FIRST ATTEMPT

Base heuristic runtime: 33.369882345199585

Base heuristic solution cost: 19

Advanced heuristic runtime: 73.65212082862854

Advanced heuristic solution cost: 19

Base heuristic runtime: 3.849059581756592

Base heuristic solution cost: 15

Advanced heuristic runtime: 56.82459473609924

Advanced heuristic solution cost: 15

CHANGE – INSTEAD OF DEEP COPY RECREATE MAP

First attempt

Base heuristic runtime: 28.430405378341675

Base heuristic solution cost: 19

Advanced heuristic runtime: 67.39570093154907

Advanced heuristic solution cost: 19

Base heuristic runtime: 3.505910873413086

Base heuristic solution cost: 15

Advanced heuristic runtime: 52.70297622680664

Advanced heuristic solution cost: 15

Second attempt

Base heuristic runtime: 28.1750807762146

Base heuristic solution cost: 19

Advanced heuristic runtime: 67.50087356567383

Advanced heuristic solution cost: 19

Base heuristic runtime: 3.489649772644043

Base heuristic solution cost: 15

Advanced heuristic runtime: 52.35695242881775

Advanced heuristic solution cost: 15

CONCLUSION THE CHANGE MAKES IT FASTER

SECOND CHANGE – PRECOMPUTE MOVEMENTS WHEN CREATING A STATE INSTEAD OF IN GET NEIGHBORS

First attempt

Base heuristic runtime: 28.8104088306427

Base heuristic solution cost: 19

Advanced heuristic runtime: 70.30004787445068

Advanced heuristic solution cost: 19

Base heuristic runtime: 3.5797805786132812

Base heuristic solution cost: 15

Advanced heuristic runtime: 53.93865370750427

Advanced heuristic solution cost: 15

Second attempt

Base heuristic runtime: 29.13127827644348

Base heuristic solution cost: 19

Advanced heuristic runtime: 69.08460569381714

Advanced heuristic solution cost: 19

Base heuristic runtime: 3.507356882095337

Base heuristic solution cost: 15

Advanced heuristic runtime: 53.02803659439087

Advanced heuristic solution cost: 15

CONCLUSION THE CHANGE MAKES IT SLIGHTLY SLOWER…CANCLE

THIRD CHANGE – OPTIMIZE HEURISTICS BY REDUCING DIRECT ACCESS TO PARAMETERS

First attempt

Base heuristic runtime: 27.88061285018921

Base heuristic solution cost: 19

Advanced heuristic runtime: 67.4410891532898

Advanced heuristic solution cost: 19

Base heuristic runtime: 3.5032055377960205

Base heuristic solution cost: 15

Advanced heuristic runtime: 53.123189210891724

Advanced heuristic solution cost: 15

Second attempt

Base heuristic runtime: 28.27279782295227

Base heuristic solution cost: 19

Advanced heuristic runtime: 66.54979705810547

Advanced heuristic solution cost: 19

Base heuristic runtime: 3.4422340393066406

Base heuristic solution cost: 15

Advanced heuristic runtime: 51.880035638809204

Advanced heuristic solution cost: 15

CONCLUSION overall a small reduction