CENG 211

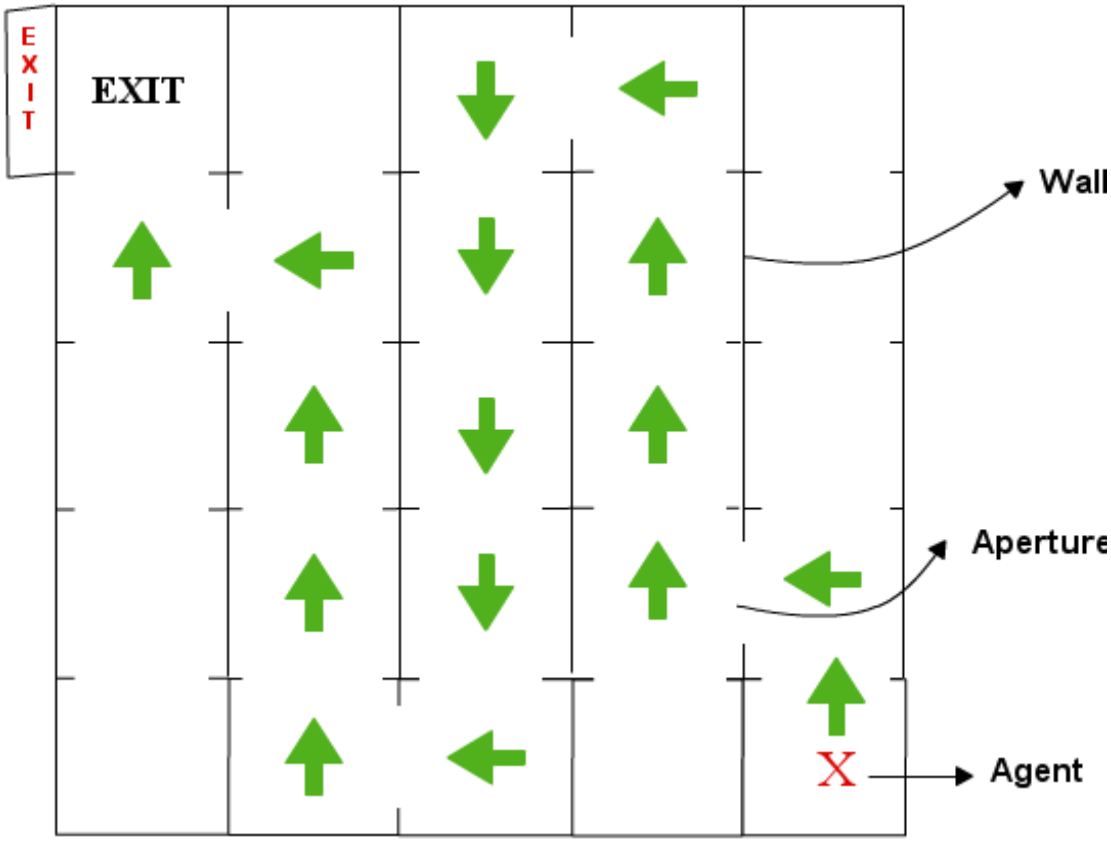
PROGRAMMING FUNDAMENTALS

HOMEWORK-3

Due Date: 19 November 2017, 23:55

In this homework, you are expected to design and implement "**Let me out game**".

In this game, you are going to construct a grid which has a size of nxn. Your agent tries to escape from the grid by keeping track of apertures.



In a grid, each cell is composed of 4 components which are up, bottom, left, right. Each component can be Wall, Aperture, and Exit.

You should create a grid randomly(the size of a grid can between 3 and 7) by

satisfying following constraints:

→ Grid has only one EXIT component (Only left component of a cell can be a EXIT as it is shown in the figure).

→ Each cell has at least one APERTURE component.

After grid construction, game should be started. Agent can move in four directions(up,down,left,right). For each agent movement, updated grid should be shown. The format of the grid visualization is shown in the following for the given grid in the figure:

(INITIAL GRID)	(AFTER FIRST MOVE)
E, S, S, S, S	E, S, S, S, S
S, S, S, S, S	S, S, S, S, S
S, S, S, S, S	S, S, S, S, S
S, S, S, S, S	S, S, S, S, A
S, S, S, S, A	S, S, S, S, S

where **E** denotes EXIT, **S** denotes SPACE, and **A** denotes AGENT.

When the agent reaches the EXIT cell, to escape from the grid make sure the agent moves in left direction, because EXIT component is always assigned to left in cells.

IMPORTANT NOTES:

- You should develop your code on Eclipse IDE with version of Oxgyen1(https://www.eclipse.org/downloads/packages/eclipse-ide-java-ee-developers/oxygen1).
- Your Java version should be at least 1.8.
- You should not change the given test cases.
- Make sure your code passes the given test cases.
- You will be evaluated according to these test cases and object oriented design.
- Make sure you follow naming convention rules.

SUBMISSION RULES:

- You should create your Java project as **ID1_ID2_HW3** and export as **ID1_ID2_HW3.zip**
- You should upload your zip file **ID1_ID2_HW3.zip** to the CMS.
- One of the group members is sufficient to upload homework to the CMS.
- You should add an author comment to the top of each class that you implement.