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*Introduction to intelligent systems*

Project 1 report

# Problem 1

*MATLAB Review*

i.)

A = [2 59 2 5

41 11 0 4

18 2 3 9

6 23 27 10

5 8 5 1]

B = [0 1 0 1

0 1 1 1

0 0 0 1

1 1 0 1

0 1 0 0]

ii.)

C =

[0 59 0 5

0 11 0 4

0 0 0 9

6 23 0 10

0 8 0 0]

iii.)

ans =

88

iv.)

**Max:**

row =

1

col =

2

V =

59

**Min:**

row =

1 2 3 5 3 1 2 3 4 5 5

col =

1 1 1 1 1 2 3 3 3 3 3 4

V =

0

v.)

D =

0 0 0 0

0 -48 0 -1

0 -59 0 4

6 -36 0 5

0 -51 0 -5

vi.)

**Max:**

row =

4

col =

1

V =

6

**Min:**

row =

3

col =

2

V =

-59

# Problem 2

*Robot obstacle avoidance*

1. Initially, the robot script does not exhibit the properties of intelligence. Using the **loc** variable to keep track of its position, the robot can move by adding vectors of the form   
   **[a b].** For example, adding the vector [1 0] moves the robot down by 1 unit. However this is all the robot can do. When placing an obstacle at **[4 7]** we see that the robot makes no attempt at circumvention. This is due to no logical statements to deal with obstacles in its path. As a result this robot cannot be classified as intelligent since it cannot traverse all possible traversable maps.
2. The addition of the **if statement** improves the functionality of the robot to some extent. It allows for the robot to avoid obstacles directly beneath it as long as there is an empty path to the left. This increases its intelligence since it can now avoid obstacles of this nature.



1. 
2. 

# Problem 3

*Edge traversal*

Clockwise:

  

Anti-clockwise:

 



# Problem 4

*Report on*