

SCHOOL OF COMPUTER SCIENCE

home / computer science / services / websubmission

[User:a1779153 - Student - Vandit Jyotindra Gajjar][Sun 05 Apr 2020 07:18:57am Australia/Adelaide]

Navigation | Make Submission | View Feedback | Status | Help

Selected Assignment -> 2020/Semester 1/Artificial Intelligence/Assignment 1 Section 2 (PG)

Assignment Repository to be Submitted:

https://version-control.adelaide.edu.au/svn/a1779153/2020/s1/ai/Assignment1

Choose a submission from the "Submission" column to view the test script output and any associated marks. The selected "Submission" item is highlighted in **red**. If available, "Helpful Hints" or "Feedback" can be chosen too. All the items in the "Submission" column are listed with the most recent first, If the assignment deadline is known to the Web Submission system, this will be indicated in the Submissions column too.

Submission	Feedback			
Due Date Mar 24 15:45 r239(0) Mar 24 08:21 r226(0) Mar 24 07:57 r225(0)	Due Date: Mar 31 00:15 Provisional Assignment Mark: 0			
	View Feedback in the Practical Marker			
	Assignment Repository Submitted: https://version-control.adelaide.edu.au/svn/a1779153/2020/s1/ai/Assignment1/?p=239			
	Submitted: Mar 24 15:45.19 Status: Finished execution			
	Marks at: Mar 24 15:45.19			
	Part	Marks	Maximum	
	Total Marks	0	5	
	Output at: Mar 24 15:45.19			
	SVN Exported revision 239.			
	%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%			

```
5 marks (3% for postgrads, bonus 3% for undergrads)
Only basic tests here - manual marking later
you submitted pathfinder.py...
you submitted sapathfinder.py...
--- TEST 7 ---
testing with map04
10 10
1 1
10 10
2 1 8 1 1 2 4 7 8 X
3 1 1 5 1 5 1 5 8 8
4 4 2 2 1 6 1 4 6 7
8 5 1 7 0 3 5 1 1 6
3 7 8 1 2 6 8 1 5 1
2 7 4 1 1 4 2 2 4 2
6 5 1 2 1 2 7 5 1 6
7 7 1 3 4 2 0 4 2 1
8 8 1 1 1 5 1 1 9 1
X 8 7 1 3 1 7 1 0 0
initialise path using bfs...
$ python pathfinder.py map04 bfs
your output:
* 1 8 1 1 2 4 7 8 X
* 1 1 5 1 5 1 5 8 8
* 4 2 2 1 6 1 4 6 7
* 5 1 7 0 3 5 1 1 6
* 7 8 1 2 6 8 1 5 1
* 7 4 1 1 4 2 2 4 2
* 5 1 2 1 2 7 5 1 6
* 7 1 3 4 2 0 4 2 1
* * 1 1 1 5 1 1 9 1
X * * * * * * * * * *
expected output:
* 1 8 1 1 2 4 7 8 X
* 1 1 5 1 5 1 5 8 8
* 4 2 2 1 6 1 4 6 7
* 5 1 7 0 3 5 1 1 6
* 7 8 1 2 6 8 1 5 1
* 7 4 1 1 4 2 2 4 2
* 5 1 2 1 2 7 5 1 6
* 7 1 3 4 2 0 4 2 1
* * 1 1 1 5 1 1 9 1
X * * * * * * * * *
comparing outputs...
pass
optimise path using simulated annealing...
$ python sapathfinder.py map04 output-init-map04 10 0.001 0.99 5
your output...
