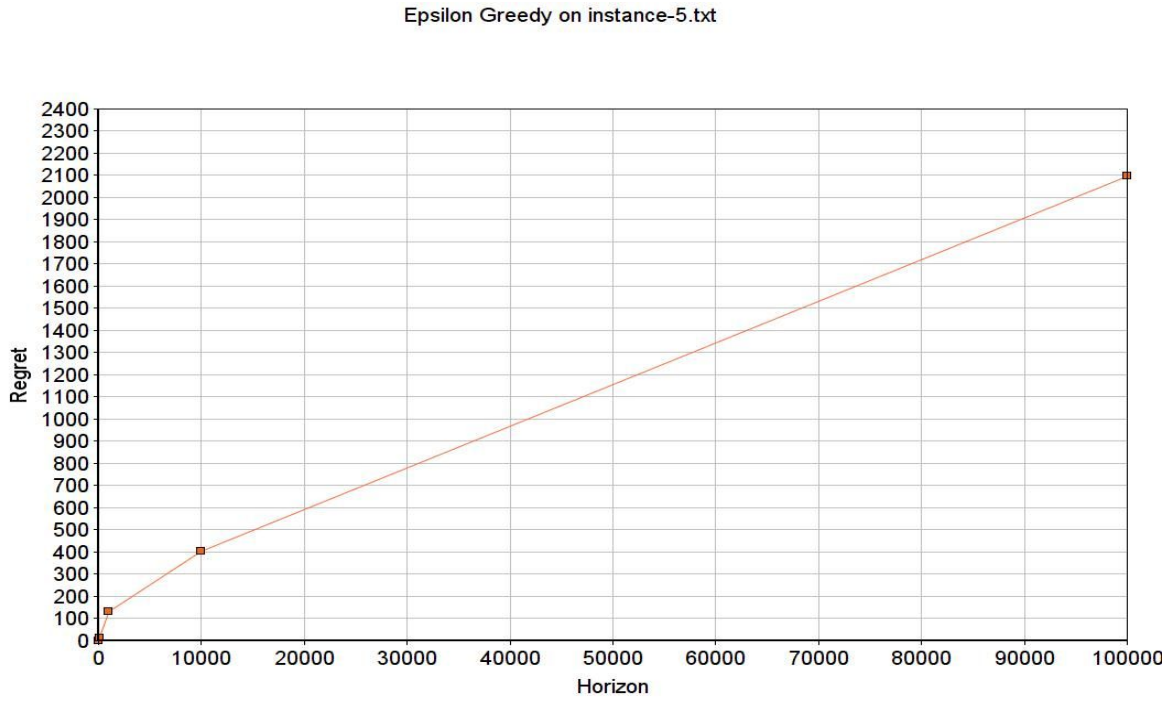
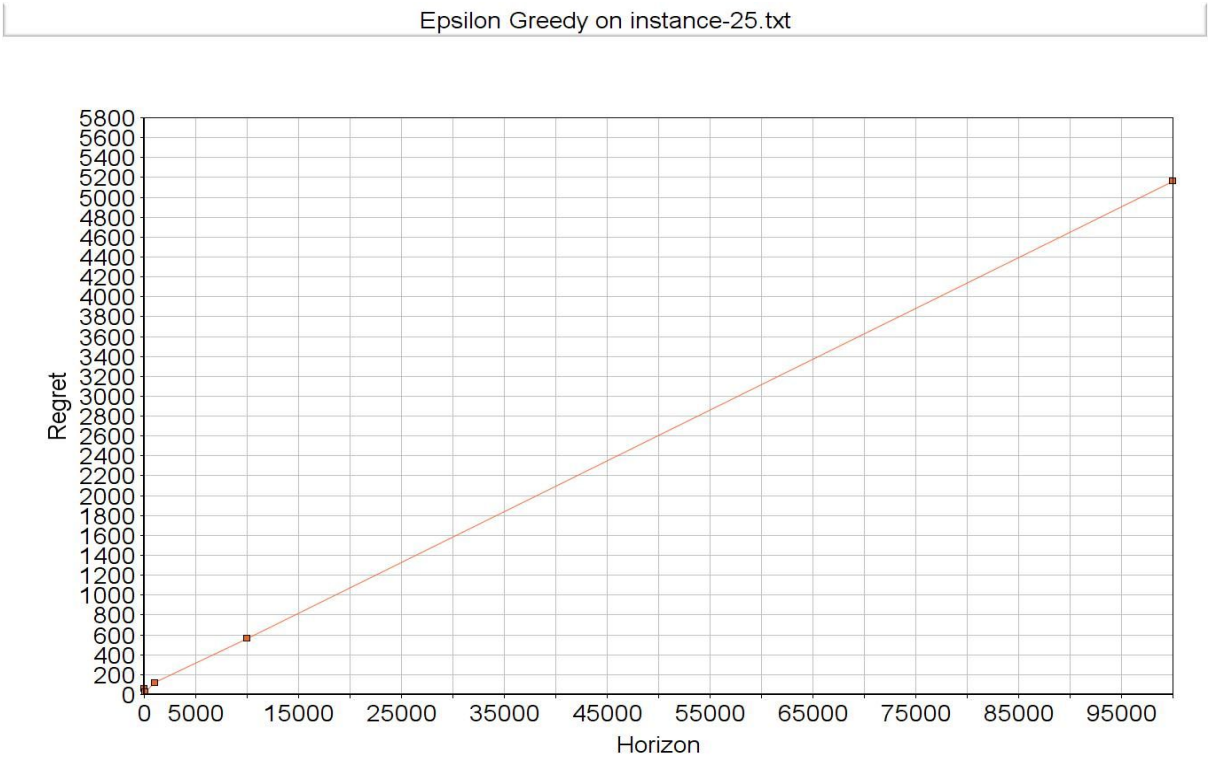
The resulting graphs are as follows: (The results are only for one run)

