CS 4990

Practical Artificial Intelligence

Spring 2020
Instructor Dr. Zhiguang Xu

Project 6
Museum Visitors Guide with A Pathfinding Algorithm*

Due by 04/16/2020 (2:00pm)

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1. Introduction

In this project, you will be asked to develop a Museum Visitors Guide (MVG) program that will help Bill, a museum visitor, to make the most of his visit. The program is built using the A* pathfinding algorithm on the Greenfoot platform.

2. Development Details (20 points)

At the beginning of its running, your MVG program constructs a museum with the current exhibition details including floor plan of the exhibition rooms and locations of artworks either by reading the information from a formatted text file or through a random procedure. It then displays the museum in a tiled Greenfoot world. Then Bill, the museum visitor, should be allowed to choose one artwork as his destination. Finally, your program finds out the quickest path/route (if exists) from the current location of Bill to the destination using the A* pathfinding algorithm so he can walk there and see the artwork. Your program should be able to handle dead ends.

Bonus feature (additional 5 points):

Your MVG program is able to dynamically react to the changes to the floor plan and/or locations of the artworks, emergency events that might invalidate part of the currently suggested path, etc., and regenerate a new path (if exists) from where Bill currently is to the destination artwork.

3. Grading criteria

On the due date, each of you will give the class a demo of his/her project. You will of course also be asked to turn in the source code of your project so I could give it a test myself.

No project report is needed.

This is a project that is designed as an individual project. As always, Plagiarism will automatically result in a grade of 0.