* 1 8 1 1 2 4 7 8 X
* 1 1 5 1 5 1 5 8 8
* * 2 2 1 6 1 4 6 7
8 * 1 7 0 3 5 1 1 6
3 * 8 1 2 6 8 1 5 1
```

```
2 * 4 1 1 4 2 2 4 2
6 * * 2 1 2 7 5 1 6
7 7 * 3 4 2 0 4 2 1
8 8 * * * * * * 9 1
X 8 7 1 3 1 7 * * *
T = 10.000000, cost = 38
T = 9.900000, cost = 38
T = 9.801000, cost = 38
T = 9.702990, cost = 38
T = 9.605960, cost = 38
T = 9.509900, cost = 37
T = 9.414801, cost = 36
T = 9.320653, cost = 35
T = 9.227447, cost = 35
T = 9.135172, cost = 33
T = 9.043821, cost = 33
T = 8.953383, cost = 33
T = 8.863849, cost = 33
T = 8.775210, cost = 35
T = 8.687458, cost = 34
T = 8.600584, cost = 34
T = 8.514578, cost = 34
T = 8.429432, cost = 39
T = 8.345138, cost = 39
T = 8.261686, cost = 39
T = 8.179069, cost = 39
T = 8.097279, cost = 39
T = 8.016306, cost = 39
T = 7.936143, cost = 39
T = 7.856781, cost = 39
T = 7.778214, cost = 39
T = 7.700431, cost = 39
T = 7.623427, cost = 39
T = 7.547193, cost = 42
T = 7.471721, cost = 42
T = 7.397004, cost = 38
T = 7.323034, cost = 37
T = 7.249803, cost = 37
T = 7.177305, cost = 37
T = 7.105532, cost = 37
T = 7.034477, cost = 37
T = 6.964132, cost = 37
T = 6.894491, cost = 35
T = 6.825546, cost = 35
T = 6.757290, cost = 36
T = 6.689718, cost = 36
T = 6.622820, cost = 37
T = 6.556592, cost = 37
T = 6.491026, cost = 38
T = 6.426116, cost = 36
T = 6.361855, cost = 36
T = 6.298236, cost = 36
T = 6.235254, cost = 36
T = 6.172901, cost = 36
```

```
T = 6.111172, cost = 36
T = 6.050061, cost = 36
T = 5.989560, cost = 38
T = 5.929664, cost = 38
T = 5.870368, cost = 38
T = 5.811664, cost = 38
T = 5.753547, cost = 38
T = 5.696012, cost = 38
T = 5.639052, cost = 38
T = 5.582661, cost = 39
T = 5.526835, cost = 39
T = 5.471566, cost = 39
T = 5.416851, cost = 41
T = 5.362682, cost = 37
T = 5.309055, cost = 37
T = 5.255965, cost = 38
T = 5.203405, cost = 39
T = 5.151371, cost = 37
T = 5.099857, cost = 40
T = 5.048859, cost = 37
T = 4.998370, cost = 35
T = 4.948387, cost = 35
T = 4.898903, cost = 36
T = 4.849914, cost = 35
T = 4.801415, cost = 32
T = 4.753400, cost = 32
T = 4.705866, cost = 32
T = 4.658808, cost = 32
T = 4.612220, cost = 32
T = 4.566097, cost = 32
T = 4.520437, cost = 32
T = 4.475232, cost = 32
T = 4.430480, cost = 38
T = 4.386175, cost = 30
T = 4.342313, cost = 30
T = 4.298890, cost = 29
T = 4.255901, cost = 30
T = 4.213342, cost = 33
T = 4.171209, cost = 34
T = 4.129497, cost = 34
T = 4.088202, cost = 34
T = 4.047320, cost = 34
T = 4.006847, cost = 35
T = 3.966778, cost = 35
T = 3.927110, cost = 32
T = 3.887839, cost = 33
T = 3.848961, cost = 33
T = 3.810471, cost = 39
T = 3.772366, cost = 42
T = 3.734643, cost = 42
T = 3.697296, cost = 42
T = 3.660323, cost = 42
T = 3.623720, cost = 42
T = 3.587483, cost = 41
```

```
T = 3.551608, cost = 41
T = 3.516092, cost = 41
T = 3.480931, cost = 43
T = 3.446122, cost = 41
T = 3.411661, cost = 42
T = 3.377544, cost = 41
T = 3.343769, cost = 41
T = 3.310331, cost = 34
T = 3.277228, cost = 34
T = 3.244455, cost = 34
T = 3.212011, cost = 34
T = 3.179891, cost = 34
T = 3.148092, cost = 34
T = 3.116611, cost = 34
T = 3.085445, cost = 42
T = 3.054590, cost = 41
T = 3.024044, cost = 41
T = 2.993804, cost = 41
T = 2.963866, cost = 41
T = 2.934227, cost = 39
T = 2.904885, cost = 39
T = 2.875836, cost = 39
