

HW3_Report

Below is the screenshot of my planning results. (The explanation is on the next page)

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linux.cs.duke.edu - PuTTY
lwei@linux15> ls
./          family-2.pddl  family-4.pddl~  ff*
../         family-3.pddl  family-domain.pddl  hanoi-3.pddl
family-1.pddl family-4.pddl family-domain.pddl~ hanoi-domain.pddl
lwei@linux15> ./ff -o family-domain.pddl -f family-4.pddl

ff: parsing domain file
domain 'FAMILY-DOMAIN' defined
... done.
ff: parsing problem file
problem 'FAMILY-4' defined
... done.

got 75 facts

Cueing down from goal distance:    7 into depth [1]
                                   6          [1]
                                   5          [1]
                                   3          [1]
                                   2          [1]
                                   1          [1]
                                   0

ff: found legal plan as follows

step    0: GIVE-BIRTH-TO-DAUGHTER P2 P1 P5
        1: GIVE-BIRTH-TO-DAUGHTER P2 P5 P4
        2: GIVE-BIRTH-TO-SON P2 P4 P3
        3: CONCLUDE-SIBLINGS P2 P3 P5
        4: CONCLUDE-UNCLE-AUNT-NEPHEW-NIECE P3 P5 P4
        5: CONCLUDE-GRANDUNCLE-GRANDAUNT P3 P4 P3

time spent:    0.00 seconds instantiating 625 easy, 0 hard action templates
              0.00 seconds reachability analysis, yielding 77 facts and 195 act
ions
              0.00 seconds creating final representation with 75 relevant facts
              0.00 seconds building connectivity graph
              0.00 seconds searching, evaluating 15 states, to a max depth of 1
              0.00 seconds total time

lwei@linux15> █
```

Explanation:

P2 and P1 are parents of P5 (daughter)

P2 and P5 are parents of P4 (daughter)

P2 and P4 are parents of P3 (son)

We can conclude that P3 and P5 are siblings because they have the same parent P2.

We can further conclude that P3 is P4's uncle. The reason is that P4 is a daughter of P5 and P3 and P5 are siblings.

As a result, due to the fact that P4's uncle is P3 and P4 is the parent of P3, we can conclude that P3 is his own granduncle.