Artificial Intelligence
Programming Assignment 2

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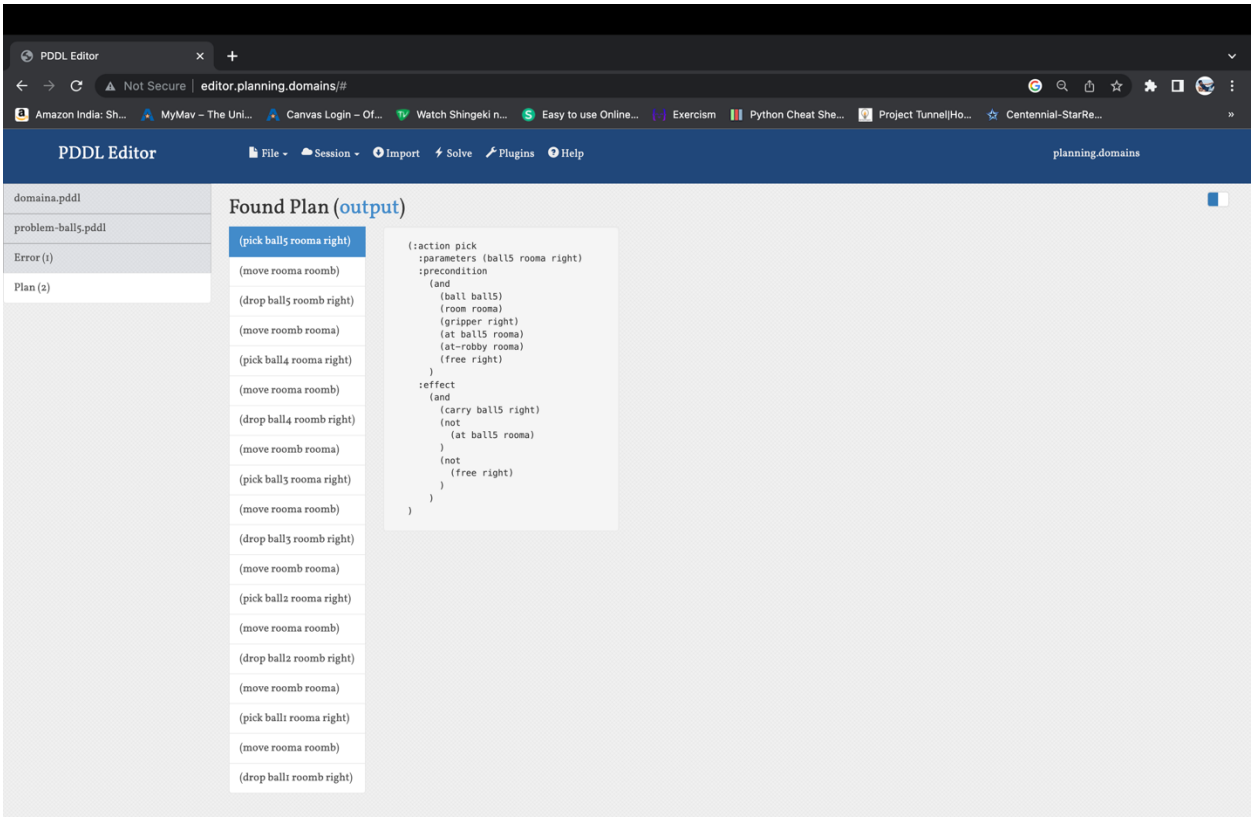
Problem 1 Pick and Place Task

For the given problem I have modified the PDDL code which is given in the lecture slides and allowed to compute 5balls and 10 balls accordingly. I have generated the report plan for both and provided the screenshots of the same below.

Plan for 5 Balls:

(pick ball5 rooma right)
(move rooma roomb)
(drop ball5 roomb right)
(move roomb rooma)
(pick ball4 rooma right)
(move rooma roomb)
(drop ball4 roomb right)
(move roomb rooma)
(pick ball3 rooma right)
(move rooma roomb)
(drop ball3 roomb right)
(move roomb rooma)
(pick ball2 rooma right)
(move rooma roomb)
(drop ball2 roomb right)
(move roomb rooma)
(pick ball1 rooma right)
(move rooma roomb)
(drop ball1 roomb right)

Screenshot:

