Documentatie – Problema blocurilor

Apelul programului:

Programul este apelat cu parametrii: fisierul de input, fisierul de output, numarul de solutii si durata pana la timeout.

Exemplu de apelare: python .\main.py input2.txt output.txt 3 2

Euristicile folosite:

-euristica1: se calculeaza numarul minim de blocuri care mai trebuie mutate pana la starea finala.

-euristica2: se calculeaza costul minim al mutarii blocurilor pana la starea finala.

Fisier de input:

- care nu are solutii:

1  
cub(a),cub(b),cub(g),piramida(c)  
cub(i),sfera(e),sfera(f),piramida(k)  
cub(h),cub(d),cub(j)  
cub(k),cub(l),cub(m),piramida(n)

-in care starea initiala e si cea finala:

0  
cub(a),cub(b),cub(g),piramida(c)  
cub(i),sfera(e),sfera(f),piramida(k)  
cub(h),cub(d),piramida(j)

-care nu se blocheaza pe nici un algoritm:

2  
cub(a),cub(b),cub(g),piramida(c)  
cub(i),sfera(e),sfera(f),piramida(k)  
cub(h),cub(d),cub(j)  
*#*cub(l),piramida(m)

-care se blocheaza la un algortim la timeout si la altul nu:

2  
cub(a),cub(b),cub(g),piramida(c)  
cub(i),sfera(e),sfera(f),piramida(k)  
cub(h),cub(d),cub(j)  
*#*cub(l),piramida(m)

La depth\_first cu durata pana la timeout de o secunda nu se blocheaza, iar la uniform\_cost cu aceeasi durata pana la timeout se blocheaza.

Input1:

*python .\main.py input2.txt output.txt 1 10 #input1*

|  |  |  |  |
| --- | --- | --- | --- |
| Algoritm | Lungime drum | Cost drum | Timp drum(s) |
| BF | 4 | 4 | 0.387 |
| DF | 27 | 35 | 0.038 |
| DFI | 4 | 4 | 0.075 |
| Uniform\_cost | 4 | 4 | 0.446 |
| A\* euristica banala | 4 | 4 | 0.247 |
| A\* euristica1 | 4 | 4 | 0.023 |
| A\* euristica2 | 4 | 4 | 0.005 |
| Greedy euristica banala | 4 | 4 | 0.006 |
| Greedy euristica1 | 6 | 7 | 0.006 |
| Greedy euristica2 | 6 | 7 | 0.007 |

Input2:

*python .\main.py inputTabel2.txt output.txt 1 10 #input1*

|  |  |  |  |
| --- | --- | --- | --- |
| Algoritm | Lungime drum | Cost drum | Timp drum(s) |
| BF | 4 | 4 | 0.351 |
| DF | 9 | 11 | 0.010 |
| DFI | 4 | 4 | 0.064 |
| Uniform\_cost | 4 | 4 | 0.433 |
| A\* euristica banala | 4 | 4 | 0.241 |
| A\* euristica1 | 4 | 4 | 0.200 |
| A\* euristica2 | 4 | 4 | 0.008 |
| Greedy euristica banala | 14 | 20 | 0.019 |
| Greedy euristica1 | 6 | 7 | 0.007 |
| Greedy euristica2 | 6 | 7 | 0.006 |