T = 2.847078, cost = 39
T = 2.818607, cost = 37
T = 2.790421, cost = 37
T = 2.762517, cost = 37
T = 2.734892, cost = 37
T = 2.707543, cost = 37
T = 2.680467, cost = 38
T = 2.653662, cost = 38
T = 2.627126, cost = 39
T = 2.600855, cost = 39
T = 2.574846, cost = 39
T = 2.549098, cost = 39
T = 2.523607, cost = 37
T = 2.498371, cost = 38
T = 2.473387, cost = 38
T = 2.448653, cost = 36
T = 2.424166, cost = 36
T = 2.399925, cost = 36
T = 2.375926, cost = 39
T = 2.352166, cost = 37
T = 2.328645, cost = 37
T = 2.305358, cost = 37
T = 2.282305, cost = 37
T = 2.259482, cost = 37
T = 2.236887, cost = 37
T = 2.214518, cost = 37
T = 2.192373, cost = 37
T = 2.170449, cost = 37
T = 2.148744, cost = 37
T = 2.127257, cost = 37
T = 2.105984, cost = 37
T = 2.084925, cost = 37
```

```
T = 2.064075, cost = 37
T = 2.043435, cost = 37
T = 2.023000, cost = 37
T = 2.002770, cost = 34
T = 1.982743, cost = 34
T = 1.962915, cost = 34
T = 1.943286, cost = 34
T = 1.923853, cost = 34
T = 1.904615, cost = 34
T = 1.885568, cost = 34
T = 1.866713, cost = 34
T = 1.848046, cost = 34
T = 1.829565, cost = 34
T = 1.811270, cost = 34
T = 1.793157, cost = 34
T = 1.775225, cost = 34
T = 1.757473, cost = 34
T = 1.739898, cost = 34
T = 1.722499, cost = 34
T = 1.705274, cost = 34
T = 1.688222, cost = 34
T = 1.671339, cost = 34
T = 1.654626, cost = 34
T = 1.638080, cost = 34
T = 1.621699, cost = 34
T = 1.605482, cost = 34
T = 1.589427, cost = 34
T = 1.573533, cost = 40
T = 1.557797, cost = 42
T = 1.542220, cost = 42
T = 1.526797, cost = 40
T = 1.511529, cost = 39
T = 1.496414, cost = 41
T = 1.481450, cost = 41
T = 1.466635, cost = 41
T = 1.451969, cost = 41
T = 1.437449, cost = 41
T = 1.423075, cost = 41
T = 1.408844, cost = 38
T = 1.394756, cost = 38
T = 1.380808, cost = 38
T = 1.367000, cost = 38
T = 1.353330, cost = 38
T = 1.339797, cost = 38
T = 1.326399, cost = 38
T = 1.313135, cost = 38
T = 1.300003, cost = 38
T = 1.287003, cost = 38
T = 1.274133, cost = 38
T = 1.261392, cost = 38
T = 1.248778, cost = 38
T = 1.236290, cost = 38
T = 1.223927, cost = 38
T = 1.211688, cost = 38
```

```
T = 1.199571, cost = 36
T = 1.187576, cost = 34
T = 1.175700, cost = 34
T = 1.163943, cost = 34
T = 1.152303, cost = 34
T = 1.140780, cost = 36
T = 1.129373, cost = 36
T = 1.118079, cost = 36
T = 1.106898, cost = 36
T = 1.095829, cost = 36
T = 1.084871, cost = 36
T = 1.074022, cost = 36
T = 1.063282, cost = 36
T = 1.052649, cost = 35
T = 1.042123, cost = 35
T = 1.031701, cost = 35
T = 1.021384, cost = 35
T = 1.011170, cost = 35
T = 1.001059, cost = 35
T = 0.991048, cost = 35
T = 0.981138, cost = 35
T = 0.971326, cost = 35
T = 0.961613, cost = 35
T = 0.951997, cost = 35
T = 0.942477, cost = 35
T = 0.933052, cost = 35
T = 0.923722, cost = 35
T = 0.914484, cost = 35
T = 0.905340, cost = 35
T = 0.896286, cost = 35
T = 0.887323, cost = 35
T = 0.878450, cost = 35
T = 0.869666, cost = 31
T = 0.860969, cost = 31
T = 0.852359, cost = 31
T = 0.843836, cost = 31
T = 0.835397, cost = 31
T = 0.827043, cost = 31
T = 0.818773, cost = 32
T = 0.810585, cost = 32
T = 0.802479, cost = 32
T = 0.794455, cost = 32
T = 0.786510, cost = 32
T = 0.778645, cost = 34
T = 0.770858, cost = 34
T = 0.763150, cost = 34
T = 0.755518, cost = 34
T = 0.747963, cost = 34
