هر دو برنامه به زبان جاوا ورژن 11.0.2 هستند.

پس از اجرای برنامه، لازم است مختصات دو خانهی مبدا و مقصد به برنامه ورودی داده شود.

## خروجيهاي الگوريتم UCS:

.app/Contents/bin" -Dfile.encoding=UTF-8 -classpath "/Users/sarababaei/Desktop/Sara/Study/Programing/CS 97/AI/Homeworks/HW01/Codes/UCS/out/production/UCS" Main Coordinates of beginning: 0 0 Coordinates of destination: 23 24 (0, 0)  $\rightarrow$  (0, 1)  $\rightarrow$  (0, 2)  $\rightarrow$  (0, 3)  $\rightarrow$  (0, 4)  $\rightarrow$  (0, 5)  $\rightarrow$  (0, 6)  $\rightarrow$  (0, 7)  $\rightarrow$  (0, 8)  $\rightarrow$  (0, 9)  $\rightarrow$  (0, 10)  $\rightarrow$  (0, 11)  $\rightarrow$  (0, 12)  $\rightarrow$  (0, 13)  $\rightarrow$  (0, 14)  $\rightarrow$  (0, 15)  $\rightarrow$  (0, 16)  $\rightarrow$  (0, 17)  $\rightarrow$  (0, 18)  $\rightarrow$  (0, 19)  $\rightarrow$  (0, 20)  $\rightarrow$  (0, 20)  $\rightarrow$  (0, 21)  $\rightarrow$  (0, 22)  $\rightarrow$  (0, 23)  $\rightarrow$  (1, 23)  $\rightarrow$  (2, 23)  $\rightarrow$  (3, 24)  $\rightarrow$  (12, 24)  $\rightarrow$  (5, 24)  $\rightarrow$  (6, 24)  $\rightarrow$  (7, 24)  $\rightarrow$  (8, 24)  $\rightarrow$  (9, 24)  $\rightarrow$  (10, 24)  $\rightarrow$  (11, 24)  $\rightarrow$  (12, 24)  $\rightarrow$  (13, 24)  $\rightarrow$  (14, 24)  $\rightarrow$  (15, 24)  $\rightarrow$  (16, 24)  $\rightarrow$  (17, 24)  $\rightarrow$  (18, 24)  $\rightarrow$  (19, 24)  $\rightarrow$  (20, 24)  $\rightarrow$  (21, 24)  $\rightarrow$  (22, 24)  $\rightarrow$  (23, 24) Process finished with exit code 0

/Library/Java/JavaVirtualMachines/idk-11.0.2.idk/Contents/Home/bin/java "-javaagent:/Applications/IntelliJ IDEA CE.app/Contents/lib/idea rt.jar=50531:/Applications/IntelliJ IDEA CE.app/Contents/Library/JavaVirtualMachines/idk-11.0.2.idk/Contents/Home/bin/java "-javaagent:/Applications/IntelliJ IDEA CE.app/Contents/Library/JavaVirtualMachines/idk-11.0.2.idk/Contents/Home/bin/java "-javaagent:/Applications/IntelliJ IDEA CE.app/Contents/Library/JavaVirtualMachines/idk-11.0.2.idk/Contents/Library/JavaVirtualMachines/idk-11.0.2.idk/Contents/Home/bin/java "-javaagent:/Applications/IntelliJ IDEA CE.app/Contents/Library/JavaVirtualMachines/Idk-11.0.2.idk/Contents/Library/JavaVirtualMachines/Idk-11.0.2.idk/Contents/Library/JavaVirtualMachines/Idk-11.0.2.idk/Contents/Library/JavaVirtualMachines/Idk-11.0.2.idk/Contents/Library/JavaVirtualMachines/Idk-11.0.2.idk/Contents/Library/JavaVirtualMachines/Idk-11.0.2.idk/Contents/Library/JavaVirtualMachines/Idk-11.0.2.idk/Contents/Library/JavaVirtualMachines/Idk-11.0.2.idk/Contents/Library/JavaVirtualMachines/Library/Ja

