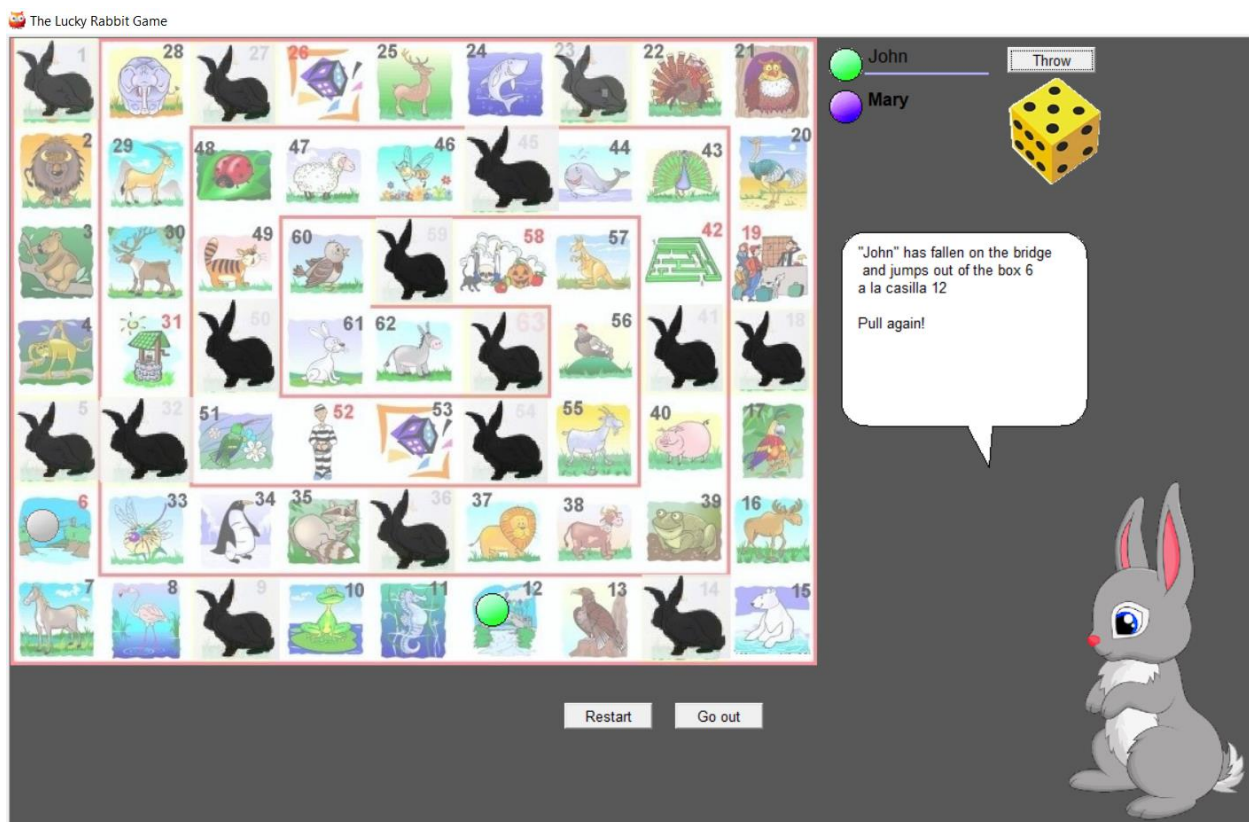
• The Game Story

This concept basically strike me from the story of the tortoise and rabbit, where lazy rabbit though fast falls asleep and loses the match, whereas the slow tortoise wins the race. Similarly, this is a game story where the players (rabbits) compete among each other to reach a particular goal and the lucky one wins the battle.

