Machine learning in Robotics Assignment 2 Solution

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Exercise 1:
GMM Mean:
1: (-0.0195706594332669 , 0.0161876029528339)
2: (0.0495597984409083 , 0.0401614006994714)
3: (-0.0123372066076910 , -0.0316086326913516)
4: (-0.0195706598233600 , 0.0161876047788913)
GMM Cov:
val(:,:,1) =
0.0013 0.0002
0.0002 0.0032

val(:,:,2) =
0.0013 0.0002
0.0002 0.0032

val(:,:,3) =
0.0013 0.0002
0.0002 0.0032

val(:,:,4) =
0.0013 0.0002
0.0002 0.0032

GMM Prior:
1: 0.395260411442380
2:0.0795473247436510
3:0.255360155043184
4:0.269832108770785

Exercise 2:
All sequences are test sequence (10 test: 0 train)
Exercise 3:

Reward matrix:

```
[0 0 0 0;        %1
-5 10 -5 -5;     %2
0 -5 -5 -5;      %3
0 -5 0 0;        %4
-5 0 0 10;       %5
5 0 5 0;         %6
0 0 5 0;         %7
-5 0 0 0;        %8
-5 0 0 -5;       %9
5  0 0 0;       %10
0 -5 0 -5;       %11
-5 -5 0 -5;      %12
0 0 0 -5;        %13
0 0 -5 0;        %14
```

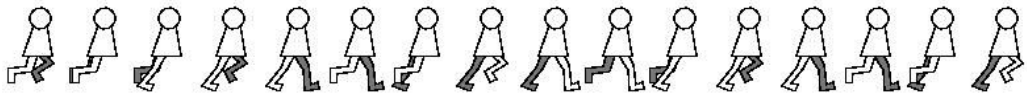
```
    0 -5 -5 -5;     %15
    0 0 0 0];       %16
```

gamma = 0 -> 1

When gamma is greater than 1, Policy-Iteration will take longer to converge.

Approximately Policy-Iteration takes 4->6 iterations.

Starting at state 10:



Starting at state 3: