

Solving Air Cargo Problem 4 using breadth_first_search...

Actions Expansions Goal Tests New Nodes

104 99736 114953 944130

Plan length: 14 Time elapsed in seconds: 53.298286861

Load(C1, P1, SFO)

Fly(P1, SFO, ATL)

Load(C3, P1, ATL)

Fly(P1, ATL, ORD)

Load(C4, P1, ORD)

Load(C5, P1, ORD)

Fly(P1, ORD, JFK)

Load(C2, P1, JFK)

Unload(C1, P1, JFK)

Unload(C3, P1, JFK)

Unload(C5, P1, JFK)

Fly(P1, JFK, SFO)

Unload(C2, P1, SFO)

Unload(C4, P1, SFO)

Solving Air Cargo Problem 4 using uniform_cost_search...

Actions Expansions Goal Tests New Nodes

104 113339 113341 1066413

Plan length: 14 Time elapsed in seconds: 60.13335769599999

Load(C2, P2, JFK)

Fly(P2, JFK, ATL)

Load(C3, P2, ATL)

Fly(P2, ATL, ORD)

Load(C4, P2, ORD)

Load(C5, P2, ORD)

Fly(P2, ORD, SFO)

Load(C1, P2, SFO)

Unload(C4, P2, SFO)

Unload(C2, P2, SFO)

Fly(P2, SFO, JFK)

Unload(C5, P2, JFK)

Unload(C3, P2, JFK)

Unload(C1, P2, JFK)

Solving Air Cargo Problem 4 using greedy_best_first_graph_search with h_unmet_goals...

Actions Expansions Goal Tests New Nodes

104 29 31 280

Plan length: 18 Time elapsed in seconds: 0.02978627100000608

Load(C1, P1, SFO)

Load(C2, P2, JFK)

Fly(P2, JFK, SFO)

Unload(C2, P2, SFO)

Fly(P2, SFO, ORD)

Load(C4, P2, ORD)

Load(C5, P2, ORD)

Fly(P2, ORD, SFO)

Unload(C4, P2, SFO)

Fly(P2, SFO, JFK)

Unload(C5, P2, JFK)

Fly(P2, JFK, ATL)

Load(C3, P2, ATL)

Fly(P2, ATL, JFK)

Unload(C3, P2, JFK)

Fly(P2, JFK, SFO)

Fly(P1, SFO, JFK)

Unload(C1, P1, JFK)

Solving Air Cargo Problem 4 using greedy_best_first_graph_search with h_pg_levelsum...

Actions Expansions Goal Tests New Nodes

104 17 19 165

Plan length: 17 Time elapsed in seconds: 24.49367237300001

Fly(P2, JFK, ORD)
Load(C1, P1, SFO)
Fly(P1, SFO, JFK)
Unload(C1, P1, JFK)
Load(C2, P1, JFK)
Fly(P1, JFK, SFO)
Unload(C2, P1, SFO)
Fly(P1, SFO, ATL)
Load(C3, P1, ATL)
Fly(P1, ATL, JFK)
Unload(C3, P1, JFK)
Load(C4, P2, ORD)
Load(C5, P2, ORD)
Fly(P2, ORD, SFO)
Unload(C4, P2, SFO)
Fly(P2, SFO, JFK)
Unload(C5, P2, JFK)

Solving Air Cargo Problem 4 using astar_search with h_unmet_goals...

Actions Expansions Goal Tests New Nodes

104 34330 34332 328509

Plan length: 14 Time elapsed in seconds: 27.996657177999992

Load(C2, P2, JFK)
Fly(P2, JFK, ATL)
Load(C3, P2, ATL)
Fly(P2, ATL, ORD)
Load(C4, P2, ORD)
Load(C5, P2, ORD)
Fly(P2, ORD, SFO)
Unload(C4, P2, SFO)
Unload(C2, P2, SFO)
Load(C1, P2, SFO)
Fly(P2, SFO, JFK)
Unload(C5, P2, JFK)
Unload(C3, P2, JFK)
Unload(C1, P2, JFK)

Solving Air Cargo Problem 4 using astar_search with h_pg_levelsum...

Actions Expansions Goal Tests New Nodes

104 1208 1210 12210

Plan length: 15 Time elapsed in seconds: 1409.151632449

Load(C1, P1, SFO)
Fly(P1, SFO, ORD)
Load(C4, P1, ORD)
Load(C5, P1, ORD)
Fly(P1, ORD, JFK)
Unload(C5, P1, JFK)
Unload(C1, P1, JFK)
Load(C2, P1, JFK)
Fly(P1, JFK, SFO)
Fly(P2, JFK, ATL)
Load(C3, P2, ATL)
Fly(P2, ATL, JFK)
Unload(C4, P1, SFO)
Unload(C3, P2, JFK)
Unload(C2, P1, SFO)