

Project 3: Graph Man

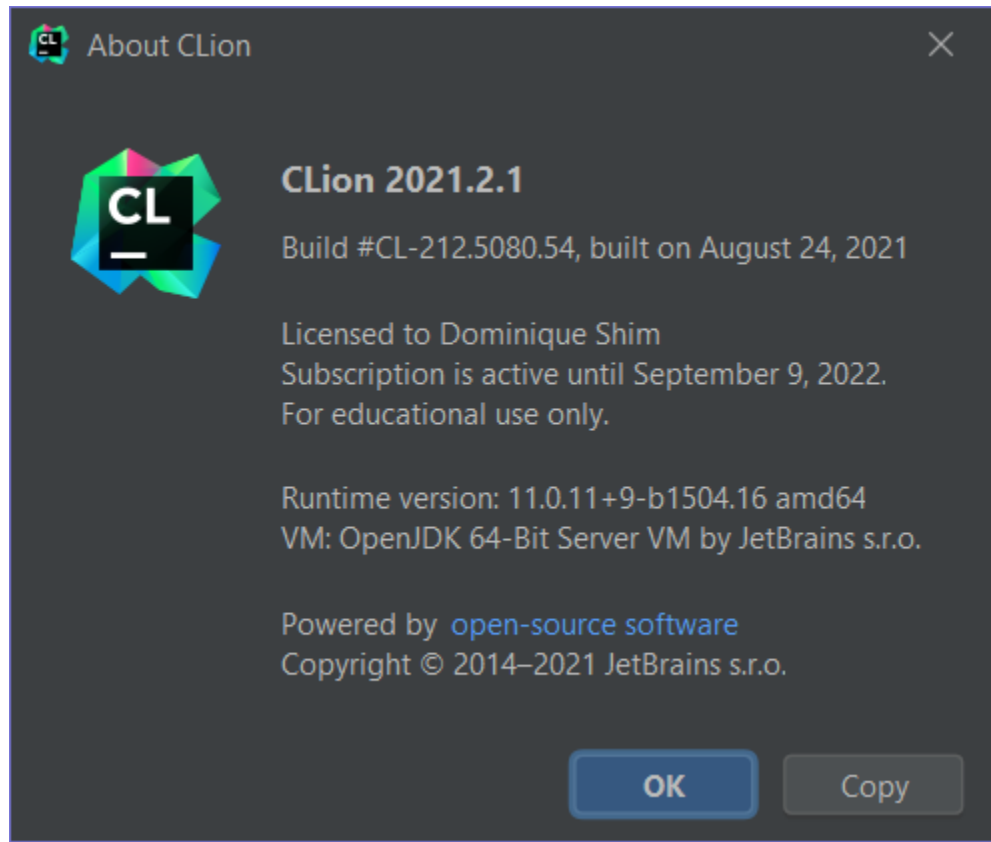
Name: Dominique Shim

Section: 02

IDE Used

IDE: CLion

IDE Version: 2021.2.1



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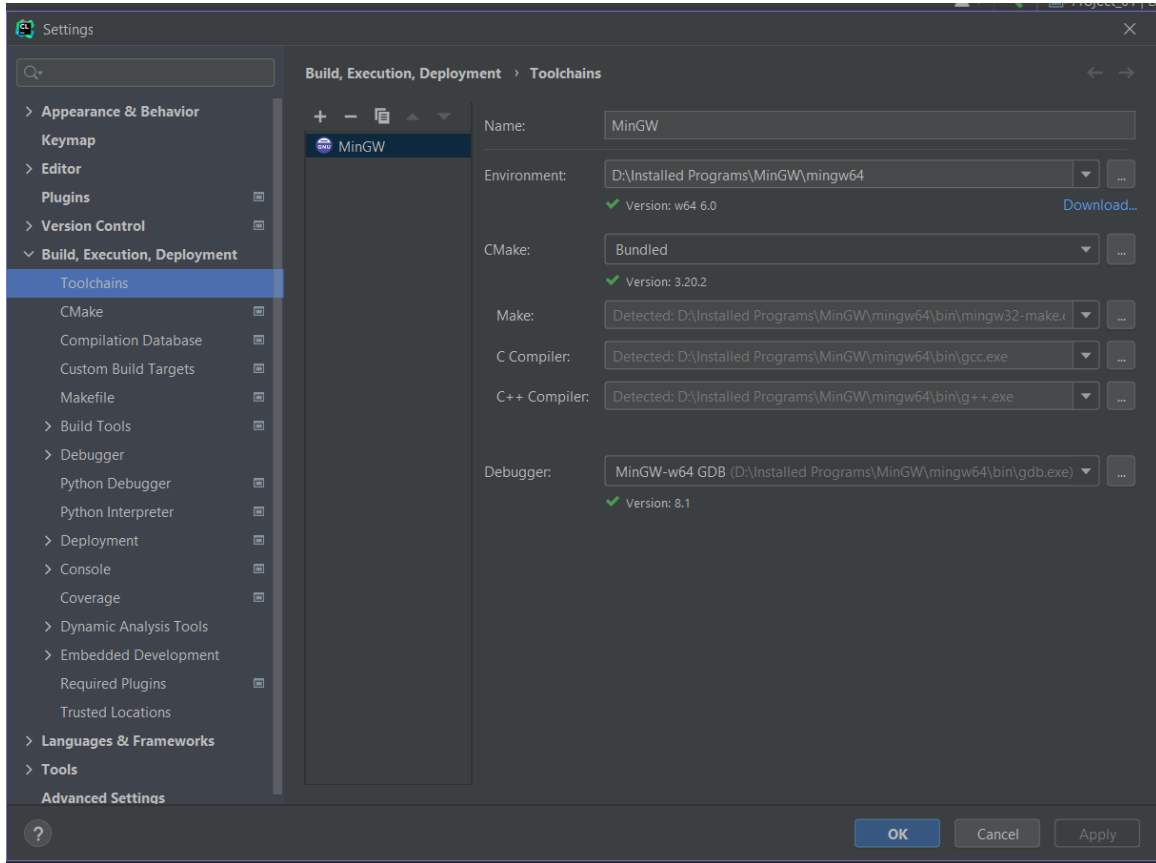
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Environment