/Library/Java/Java/Java/IrtualMachines/jdk-11.0.2.jdk/Contents/Home/bin/java "-javaagent:/Applications/IntelliJ IDEA CE .app/Contents/bin" -Dfile.encoding=UTF-8 -classpath "/Users/sarababaei/Desktop/Sara/Study/Programing/CS 97/AI/Homeworks/HW01/Codes/UCS/out/production/UCS" Main Coordinates of beginning: 17 1 
Coordinates of destination: 17 29 
(17, 1)  $\rightarrow$  (18, 1)  $\rightarrow$  (19, 1)  $\rightarrow$  (20, 1)  $\rightarrow$  (21, 1)  $\rightarrow$  (22, 1)  $\rightarrow$  (22, 2)  $\rightarrow$  (22, 3)  $\rightarrow$  (22, 4)  $\rightarrow$  (23, 4)  $\rightarrow$  (24, 4)  $\rightarrow$  (24, 5)  $\rightarrow$  (24, 6)  $\rightarrow$  (24, 7)  $\rightarrow$  (24, 8)  $\rightarrow$  (24, 9)  $\rightarrow$  (24, 10)  $\rightarrow$  (24, 11)  $\rightarrow$  (24, 12)  $\rightarrow$  (24, 13)  $\rightarrow$  (24, 14)  $\rightarrow$  (24, 15)  $\rightarrow$  (24, 16)  $\rightarrow$  (24, 17)  $\rightarrow$  (24, 18)  $\rightarrow$  (24, 20)  $\rightarrow$  (24, 21)  $\rightarrow$  (24, 22)  $\rightarrow$  (24, 23)  $\rightarrow$  (24, 25)  $\rightarrow$  (24, 26)  $\rightarrow$  (27, 26)  $\rightarrow$  (27, 26)  $\rightarrow$  (27, 26)  $\rightarrow$  (28, 26)  $\rightarrow$  (29, 26)  $\rightarrow$  (21, 26)  $\rightarrow$  (19, 26)  $\rightarrow$  (19, 26)  $\rightarrow$  (18, 26)  $\rightarrow$  (17, 26)  $\rightarrow$  (16, 26)  $\rightarrow$  (15, 26)  $\rightarrow$  (14, 27)  $\rightarrow$  (14, 28)  $\rightarrow$  (14, 29)  $\rightarrow$  (15, 29)  $\rightarrow$  Process finished with exit code 0

## خروجيهاي الگوريتم \*A:

```
/Library/Java/JavaVirtualMachines/jdk-11.0.2.jdk/Contents/Home/bin/java "-javaagent:/Applications/IntelliJ IDEA CE .app/Contents/lib/idea_rt.jar=50524:/Applications/IntelliJ IDEA CE .app/Contents/bin" -Dfile.encoding=UTF-8 -classpath "/Users/sarababaei/Desktop/Sara/Study/Programing/CS 97/AI/Homeworks/HW01/Codes/AStar/out/production/AStar" Main Coordinates of beginning:
17 1
Coordinates of destination:
17 29
(17, 1) -> (18, 1) -> (19, 1) -> (20, 1) -> (21, 1) -> (22, 1) -> (22, 2) -> (22, 3) -> (22, 4) -> (23, 4) -> (24, 4) -> (24, 5) -> (24, 6) -> (24, 7) -> (24, 8) -> (24, 9) -> (24, 10) -> (24, 11) -> (24, 12) -> (24, 13) -> (24, 14) -> (24, 15) -> (24, 16) -> (24, 17) -> (24, 18) -> (24, 19) -> (24, 20) -> (24, 21) -> (24, 22) -> (24, 23) -> (24, 24) -> (24, 25) -> (24, 26) -> (22, 26) -> (22, 26) -> (21, 26) -> (20, 26) -> (19, 26) -> (18, 26) -> (17, 26) -> (16, 26) -> (15, 26) -> (14, 26) -> (14, 27) -> (14, 28) -> (14, 29) -> (15, 29) -> (16, 29) -> (17, 29)
Process finished with exit code 0
```