1. Introduction of the program

The program is in the file “AI\_QifanZhang\_P1.py”.

~/ AI\_QifanZhang\_P1.py ~/graphs/e.txt ~/graphs/v.txt should be but before execution.

For example,

Project ------ AI\_QifanZhang\_P1.py

|

| ------ graphs ------- v.txt

|

| ------- e.txt

Numpy and Pandas should be prepared in the python3 environment.

In the bash, input “python3 AI\_QifanZhang\_P1.py”, then there will be the result.

1. Performance comparison

A\* Algorithm is faster than the Dijkstra Algorithm about 2 times.

Dijkstra always outputs optimal path. Sometimes A\* Algorithm doesn’t output the optimal path, because h doesn’t strictly less than h\* in this program. In small graph, such as the 100 vertices graph, the accuracy is closely 100% in A\*.