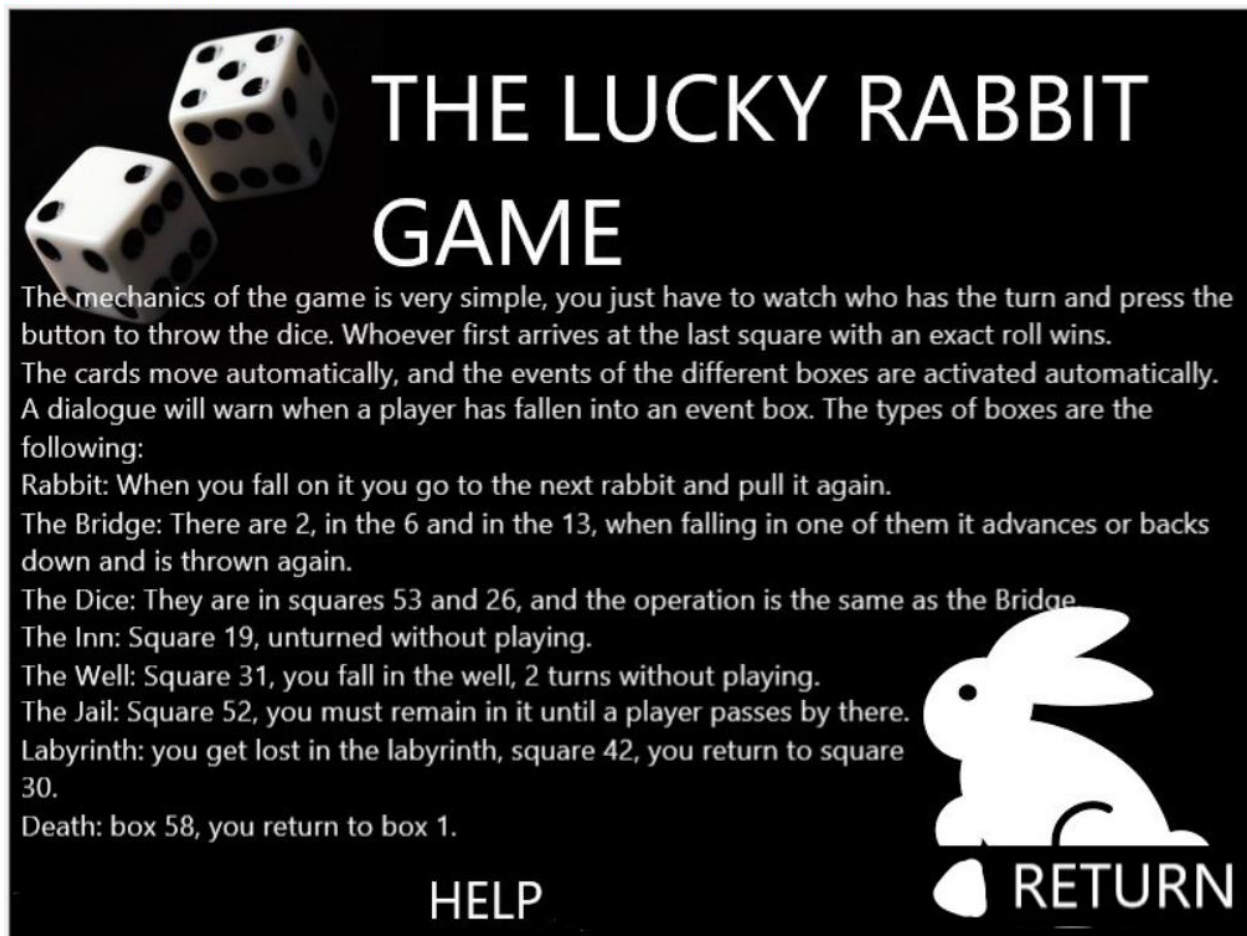
There are several hurdles such as bridge, inn, jail for the players as well.

• The Game Structure

This is the GUI of the board game developed



• The Rules of the Game



- The Knowledge Component

The first screen displays the Start Game, Instructions, Help and Exit options. When the Start Game is clicked the game starts by asking the number of players and the name of the respective players. This is followed by a screen displaying the board in a spiral with 1 to 63 numbers on it. On the right hand side it also has a dice component and the names of the active players are mentioned between the board and the dice. The bunny conveys the exact status of the player playing the game through the dialog box.

The GUI images are all stored in the pictures folder. The main goal to win the game is whichever player would reach the innermost point here 63 token would win the game. There are several ups and downs for the players to reach the goal state. All such constraints are mentioned in the rules section above.

Major steps include:

[p] Creating images...

[p] Creating images of the game...

[p] Creating players chips...

[p] Creating dynamic predicates...

[p] Launching main menu...

- The Inference Making Component for determining the winner (The Game Loop and Strategies).

The inference can be made from the proceedings made by the player, the number comes on the dice, number of players playing the game. The positions on board influences winning probability. Also the constraints such as jail, inn, bridge, well also determine the winning of a player.

- The AI component.

The game is played among the humans. The model is based on the probabilistic model. It determines which player has the higher probability to win. By studying and analyzing the game multiple times I came to a conclusion that for two players it is less than 2% chances to win and for four players it is almost 10%. It is also interesting to observe how the positions of the players on the board influence the winning probability.

Thus more the players play, more is the winning probability of a player. Thus, the game is a probabilistic game.

- The Scoring component

This includes when the player drops on the super rabbit on the board, it is exceeded by the next rabbit square. This is the scoring component in the game.

