Score 5/5

Answer these questions

1. (**POGIL**) Write an algorithm using the 4 simple commands to navigate the robot through the maze in the POGIL question listed in your on-line textbook.

**Answer**

|  |
| --- |
| **MOVE\_FORWARD**  **MOVE\_FORWARD**  **ROTATE\_RIGHT**  **MOVE\_FORWARD**  **MOVE\_FORWARD**  **MOVE\_FORWARD**  **MOVE\_FORWARD**  **ROTATE\_LEFT**  **MOVE\_FORWARD**  **MOVE\_FORWARD** |

2. (**POGIL**) Write an algorithm using repetition control structures to navigate the robot through the maze referenced above.

**Answer**

|  |
| --- |
| MOVE\_FORWARD  REPEAT 1 times  ROTATE\_RIGHT  MOVE\_FORWARD  REPEAT 3 times  ROTATE\_LATE  MOVE\_FORWARD  REPEAT 1 times |
| Since the REPEAT structure is followed by the command(s) to repeat, what do you think of the code below? Would it work?  REPEAT 2 times  MOVE\_FORWARD  ROTATE\_RIGHT  REPEAT 4 times  MOVE\_FORWARD  ROTATE\_LEFT  REPEAT 2 times  MOVE\_FORWARD |

3. (**POGIL**) Include a description or a photo of your drawing of a maze that the general algorithm in the POGIL exercise CANNOT solve.

**Answer**

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| --- |
| A maze that the ai cannot solve is one were the maze branches of to one side this is because the robot can not go backwards if it does not turn the right way |

4. (**POGIL**) Write an algorithm for washing a stack of 10 items that are cups and dishes mixed together, where the rule is that cups are washed in hot water and dishes in cold water. Use simple commands like **hot\_wash** and **cold\_wash**. You may also use the control structures **IF** and **REPEAT n times**. Identify the parts of your algorithm that are examples of *Sequence*, *Selection* and *Repetition*.

The whole program is a sequence because it is all run one after another. All together the program is repeated to the Repeat 10 times is repetition and the selection is the if then statement.

**Answer**

|  |
| --- |
| REPEAT 10 times  If (Item) = Cup  then Hot\_wash  If (Item) = Dish  then Cold\_wash |
| Or, how about this?: Repeat 10 times  If cup then Hot\_wash  Else Cold\_wash |
|  |