Exercise 3 UCB

Exercise 2.3: UCB

In this exercise, you will implement the UCB algorithm.

Make sure that you have:

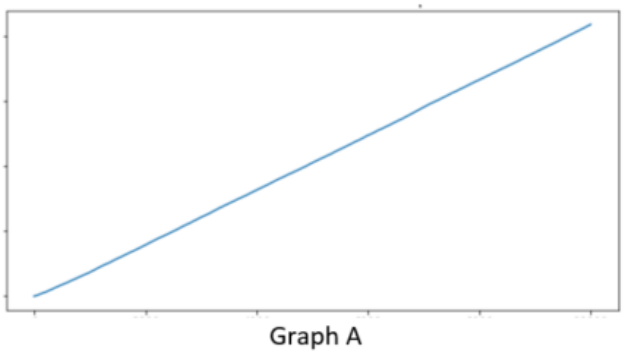
1. Completed the setup requirements as described in the Set Up Lab Environments section
2. Completed the previous exercises in this lab

Now, run jupyter notebook and open the “Ex2.3 UCB.ipynb” notebook under **Module 2** folder.

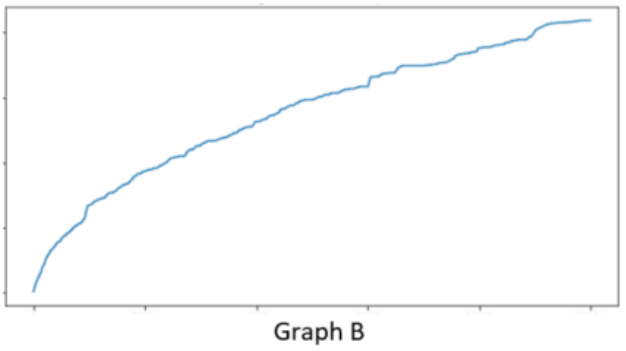
1. Examine the notebook.
2. Your task is to implement a UCB algorithm, in order to minimize regret.
3. We have given you some boiler plate code, you only need to modify the part as indicated.
4. Once you have done that, prepare a simulation. Don't change any other parameter, that is:
   - evaluation_seed = 1239
   - num_actions = 10
   - trials = 10000
   - distribution = “bernoulli”
5. Run the simulation, observe the results, and answer the following questions.

Lab Question

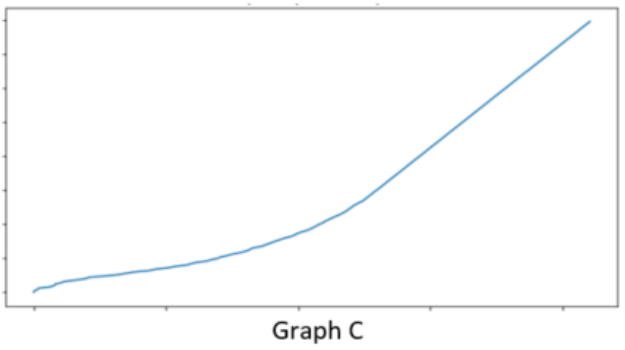
1/1 point (graded)



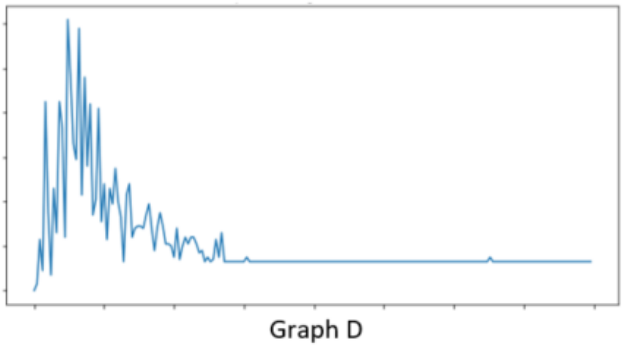
Graph A



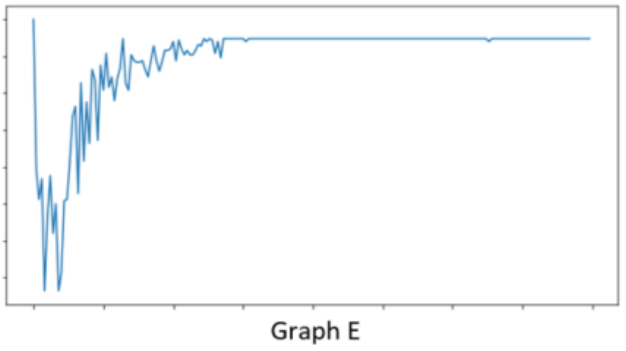
Graph B



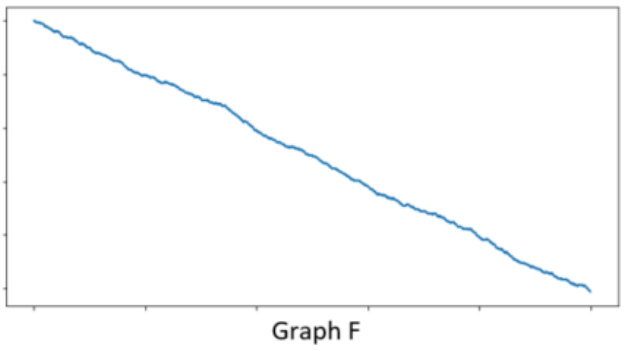
Graph C



Graph D



Graph E



Graph F

Which of the following graph resembles the regret curve over time?