T = 0.740484, cost = 34
T = 0.733079, cost = 34
T = 0.725748, cost = 34
T = 0.718490, cost = 34
T = 0.711306, cost = 32
T = 0.704192, cost = 32
```

```
T = 0.697151, cost = 32
T = 0.690179, cost = 32
T = 0.683277, cost = 32
T = 0.676444, cost = 32
T = 0.669680, cost = 32
T = 0.662983, cost = 32
T = 0.656353, cost = 32
T = 0.649790, cost = 32
T = 0.643292, cost = 32
T = 0.636859, cost = 32
T = 0.630490, cost = 32
T = 0.624186, cost = 32
T = 0.617944, cost = 32
T = 0.611764, cost = 32
T = 0.605647, cost = 32
T = 0.599590, cost = 32
T = 0.593594, cost = 32
T = 0.587658, cost = 32
T = 0.581782, cost = 32
T = 0.575964, cost = 32
T = 0.570204, cost = 32
T = 0.564502, cost = 32
T = 0.558857, cost = 32
T = 0.553269, cost = 31
T = 0.547736, cost = 31
T = 0.542259, cost = 31
T = 0.536836, cost = 31
T = 0.531468, cost = 31
T = 0.526153, cost = 31
T = 0.520891, cost = 31
T = 0.515683, cost = 31
T = 0.510526, cost = 30
T = 0.505420, cost = 30
T = 0.500366, cost = 30
T = 0.495363, cost = 30
T = 0.490409, cost = 30
T = 0.485505, cost = 30
T = 0.480650, cost = 30
T = 0.475843, cost = 30
T = 0.471085, cost = 30
T = 0.466374, cost = 30
T = 0.461710, cost = 30
T = 0.457093, cost = 30
T = 0.452522, cost = 30
T = 0.447997, cost = 30
T = 0.443517, cost = 30
T = 0.439082, cost = 30
T = 0.434691, cost = 30
T = 0.430344, cost = 30
T = 0.426041, cost = 30
T = 0.421780, cost = 30
T = 0.417563, cost = 30
T = 0.413387, cost = 30
T = 0.409253, cost = 30
```

```
T = 0.405160, cost = 30
T = 0.401109, cost = 30
T = 0.397098, cost = 30
T = 0.393127, cost = 30
T = 0.389196, cost = 30
T = 0.385304, cost = 30
T = 0.381451, cost = 29
T = 0.377636, cost = 29
T = 0.373860, cost = 29
T = 0.370121, cost = 29
T = 0.366420, cost = 29
T = 0.362756, cost = 29
T = 0.359128, cost = 29
T = 0.355537, cost = 29
T = 0.351981, cost = 29
T = 0.348462, cost = 29
T = 0.344977, cost = 29
T = 0.341527, cost = 29
T = 0.338112, cost = 29
T = 0.334731, cost = 29
T = 0.331384, cost = 28
T = 0.328070, cost = 28
T = 0.324789, cost = 28
T = 0.321541, cost = 28
T = 0.318326, cost = 28
T = 0.315142, cost = 28
T = 0.311991, cost = 28
T = 0.308871, cost = 28
T = 0.305782, cost = 28
T = 0.302725, cost = 28
T = 0.299697, cost = 28
T = 0.296700, cost = 28
T = 0.293733, cost = 28
T = 0.290796, cost = 28
T = 0.287888, cost = 28
T = 0.285009, cost = 28
T = 0.282159, cost = 28
T = 0.279338, cost = 28
T = 0.276544, cost = 28
T = 0.273779, cost = 28
T = 0.271041, cost = 28
T = 0.268331, cost = 28
T = 0.265647, cost = 28
T = 0.262991, cost = 28
T = 0.260361, cost = 28
T = 0.257757, cost = 28
T = 0.255180, cost = 28
T = 0.252628, cost = 28
T = 0.250102, cost = 28
T = 0.247601, cost = 28
T = 0.245125, cost = 28
T = 0.242673, cost = 28
T = 0.240247, cost = 28
T = 0.237844, cost = 28
```

```
T = 0.235466, cost = 28
T = 0.233111, cost = 28
T = 0.230780, cost = 28
T = 0.228472, cost = 28
T = 0.226187, cost = 28
T = 0.223926, cost = 28
T = 0.221686, cost = 28
T = 0.219469, cost = 28
T = 0.217275, cost = 28
T = 0.215102, cost = 28
T = 0.212951, cost = 28
T = 0.210821, cost = 28
T = 0.208713, cost = 28
T = 0.206626, cost = 28
T = 0.204560, cost = 28
T = 0.202514, cost = 28
T = 0.200489, cost = 28
T = 0.198484, cost = 28
T = 0.196499, cost = 28
T = 0.194534, cost = 28
T = 0.192589, cost = 28
T = 0.190663, cost = 28
T = 0.188756, cost = 28
T = 0.186869, cost = 28
T = 0.185000, cost = 28
T = 0.183150, cost = 28
T = 0.181319, cost = 28
T = 0.179506, cost = 28
T = 0.177710, cost = 28
T = 0.175933, cost = 28
T = 0.174174, cost = 28
T = 0.172432, cost = 28
T = 0.170708, cost = 28
T = 0.169001, cost = 28
T = 0.167311, cost = 28
T = 0.165638, cost = 28
T = 0.163981, cost = 28
T = 0.162342, cost = 28
T = 0.160718, cost = 28
T = 0.159111, cost = 28
T = 0.157520, cost = 28
T = 0.155945, cost = 28
T = 0.154385, cost = 28
T = 0.152841, cost = 28
T = 0.151313, cost = 28
T = 0.149800, cost = 28
T = 0.148302, cost = 28
T = 0.146819, cost = 28
T = 0.145351, cost = 28
T = 0.143897, cost = 28
T = 0.142458, cost = 28
T = 0.141034, cost = 28
T = 0.139623, cost = 28
T = 0.138227, cost = 28
```

```
T = 0.136845, cost = 28
T = 0.135476, cost = 28
T = 0.134122, cost = 28
T = 0.132780, cost = 27
T = 0.131453, cost = 27
T = 0.130138, cost = 27
T = 0.128837, cost = 27
T = 0.127548, cost = 27
T = 0.126273, cost = 27
T = 0.125010, cost = 27
T = 0.123760, cost = 27
T = 0.122522, cost = 27
T = 0.121297, cost = 27
T = 0.120084, cost = 27
T = 0.118883, cost = 27
T = 0.117694, cost = 27
T = 0.116518, cost = 27
T = 0.115352, cost = 27
T = 0.114199, cost = 27
T = 0.113057, cost = 27
T = 0.111926, cost = 27
T = 0.110807, cost = 27
T = 0.109699, cost = 27
T = 0.108602, cost = 27
T = 0.107516, cost = 27
T = 0.106441, cost = 27
T = 0.105376, cost = 27
T = 0.104323, cost = 27
T = 0.103279, cost = 27
T = 0.102247, cost = 27
T = 0.101224, cost = 27
T = 0.100212, cost = 27
T = 0.099210, cost = 27
T = 0.098218, cost = 27
T = 0.097235, cost = 27
T = 0.096263, cost = 27
T = 0.095300, cost = 27
T = 0.094347, cost = 27
T = 0.093404, cost = 27
T = 0.092470, cost = 27
T = 0.091545, cost = 27
T = 0.090630, cost = 27
T = 0.089724, cost = 27
T = 0.088826, cost = 27
T = 0.087938, cost = 27
T = 0.087059, cost = 27
T = 0.086188, cost = 27
T = 0.085326, cost = 27
T = 0.084473, cost = 27
T = 0.083628, cost = 27
T = 0.082792, cost = 27
T = 0.081964, cost = 27
T = 0.081144, cost = 27
T = 0.080333, cost = 27
```

```
T = 0.079530, cost = 27
T = 0.078734, cost = 27
T = 0.077947, cost = 27
T = 0.077167, cost = 27
T = 0.076396, cost = 27
T = 0.075632, cost = 27
T = 0.074876, cost = 27
T = 0.074127, cost = 27
T = 0.073385, cost = 27
T = 0.072652, cost = 27
T = 0.071925, cost = 27
T = 0.071206, cost = 27
T = 0.070494, cost = 27
T = 0.069789, cost = 27
T = 0.069091, cost = 27
T = 0.068400, cost = 27
T = 0.067716, cost = 27
T = 0.067039, cost = 27
T = 0.066369, cost = 27
T = 0.065705, cost = 27
T = 0.065048, cost = 27
T = 0.064397, cost = 27
T = 0.063753, cost = 27
T = 0.063116, cost = 27
T = 0.062485, cost = 27
T = 0.061860, cost = 27
T = 0.061241, cost = 27
T = 0.060629, cost = 27
T = 0.060022, cost = 27
T = 0.059422, cost = 27
T = 0.058828, cost = 27
T = 0.058240, cost = 27
T = 0.057657, cost = 27
T = 0.057081, cost = 27
T = 0.056510, cost = 27
T = 0.055945, cost = 27
T = 0.055385, cost = 27
T = 0.054832, cost = 27
T = 0.054283, cost = 27
T = 0.053740, cost = 27
T = 0.053203, cost = 27
T = 0.052671, cost = 27
T = 0.052144, cost = 27
T = 0.051623, cost = 27
T = 0.051107, cost = 27
T = 0.050596, cost = 27
