CS747 - FILA

Programming Assignment 2

Name - Sudhir Kumar Roll No.- 170050053

Task 1 - MDP Planning Algorithms

Value Iteration:

Implemented algorithm in sepearte file vi.py
and called class functions from planner.py
Calculating Vt for each state
till Vt+1-Vt <precision
The precision used was 0.0000001
Obtained the policy,
from relationship between V*, Q*, Pi*

Howards Policy iteration:

similarily Implemented algorithm in sepearte file hpi.py

From transitions,
made a arbitrary policy
(took one of action that has a transtion)
After computing Q(s,a) for each action,
swapped the action in policy with better Q(s,a').
Continued further till better policy
other than current policy.

Linear Programming:

Implemented algorithm in sepearte file lp.py

Using the pulp library
Created n variables one for each state,
And added nk constraints
that we V* >= V(S), for each action.
Thus returns a V*,
further optimal policy could be computed
from argmax(Q(s,a)).