Environment for IDE: MinGW

Compile: G++

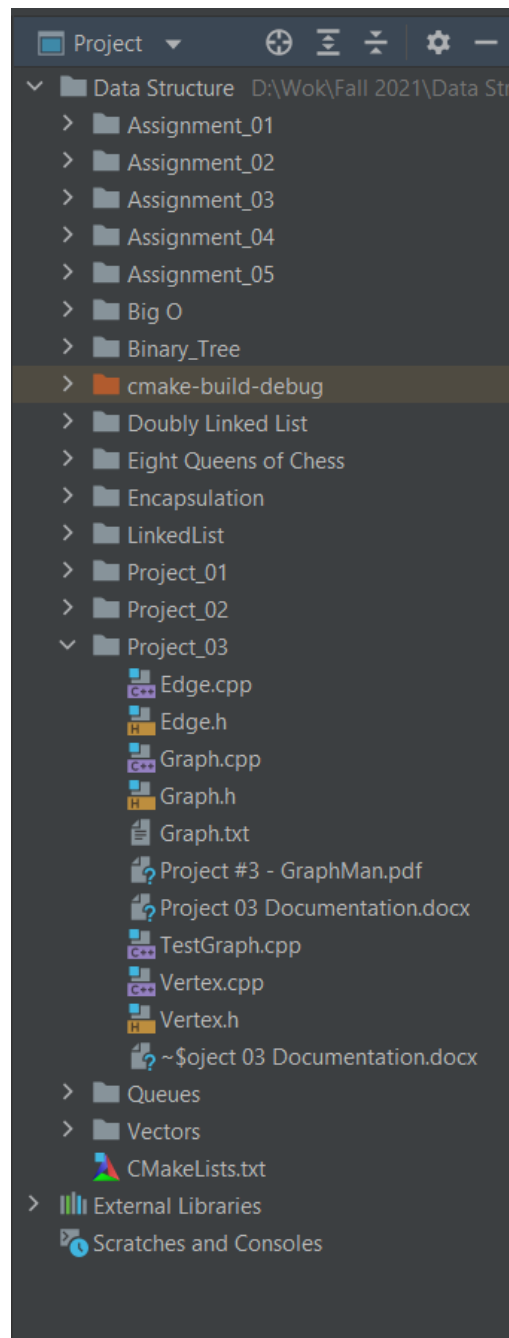


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File Directory

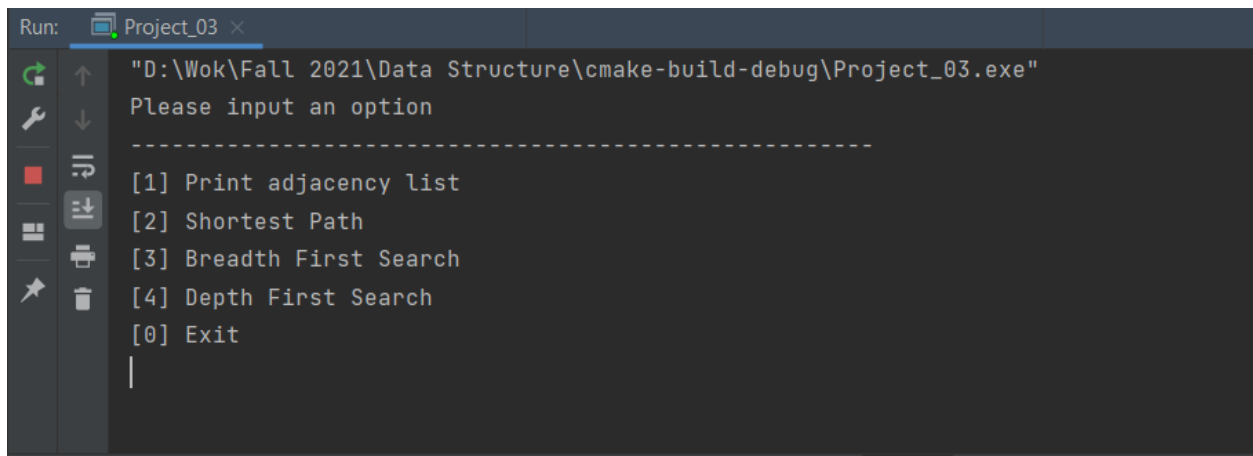


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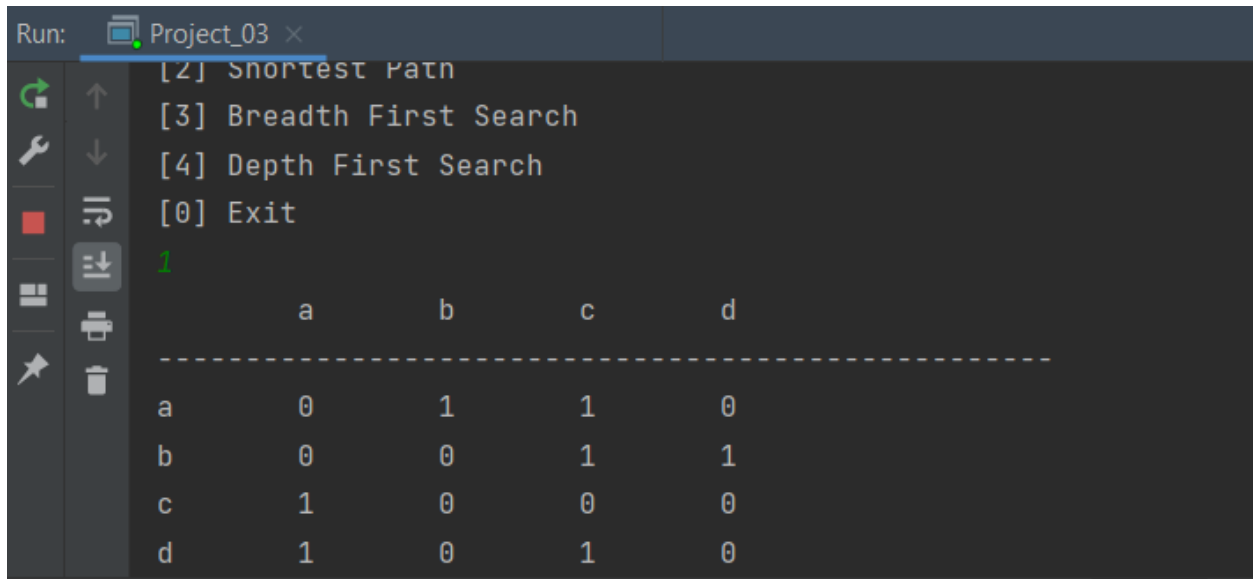
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Testing



```
Run: Project_03 x
"D:\Wok\Fall 2021\Data Structure\cmake-build-debug\Project_03.exe"
Please input an option
-----
[1] Print adjacency list
[2] Shortest Path
[3] Breadth First Search
[4] Depth First Search
[0] Exit
|
```

Startup showing the UI and the options that the user has



```
Run: Project_03 x
[2] Shortest Path
[3] Breadth First Search
[4] Depth First Search
[0] Exit
1
-----
a      b      c      d
-----
a      0      1      1      0
b      0      0      1      1
c      1      0      0      0
d      1      0      1      0
```

Performing the adjacency list.

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```
Run: Project_03 x
[1] Print adjacency list
[2] Shortest Path
[3] Breadth First Search
[4] Depth First Search
[0] Exit
2
Please input a starting vertex:a
Please input an ending vertex:c
The path with the smallest cost to reach c is: a1
a3
```

The program finding the shortest route from node a to node c, displaying the best path.

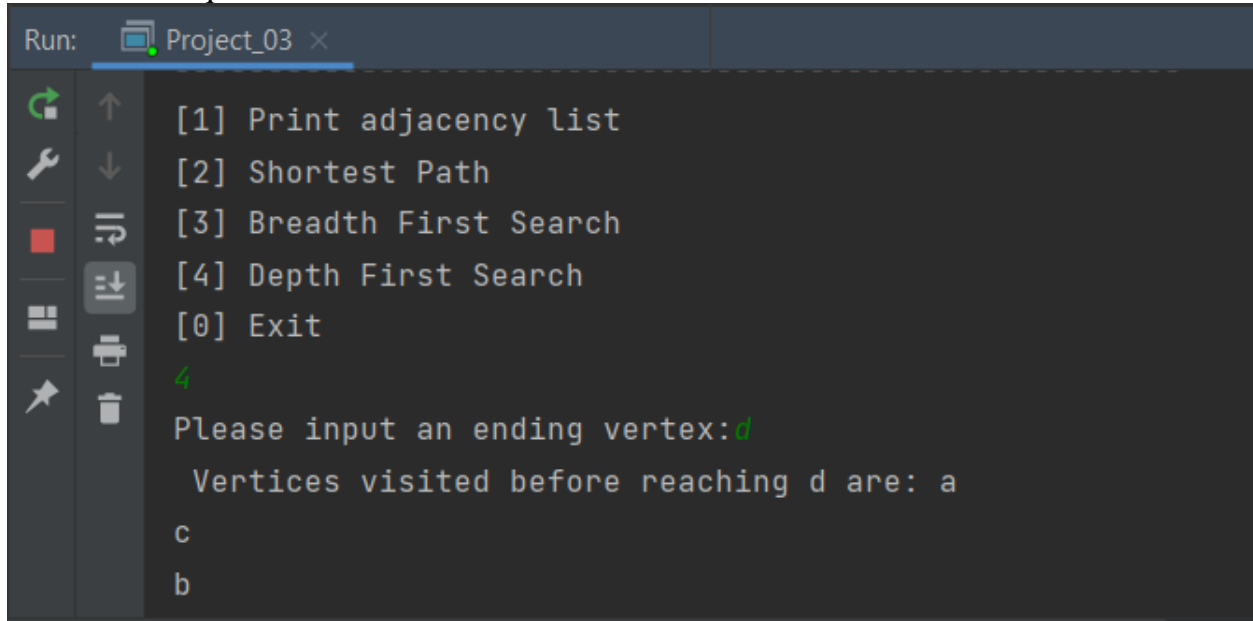
```
Run: Project_03 x
[1] Print adjacency list
[2] Shortest Path
[3] Breadth First Search
[4] Depth First Search
[0] Exit
3
Please input an ending vertex:d
Vertices visited before reaching d are: a
b
c
```

Performing a breadth first search.

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```
Run: Project_03 x
[1] Print adjacency list
[2] Shortest Path
[3] Breadth First Search
[4] Depth First Search
[0] Exit
4
Please input an ending vertex:d
  Vertices visited before reaching d are: a
  c
  b
```

Performing a Depth First Search.