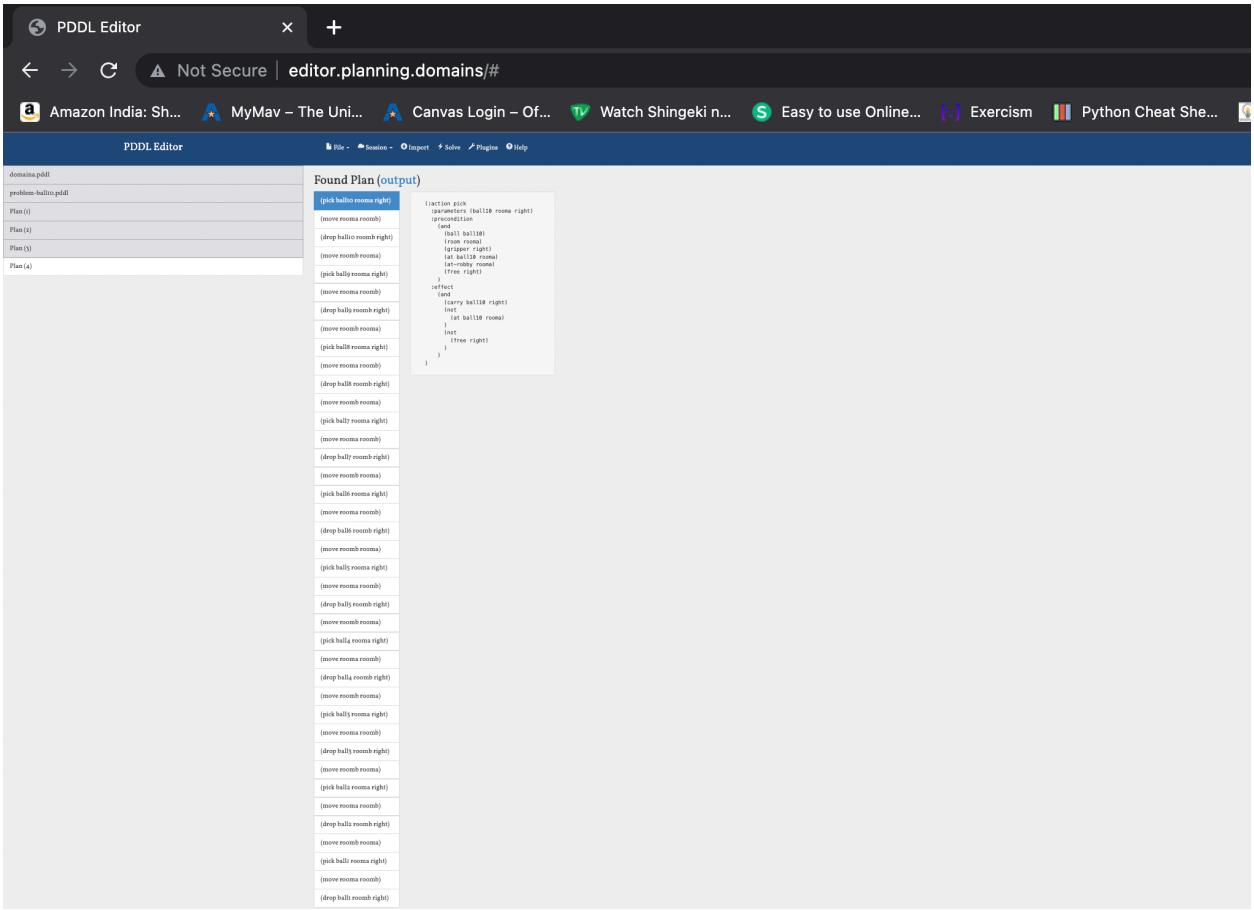

PDDL Editor
Not Secure | editor.planning.domains/#
Amazon India: Sh...
MyMav – The Uni...
Canvas Login – Of...
Watch Shingeki n...
Easy to use Online...
Exercism
Python Cheat She...
Project TunnelHo...
Centennial-StarRe...
PDDL Editor
File
Session
Import
Solve
Plugins
Help
planning.domains
domaina.pddl
problem-ball5.pddl
Error (1)
Plan (2)
Found Plan (output)
(pick ball5 rooma right)
(move rooma roomb)
(drop ball5 roomb right)
(move roomb rooma)
(pick ball4 rooma right)
(move rooma roomb)
(drop ball4 roomb right)
(move roomb rooma)
(pick ball3 rooma right)
(move rooma roomb)
(drop ball3 roomb right)
(move roomb rooma)
(pick ball2 rooma right)
(move rooma roomb)
(drop ball2 roomb right)
(move roomb rooma)
(pick ball1 rooma right)
(move rooma roomb)
(drop ball1 roomb right)
(:action pick
:parameters (ball5 rooma right)
:precondition
(and
(ball ball5)
(room rooma)
(gripper right)
(at ball5 rooma)
(at-robby rooma)
(free right)
)
:effect
(and
(carry ball5 right)
(not
(at ball5 rooma)
)
(not
(free right)
)
)
)

Plan for 10 Balls:

(pick ball10 rooma right)
(move rooma roomb)
(drop ball10 roomb right)
(move roomb rooma)
(pick ball9 rooma right)
(move rooma roomb)
(drop ball9 roomb right)
(move roomb rooma)
(pick ball8 rooma right)
(move rooma roomb)
(drop ball8 roomb right)
(move roomb rooma)
(pick ball7 rooma right)
(move rooma roomb)
(drop ball7 roomb right)
(move roomb rooma)
(pick ball6 rooma right)
(move rooma roomb)
(drop ball6 roomb right)
(move roomb rooma)
(pick ball5 rooma right)
(move rooma roomb)
(drop ball5 roomb right)
(move roomb rooma)
(pick ball4 rooma right)
(move rooma roomb)
(drop ball4 roomb right)
(move roomb rooma)
(pick ball3 rooma right)
(move rooma roomb)
(drop ball3 roomb right)
(move roomb rooma)
(pick ball2 rooma right)
(move rooma roomb)
(drop ball2 roomb right)
(move roomb rooma)
(pick ball1 rooma right)
(move rooma roomb)

(drop ball1 roomb right)

Output:



Problem 2 Package Delivery Task

For the given problem I have modified the provided PDDL code and added up a third driver driver3, third truck truck3, fourth location s3 and specified the goal accordingly.

Plan:

(board-truck driver3 truck2 s1)
(drive-truck truck2 s1 s0 driver3)
(walk driver1 s2 p1-2)
(walk driver1 p1-2 s1)
(load-truck package1 truck3 s1)
(walk driver2 s2 p2-0)
(walk driver2 p2-0 s0)
(board-truck driver1 truck3 s1)
(drive-truck truck3 s1 s2 driver1)
(unload-truck package1 truck3 s2)
(disembark-truck driver1 truck3 s2)
(walk driver1 s2 p1-2)
(walk driver1 p1-2 s1)

Output: