A Note On the State Invariants of the System

The state invariants of the system encapsulate the Robot to access within the Maze through the Robot Abstract Machine's variables robotAtX and robotAtY (that take values 1..7 and 1..5 respectively) and Maze Abstract Machine's constants width and height (that take values 7 and 5 respectively). Every movement operation of the Robot is checked at the pre-condition of the Robot/system operation to proceed with valid state of the system. Thus, the system invariants maintain the access of Robot within the Maze

Modularization

Components identified

1. MazeGame - For query operations on Robot on the Maze
2. Robot - Robot's movement operations (move North, move East, move West, move South, Teleport)
3. Maze - Maze holds its independent structure

1. MazeGame SEES Robot and Maze - MazeGame has to have read access to Robot's data to perform query operations on the Robot in the Maze regarding its position

2. Robot SEES Maze - Robot has to access/read the Maze Machine's constants and properties to move around the Maze