- The GUI Component In each of the components you need to describe it and test it.

The front end includes the buttons to play the game. The start game will redirect to the new game as shown in the screenshots.



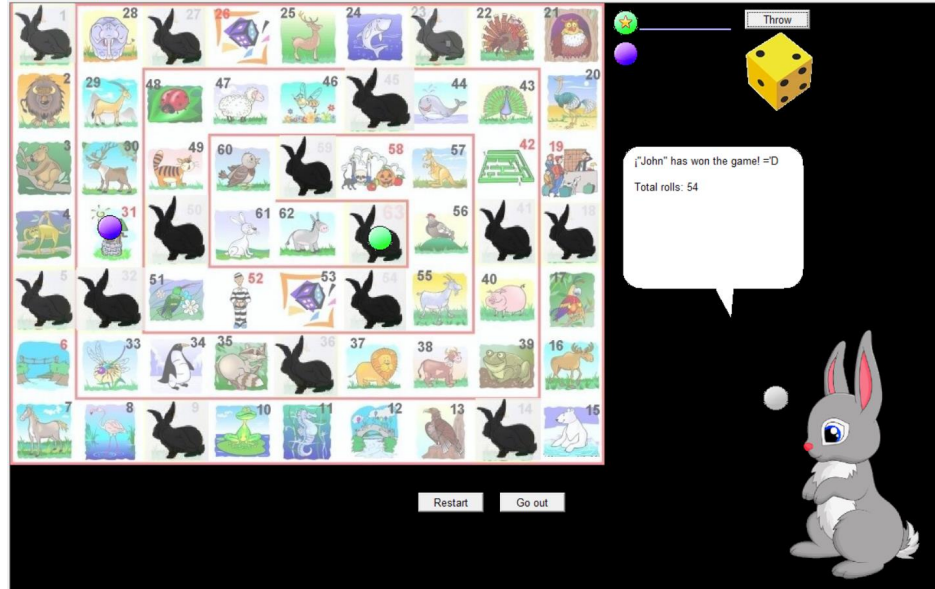
The player can be 2,3 or 4 based on the number of players want to play the game. After selecting the number of players and name of the player. On can start the game. On the click on start game the board appears to play the game. On clicking the RETURN tab, player can move back to the previous page.



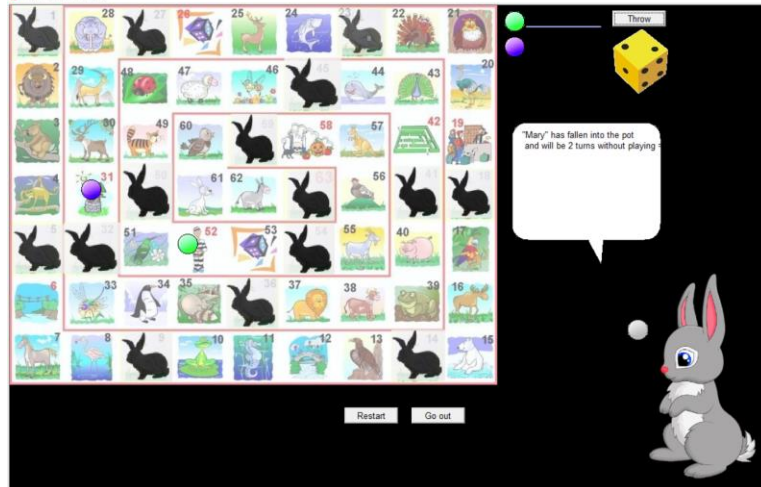
The below screenshots represents the game played and its components. All the actions can be shown in the dialog box



