



INFORMATICS
INSTITUTE OF
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UNIVERSITY OF
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INFORMATICS INSTITUTE OF TECHNOLOGY

In Collaboration with

UNIVERSITY OF WESTMINSTER

BEng. (Hons) in Software Engineering

Reasoning About Programs

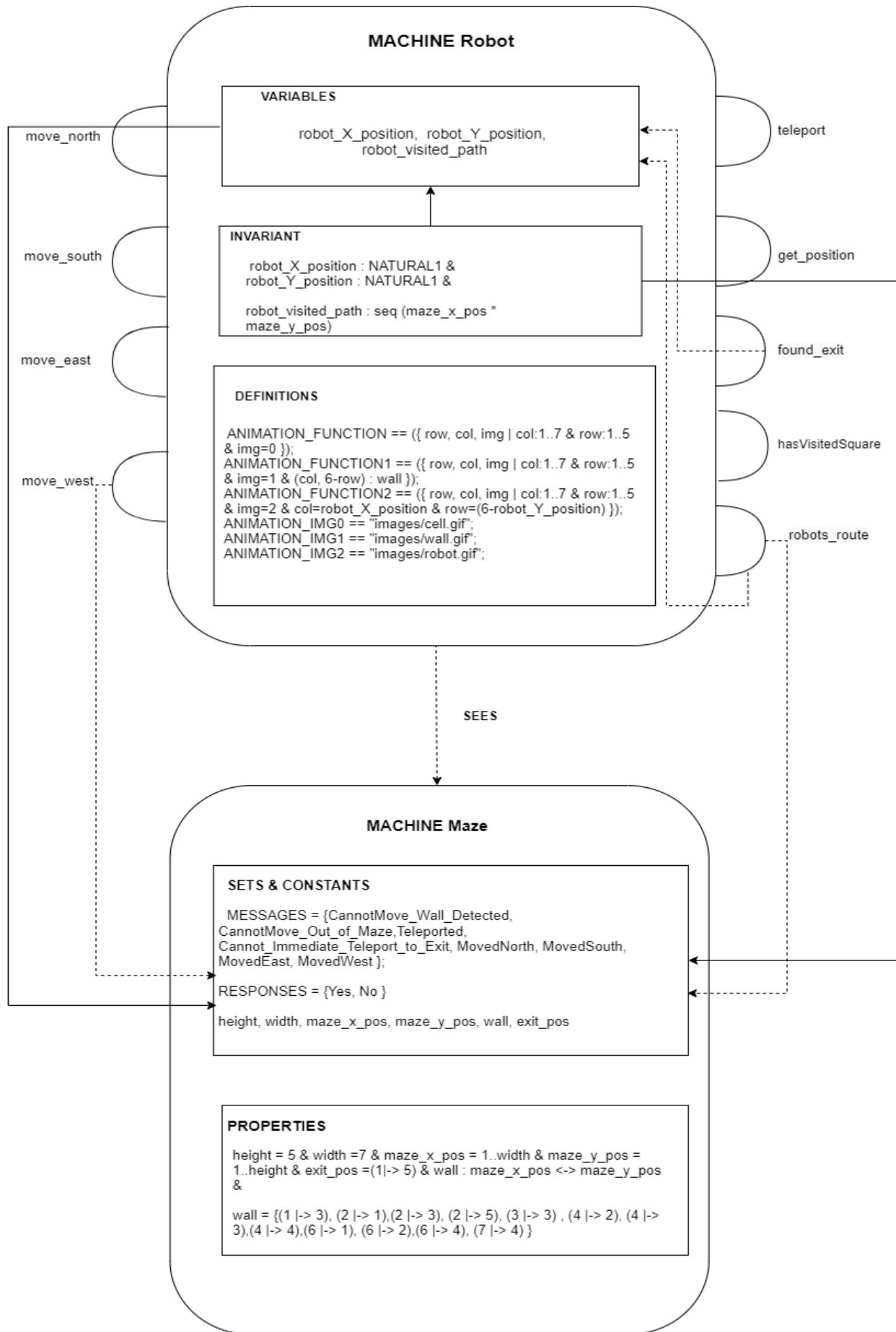
6SENG001W

Coursework

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Explanation for Invariants

Invariants in the Roboto machine

robot_X_position : NATURAL1

– Robot's current position for X coordinates and can only have Natural numbers starting from 1

robot_Y_position : NATURAL1

-Robot's current position for Y coordinates and can only have Natural numbers starting from 1.

robot_visited_path : seq(INTEGER * INTEGER)

-This will contain the robot's moved paths as a sequence and it contains two integer values

Explanations for the Constants

height – Integer value which define the number of rows in the Maze

width – Integer value which define the number of columns in the Maze

maze_x_pos – Range of the x coordinates from 1 to 7

maze_y_pos – Range of the y coordinates from 1 to 5

wall – Value which holds the set of x and y coordinates of the blocked cells in the maze where robot cannot move

exit_pos – Exit position of the the x and y coordinates