T = 0.050090, cost = 27
T = 0.049589, cost = 27
T = 0.049093, cost = 27
T = 0.048602, cost = 27
T = 0.048116, cost = 27
T = 0.047635, cost = 27
T = 0.047158, cost = 27
T = 0.046687, cost = 27
```

```
T = 0.046220, cost = 27
T = 0.045758, cost = 27
T = 0.045300, cost = 27
T = 0.044847, cost = 27
T = 0.044399, cost = 27
T = 0.043955, cost = 27
T = 0.043515, cost = 27
T = 0.043080, cost = 27
T = 0.042649, cost = 27
T = 0.042223, cost = 27
T = 0.041800, cost = 27
T = 0.041382, cost = 27
T = 0.040969, cost = 27
T = 0.040559, cost = 27
T = 0.040153, cost = 27
T = 0.039752, cost = 27
T = 0.039354, cost = 27
T = 0.038961, cost = 27
T = 0.038571, cost = 27
T = 0.038185, cost = 27
T = 0.037804, cost = 27
T = 0.037426, cost = 27
T = 0.037051, cost = 27
T = 0.036681, cost = 27
T = 0.036314, cost = 27
T = 0.035951, cost = 27
T = 0.035591, cost = 27
T = 0.035235, cost = 27
T = 0.034883, cost = 27
T = 0.034534, cost = 27
T = 0.034189, cost = 27
T = 0.033847, cost = 27
T = 0.033509, cost = 27
T = 0.033173, cost = 27
T = 0.032842, cost = 27
T = 0.032513, cost = 27
T = 0.032188, cost = 27
T = 0.031866, cost = 27
T = 0.031548, cost = 27
T = 0.031232, cost = 27
T = 0.030920, cost = 27
T = 0.030611, cost = 27
T = 0.030305, cost = 27
T = 0.030001, cost = 27
T = 0.029701, cost = 27
T = 0.029404, cost = 27
T = 0.029110, cost = 27
T = 0.028819, cost = 27
T = 0.028531, cost = 27
T = 0.028246, cost = 27
T = 0.027963, cost = 27
T = 0.027684, cost = 27
T = 0.027407, cost = 27
T = 0.027133, cost = 27
```

```
T = 0.026861, cost = 27
T = 0.026593, cost = 27
T = 0.026327, cost = 27
T = 0.026064, cost = 27
T = 0.025803, cost = 27
T = 0.025545, cost = 27
T = 0.025290, cost = 27
T = 0.025037, cost = 27
T = 0.024786, cost = 27
T = 0.024538, cost = 27
T = 0.024293, cost = 27
T = 0.024050, cost = 27
T = 0.023810, cost = 27
T = 0.023571, cost = 27
T = 0.023336, cost = 27
T = 0.023102, cost = 27
T = 0.022871, cost = 27
T = 0.022643, cost = 27
T = 0.022416, cost = 27
T = 0.022192, cost = 27
T = 0.021970, cost = 27
T = 0.021750, cost = 27
T = 0.021533, cost = 27
T = 0.021318, cost = 27
T = 0.021104, cost = 27
T = 0.020893, cost = 27
T = 0.020684, cost = 27
T = 0.020478, cost = 27
T = 0.020273, cost = 27
T = 0.020070, cost = 27
T = 0.019869, cost = 27
T = 0.019671, cost = 27
T = 0.019474, cost = 27
T = 0.019279, cost = 27
T = 0.019086, cost = 27
T = 0.018896, cost = 27
T = 0.018707, cost = 27
T = 0.018520, cost = 27
T = 0.018334, cost = 27
T = 0.018151, cost = 27
T = 0.017970, cost = 27
T = 0.017790, cost = 27
T = 0.017612, cost = 27
T = 0.017436, cost = 27
T = 0.017261, cost = 27
T = 0.017089, cost = 27
T = 0.016918, cost = 27
T = 0.016749, cost = 27
T = 0.016581, cost = 27
T = 0.016416, cost = 27
T = 0.016251, cost = 27
T = 0.016089, cost = 27
T = 0.015928, cost = 27
T = 0.015769, cost = 27
```

```
T = 0.015611, cost = 27
T = 0.015455, cost = 27
T = 0.015300, cost = 27
T = 0.015147, cost = 27
T = 0.014996, cost = 27
T = 0.014846, cost = 27
T = 0.014697, cost = 27
T = 0.014550, cost = 27
T = 0.014405, cost = 27
T = 0.014261, cost = 27
T = 0.014118, cost = 27
T = 0.013977, cost = 27
T = 0.013837, cost = 27
T = 0.013699, cost = 27
T = 0.013562, cost = 27
T = 0.013426, cost = 27
T = 0.013292, cost = 27