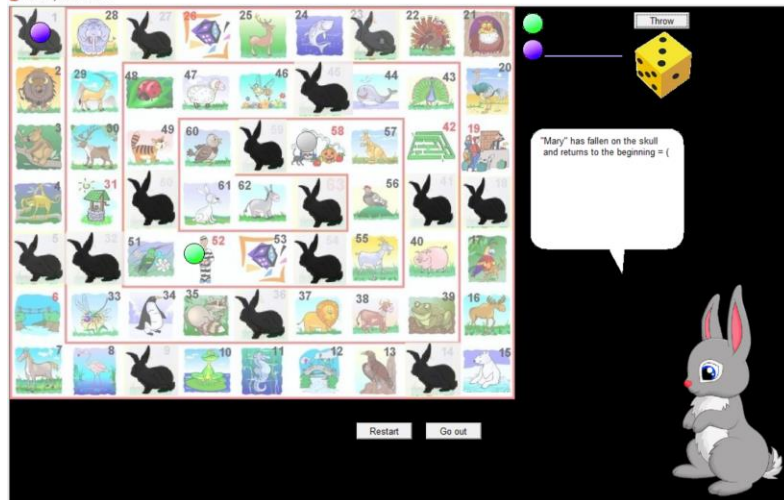
The Lucky Rabbit Game

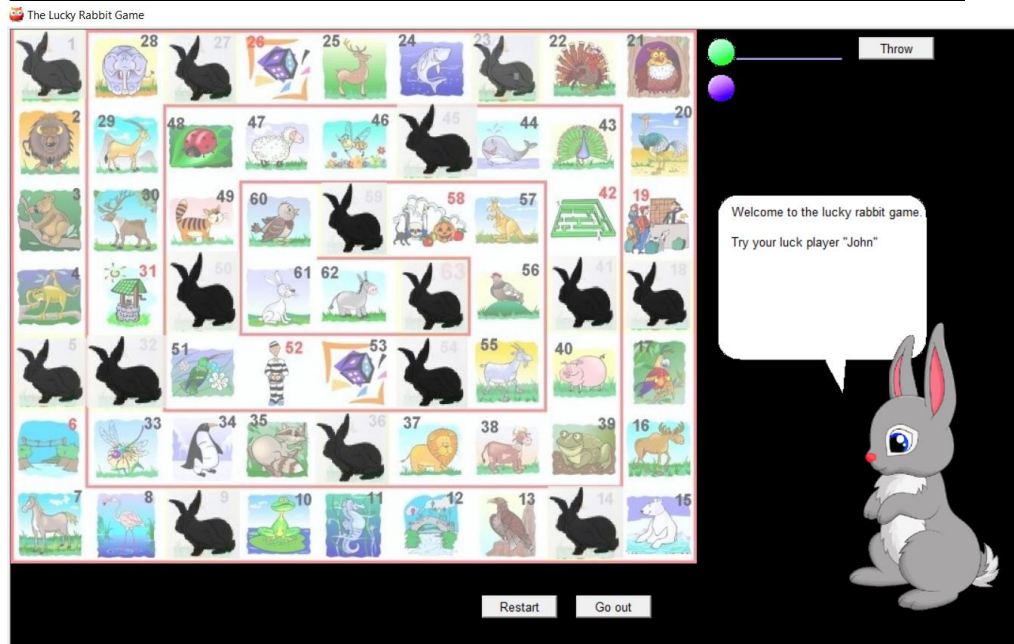
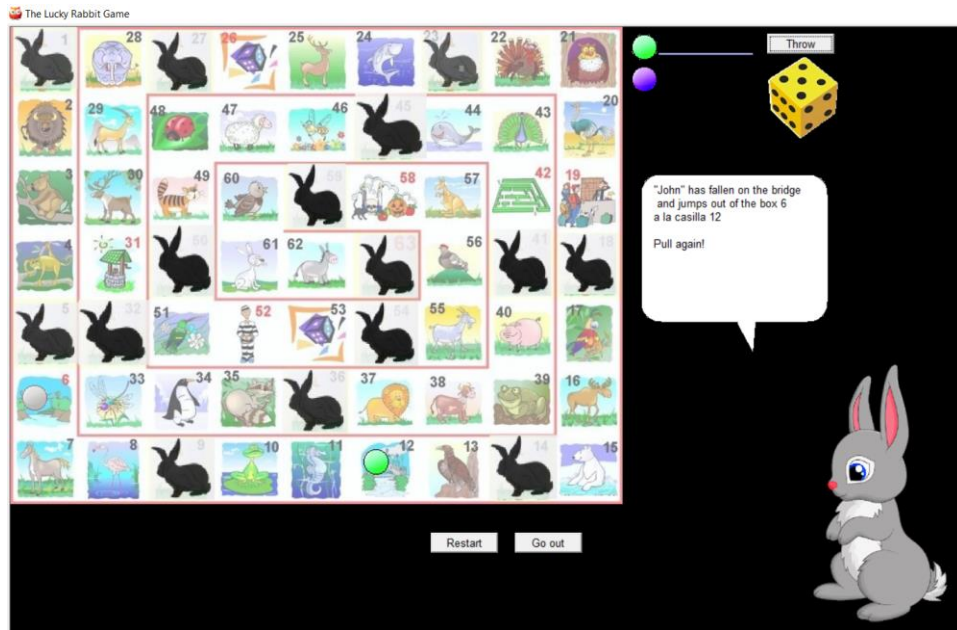


The Lucky Rabbit Game



The Lucky Rabbit Game





The below page is for the instructions. On clicking the instructions the player is redirected to the below page.



The below screenshot is for the winning player and number of rolls taken to win the game.

