Deep RL Assignment 4 Amin Ghafari Zeydabadi 25911193

Experiment 1:

The outcome of the model after using the random controller.

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|      Iteration |                 0 |
|    AverageCost |      4.91e+03 |
|       StdCost |               456 |
|    MinimumCost |    4.24e+03 |
|    MaximumCost |     5.5e+03 |
|  AverageReturn |              -298 |
|       StdReturn |              51.7 |
|  MinimumReturn |              -374 |
|  MaximumReturn |              -239 |
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```

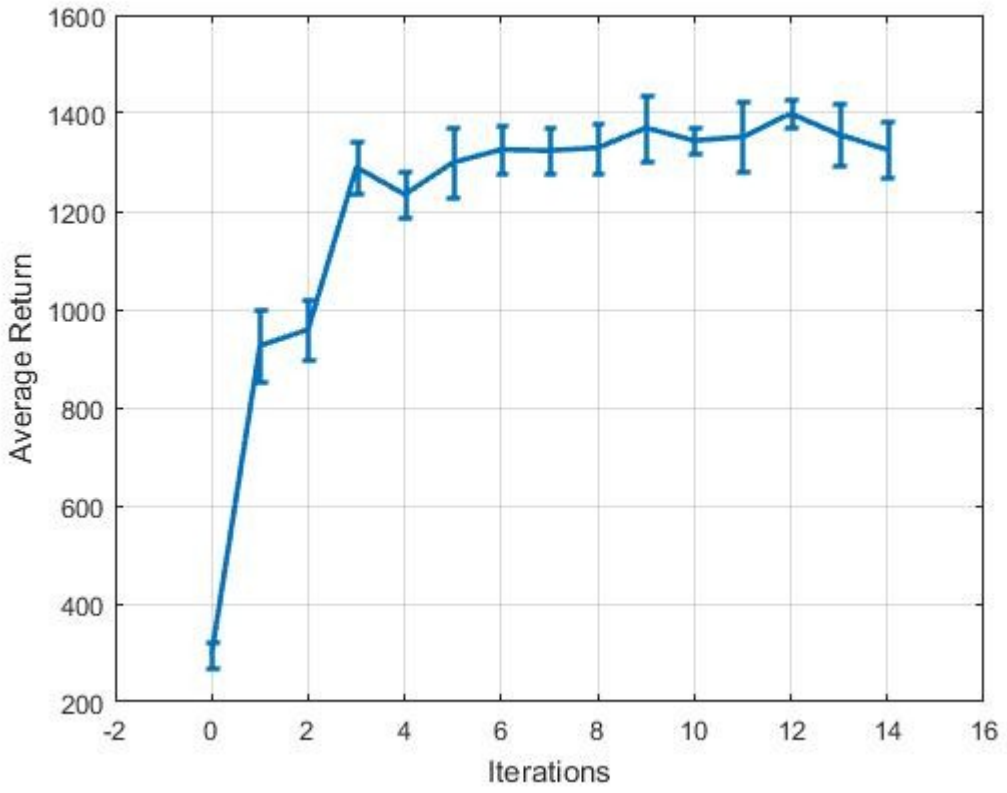
Experiment 2:

Run: python main.py –n 15

The output of iteration is like this

Iteration	Ave Cost	Std Cost	Min Cost	Max Cost	Ave Ret	Std Ret	Min Cost	Min Cost
0	-453.192	33.265	-527.565	-409.412	296.762	26.788	252.429	359.70
1	-1057.732	100.721	-1163.328	-797.504	925.893	74.299	724.598	996.99
2	-1091.201	93.007	-1224.434	-962.461	959.252	62.056	829.617	1053.60
3	-1468.792	45.802	-1564.154	-1385.671	1290.117	54.462	1180.504	1406.29
4	-1407.839	49.401	-1496.037	-1320.121	1234.221	45.496	1163.874	1322.73
5	-1481.133	66.709	-1619.123	-1387.164	1299.511	70.914	1205.151	1450.85
6	-1516.790	55.837	-1594.859	-1419.185	1325.898	48.534	1226.618	1386.01
7	-1482.058	41.575	-1579.255	-1436.873	1323.812	46.830	1265.803	1414.65
8	-1509.829	55.703	-1611.096	-1427.644	1329.584	51.203	1259.615	1427.07
9	-1560.775	70.812	-1649.589	-1401.429	1370.184	66.911	1224.582	1445.93
10	-1510.952	39.665	-1569.018	-1421.837	1344.224	26.657	1301.334	1391.51
11	-1535.992	79.433	-1646.414	-1394.192	1351.676	71.819	1228.232	1457.32
12	-1576.106	27.004	-1616.468	-1538.163	1399.090	29.331	1357.333	1452.37
13	-1533.568	52.304	-1626.892	-1453.737	1356.544	64.162	1251.39	1441.10
14	-1516.517	56.152	-1624.032	-1405.20	1325.817	57.550	1212.03	1430.64

And the average return as a function of iteration is plotted in the next page:



The performance significantly gets better after a few iterations of the data aggregation. The reward gets to 1400 from -200 after 15 iterations.