

How to run:

I ran my codes on my laptop in a 64-bit Linux system with the “-solver chaff” option. In order to use chaff, the unzipped zchaff should be put in the blackbox directory(I have put the zchaff in the folder ‘myCodes’).

The file named “domain.pddl” is the domain file I wrote for star puzzle, “star4.pddl”, “star5.pddl” and “star6.pddl” are problem files respectively for the problem with 4, 5 and 6 disks.

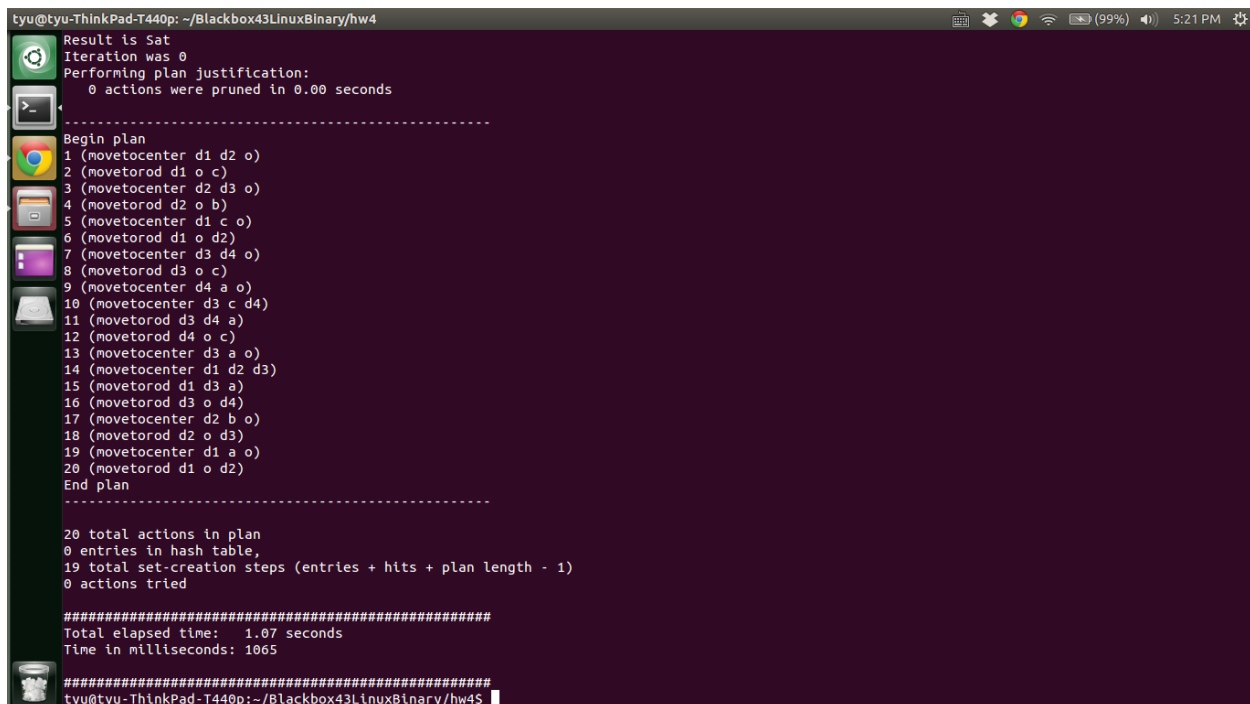
Put the 4 pddl files and zchaff all in the root directory of blackbox, then try the following command:

blackbox -o domain.pddl -f star4.pddl -solver chaff

You will get the planning result for 4 disks star puzzle problem. And then replace “star4.pddl” with “star5.pddl” and “star6.pddl” respectively; you can get the planning results for 5 and 6 disks problems.

The results screenshot when I run my codes on my laptop are showed below:

4 disks:



```
tyu@tyu-ThinkPad-T440p: ~/Blackbox43LinuxBinary/hw4
Result is Sat
Iteration was 0
Performing plan justification:
  0 actions were pruned in 0.00 seconds
-----
Begin plan
1 (movetocenter d1 d2 o)
2 (movetorod d1 o c)
3 (movetocenter d2 d3 o)
4 (movetorod d2 o b)
5 (movetocenter d1 c o)
6 (movetorod d1 o d2)
7 (movetocenter d3 d4 o)
8 (movetorod d3 o c)
9 (movetocenter d4 a o)
10 (movetocenter d3 c d4)
11 (movetorod d3 d4 a)
12 (movetorod d4 o c)
13 (movetocenter d3 a o)
14 (movetocenter d1 d2 d3)
15 (movetorod d1 d3 a)
16 (movetorod d3 o d4)
17 (movetocenter d2 b o)
18 (movetorod d2 o d3)
19 (movetocenter d1 a o)
20 (movetorod d1 o d2)
End plan
-----
20 total actions in plan
0 entries in hash table,
19 total set-creation steps (entries + hits + plan length - 1)
0 actions tried

#####
Total elapsed time:  1.07 seconds
Time in milliseconds: 1065

#####
tyu@tyu-ThinkPad-T440p:~/Blackbox43LinuxBinary/hw4$
```

5 disks:

```
tyu@tyu-ThinkPad-T440p: ~/Blackbox43LinuxBinary/hw4
1 (movetocenter d1 d2 o)
2 (movetorod d1 o c)
3 (movetocenter d2 d3 o)
4 (movetorod d2 o b)
5 (movetocenter d3 d4 o)
6 (movetocenter d2 b d3)
7 (movetorod d2 d3 d4)
8 (movetorod d3 o b)
9 (movetocenter d2 d4 o)
10 (movetorod d2 o d3)
11 (movetocenter d1 c o)
12 (movetorod d1 o d2)
13 (movetocenter d4 d5 o)
14 (movetorod d4 o c)
15 (movetocenter d5 a o)
16 (movetocenter d4 c d5)
17 (movetorod d4 d5 a)
18 (movetorod d5 o c)
19 (movetocenter d4 a o)
20 (movetorod d4 o d5)
21 (movetocenter d1 d2 o)
22 (movetorod d1 o a)
23 (movetocenter d2 d3 o)
24 (movetorod d2 o d4)
25 (movetocenter d3 b o)
26 (movetocenter d2 d4 d3)
27 (movetorod d2 d3 b)
28 (movetorod d3 o d4)
29 (movetocenter d2 b o)
30 (movetorod d2 o d3)
31 (movetocenter d1 a o)
32 (movetorod d1 o d2)
End plan
-----
32 total actions in plan
0 entries in hash table,
31 total set-creation steps (entries + hits + plan length - 1)
0 actions tried
#####
```

List of resource used:

1. a nice pddl tutorial which helped me a lot:

<http://www.cs.rochester.edu/~kautz/satplan/blackbox/patrik-haslum-writing-pddl.html>

2. a short but helpful introduction with example code for pddl:

<http://www.cs.toronto.edu/~sheila/2542/w09/A1/introtopddl2.pdf>

3. the zchaff website:

<https://www.princeton.edu/~chaff/zchaff.html>

Aggie Code of honor

An Aggie does not lie, cheat or steal or tolerate those who do.