CST426 Individual Lab: Navigation Algorithms

# Objective:

* To learn how to use Strategy Pattern in game programming
* To learn how to use A\*, Dijkstra, and Breadth-First Search in motion planning

1. Implement Dijsktra's algorithm in C++
2. Implement the A\* algorithm in C++
3. Implement Breadth-First Search in C++
4. Use **Strategy Pattern** to choose between navigation algorithms depending on the situation.

Output will be simple text. I.e. a list of nodes, and a listing of the path between them. Example:

**Node01 (x:5, y:1)**

**Node02 (x:5, y:3)**

**Node03 (x:1, y:7)**

**Node04 (x:12 y:15)**

**Node05 (x:15 y:15)**

**Start: N1**

**Goal: N5**

**Using A\***

**Path: N1->N2->N4->N5**

# 

# **Bonus!**

Add visual output.

OR

Implement additional pathfinding algorithms such as:

* Collaborative Diffusion
* D\*
* Depth First