- Graph A
- Graph B ✔
- Graph C
- Graph D
- Graph E
- Graph F

Submit You have used 1 of 2 attempts

✔ Correct (1/1 point)

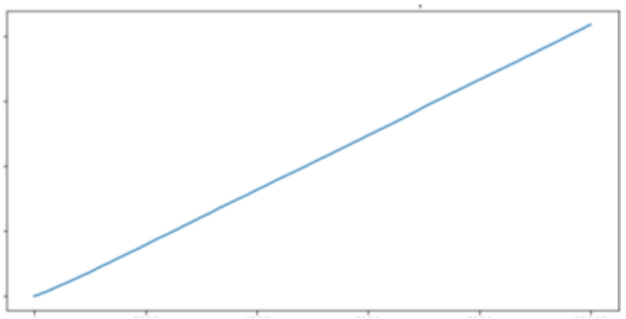
Now let's prepare another simulation by setting a different distribution, so your parameters should look like this:

- evaluation_seed = 1239
- num_actions = 10
- trials = 10000
- distribution = “normal”

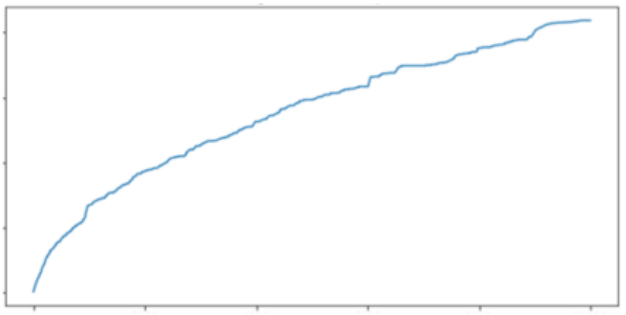
Run the simulation and observe the results.

Lab Question

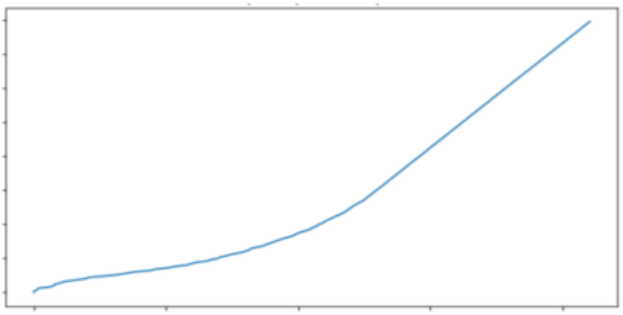
1/1 point (graded)



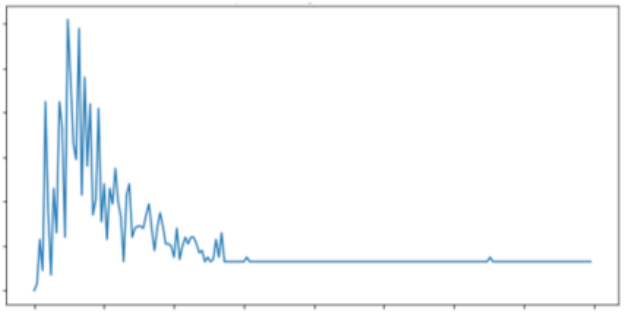
Graph A



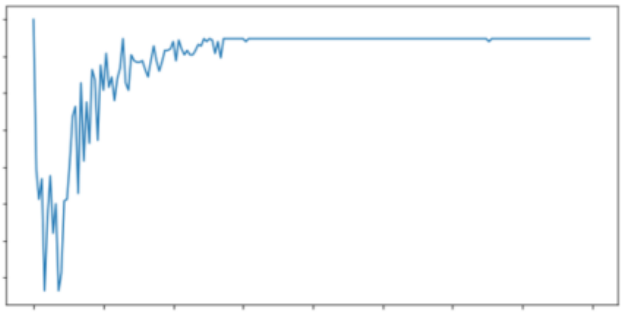
Graph B



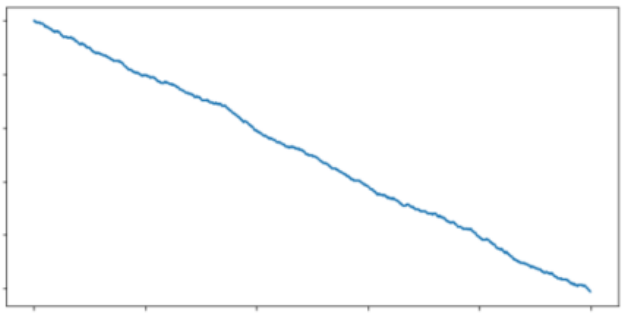
Graph C



Graph D



Graph E



Graph F

Which of the following graph resembles the regret curve over time?

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- Graph C
- Graph D
- Graph E
- Graph F

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