T = 0.013159, cost = 27
T = 0.013028, cost = 27
T = 0.012897, cost = 27
T = 0.012768, cost = 27
T = 0.012641, cost = 27
T = 0.012514, cost = 27
T = 0.012389, cost = 27
T = 0.012265, cost = 27
T = 0.012143, cost = 27
T = 0.012021, cost = 27
T = 0.011901, cost = 27
T = 0.011782, cost = 27
T = 0.011664, cost = 27
T = 0.011547, cost = 27
T = 0.011432, cost = 27
T = 0.011318, cost = 27
T = 0.011204, cost = 27
T = 0.011092, cost = 27
T = 0.010982, cost = 27
T = 0.010872, cost = 27
T = 0.010763, cost = 27
T = 0.010655, cost = 27
T = 0.010549, cost = 27
T = 0.010443, cost = 27
T = 0.010339, cost = 27
T = 0.010235, cost = 27
T = 0.010133, cost = 27
T = 0.010032, cost = 27
T = 0.009931, cost = 27
T = 0.009832, cost = 27
T = 0.009734, cost = 27
T = 0.009637, cost = 27
T = 0.009540, cost = 27
T = 0.009445, cost = 27
T = 0.009350, cost = 27
T = 0.009257, cost = 27
T = 0.009164, cost = 27
```

```
T = 0.009073, cost = 27
T = 0.008982, cost = 27
T = 0.008892, cost = 27
T = 0.008803, cost = 27
T = 0.008715, cost = 27
T = 0.008628, cost = 27
T = 0.008542, cost = 27
T = 0.008456, cost = 27
T = 0.008372, cost = 27
T = 0.008288, cost = 27
T = 0.008205, cost = 27
T = 0.008123, cost = 27
T = 0.008042, cost = 27
T = 0.007961, cost = 27
T = 0.007882, cost = 27
T = 0.007803, cost = 27
T = 0.007725, cost = 27
T = 0.007648, cost = 27
T = 0.007571, cost = 27
T = 0.007495, cost = 27
T = 0.007421, cost = 27
T = 0.007346, cost = 27
T = 0.007273, cost = 27
T = 0.007200, cost = 27
T = 0.007128, cost = 27
T = 0.007057, cost = 27
T = 0.006986, cost = 27
T = 0.006916, cost = 27
T = 0.006847, cost = 27
T = 0.006779, cost = 27
T = 0.006711, cost = 27
T = 0.006644, cost = 27
T = 0.006577, cost = 27
T = 0.006512, cost = 27
T = 0.006447, cost = 27
T = 0.006382, cost = 27
T = 0.006318, cost = 27
T = 0.006255, cost = 27
T = 0.006193, cost = 27
T = 0.006131, cost = 27
T = 0.006069, cost = 27
T = 0.006009, cost = 27
T = 0.005949, cost = 27
T = 0.005889, cost = 27
T = 0.005830, cost = 27
T = 0.005772, cost = 27
T = 0.005714, cost = 27
T = 0.005657, cost = 27
T = 0.005600, cost = 27
T = 0.005544, cost = 27
T = 0.005489, cost = 27
T = 0.005434, cost = 27
T = 0.005380, cost = 27
T = 0.005326, cost = 27
```

```
T = 0.005273, cost = 27
T = 0.005220, cost = 27
T = 0.005168, cost = 27
T = 0.005116, cost = 27
T = 0.005065, cost = 27
T = 0.005014, cost = 27
T = 0.004964, cost = 27
T = 0.004914, cost = 27
T = 0.004865, cost = 27
T = 0.004817, cost = 27
T = 0.004769, cost = 27
T = 0.004721, cost = 27
T = 0.004674, cost = 27
T = 0.004627, cost = 27
T = 0.004581, cost = 27
T = 0.004535, cost = 27
T = 0.004489, cost = 27
T = 0.004445, cost = 27
T = 0.004400, cost = 27
T = 0.004356, cost = 27
T = 0.004313, cost = 27
T = 0.004269, cost = 27
T = 0.004227, cost = 27
T = 0.004184, cost = 27
T = 0.004143, cost = 27
T = 0.004101, cost = 27
T = 0.004060, cost = 27
T = 0.004020, cost = 27
T = 0.003979, cost = 27
T = 0.003940, cost = 27
T = 0.003900, cost = 27
T = 0.003861, cost = 27
T = 0.003823, cost = 27
T = 0.003784, cost = 27
T = 0.003747, cost = 27
T = 0.003709, cost = 27
T = 0.003672, cost = 27
T = 0.003635, cost = 27
T = 0.003599, cost = 27
T = 0.003563, cost = 27
T = 0.003527, cost = 27
T = 0.003492, cost = 27
T = 0.003457, cost = 27
T = 0.003423, cost = 27
T = 0.003388, cost = 27
T = 0.003354, cost = 27
T = 0.003321, cost = 27
T = 0.003288, cost = 27
T = 0.003255, cost = 27
T = 0.003222, cost = 27
T = 0.003190, cost = 27
T = 0.003158, cost = 27
T = 0.003127, cost = 27
T = 0.003095, cost = 27
```

```
T = 0.003064, cost = 27
T = 0.003034, cost = 27
T = 0.003003, cost = 27
T = 0.002973, cost = 27
T = 0.002944, cost = 27
T = 0.002914, cost = 27
T = 0.002885, cost = 27
T = 0.002856, cost = 27
T = 0.002828, cost = 27
T = 0.002799, cost = 27
T = 0.002771, cost = 27
T = 0.002744, cost = 27
T = 0.002716, cost = 27
T = 0.002689, cost = 27
T = 0.002662, cost = 27
T = 0.002635, cost = 27
T = 0.002609, cost = 27
T = 0.002583, cost = 27
T = 0.002557, cost = 27
T = 0.002532, cost = 27
T = 0.002506, cost = 27
T = 0.002481, cost = 27
T = 0.002456, cost = 27
T = 0.002432, cost = 27
T = 0.002408, cost = 27
T = 0.002383, cost = 27
T = 0.002360, cost = 27
T = 0.002336, cost = 27
T = 0.002313, cost = 27
T = 0.002290, cost = 27
T = 0.002267, cost = 27
T = 0.002244, cost = 27
T = 0.002222, cost = 27
T = 0.002199, cost = 27
T = 0.002177, cost = 27
T = 0.002156, cost = 27
T = 0.002134, cost = 27
T = 0.002113, cost = 27
T = 0.002092, cost = 27
T = 0.002071, cost = 27
T = 0.002050, cost = 27
T = 0.002029, cost = 27
T = 0.002009, cost = 27
T = 0.001989, cost = 27
T = 0.001969, cost = 27
T = 0.001949, cost = 27
T = 0.001930, cost = 27
T = 0.001911, cost = 27
T = 0.001892, cost = 27
T = 0.001873, cost = 27
T = 0.001854, cost = 27
T = 0.001835, cost = 27
T = 0.001817, cost = 27
T = 0.001799, cost = 27
```

```
T = 0.001781, cost = 27
T = 0.001763, cost = 27
T = 0.001745, cost = 27
T = 0.001728, cost = 27
T = 0.001711, cost = 27
T = 0.001694, cost = 27
T = 0.001677, cost = 27
T = 0.001660, cost = 27
T = 0.001643, cost = 27
T = 0.001627, cost = 27
T = 0.001611, cost = 27
T = 0.001594, cost = 27
T = 0.001579, cost = 27
T = 0.001563, cost = 27
T = 0.001547, cost = 27
T = 0.001532, cost = 27
T = 0.001516, cost = 27
T = 0.001501, cost = 27
T = 0.001486, cost = 27
T = 0.001471, cost = 27
T = 0.001457, cost = 27
T = 0.001442, cost = 27
T = 0.001428, cost = 27
T = 0.001413, cost = 27
T = 0.001399, cost = 27
T = 0.001385, cost = 27
T = 0.001371, cost = 27
T = 0.001358, cost = 27
T = 0.001344, cost = 27
T = 0.001331, cost = 27
T = 0.001317, cost = 27
T = 0.001304, cost = 27
T = 0.001291, cost = 27
T = 0.001278, cost = 27
T = 0.001265, cost = 27
T = 0.001253, cost = 27
T = 0.001240, cost = 27
T = 0.001228, cost = 27
T = 0.001216, cost = 27
T = 0.001203, cost = 27
T = 0.001191, cost = 27
T = 0.001179, cost = 27
T = 0.001168, cost = 27
T = 0.001156, cost = 27
T = 0.001144, cost = 27
T = 0.001133, cost = 27
T = 0.001122, cost = 27
T = 0.001110, cost = 27
T = 0.001099, cost = 27
T = 0.001088, cost = 27
T = 0.001077, cost = 27
T = 0.001067, cost = 27
T = 0.001056, cost = 27
T = 0.001045, cost = 27
```

```
T = 0.001035, cost = 27
T = 0.001025, cost = 27
T = 0.001014, cost = 27
T = 0.001004, cost = 27
checking output...
assuming first 10 lines contain the map and path...
unknown error - email lecturer
```

Authorised by: Head of School, School of Computer Science

Maintained by: School of Computer Science

Last Updated: 8 Feb 2020

CRICOS Provider Number 00123M