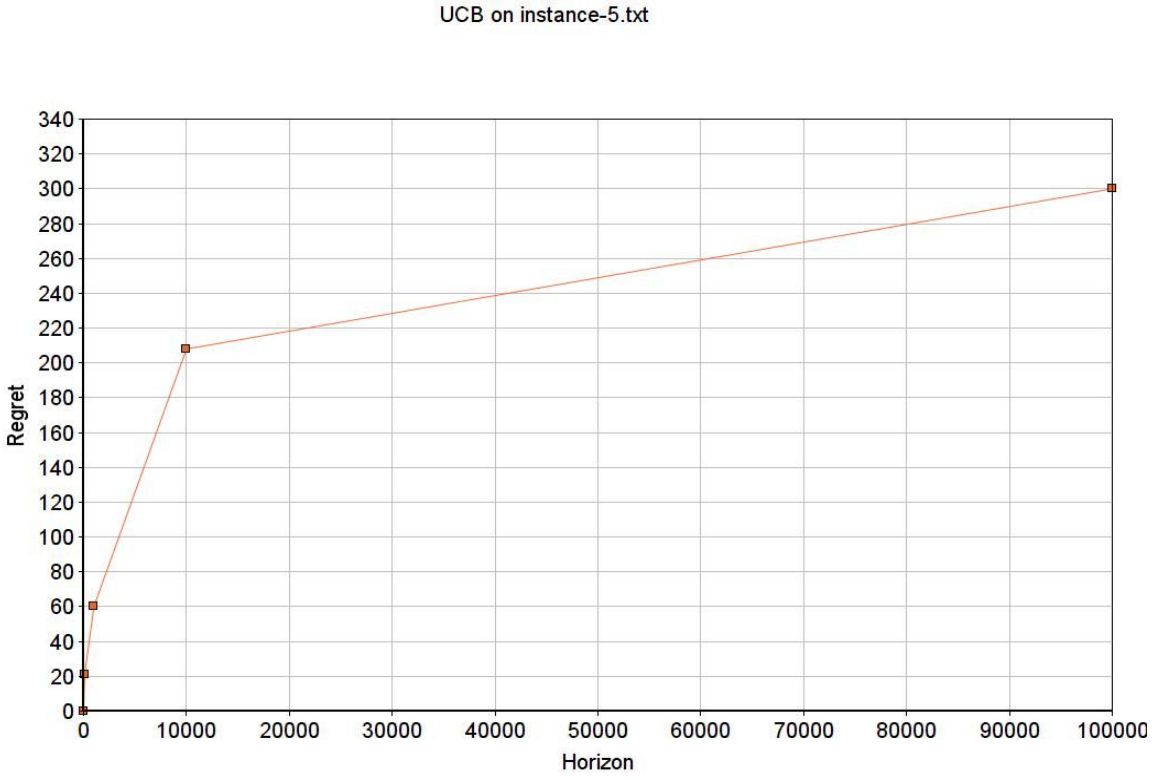
1. **Epsilon Greedy** on instance-5.txt and instance-25.txt

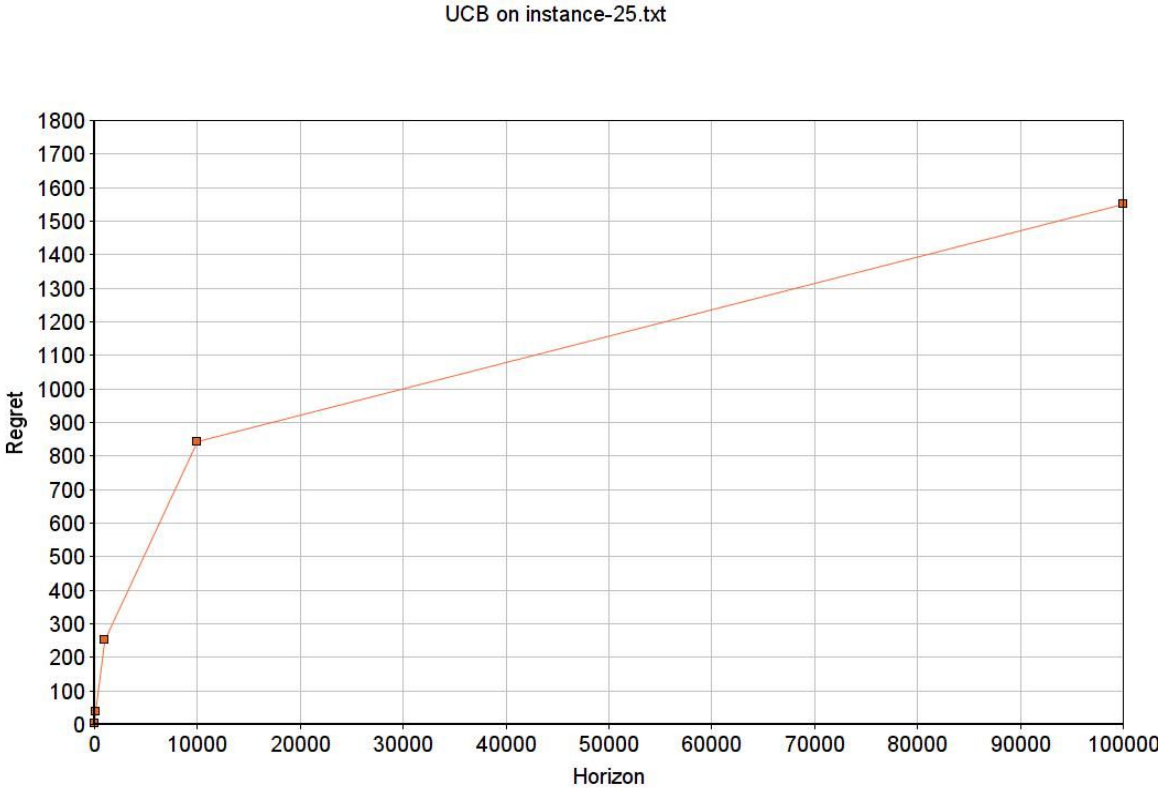



We can see the resulting plot for the Epsilon Greedy algorithm above. Given more number of horizons, we can establish that the regret becomes an approximate constant.

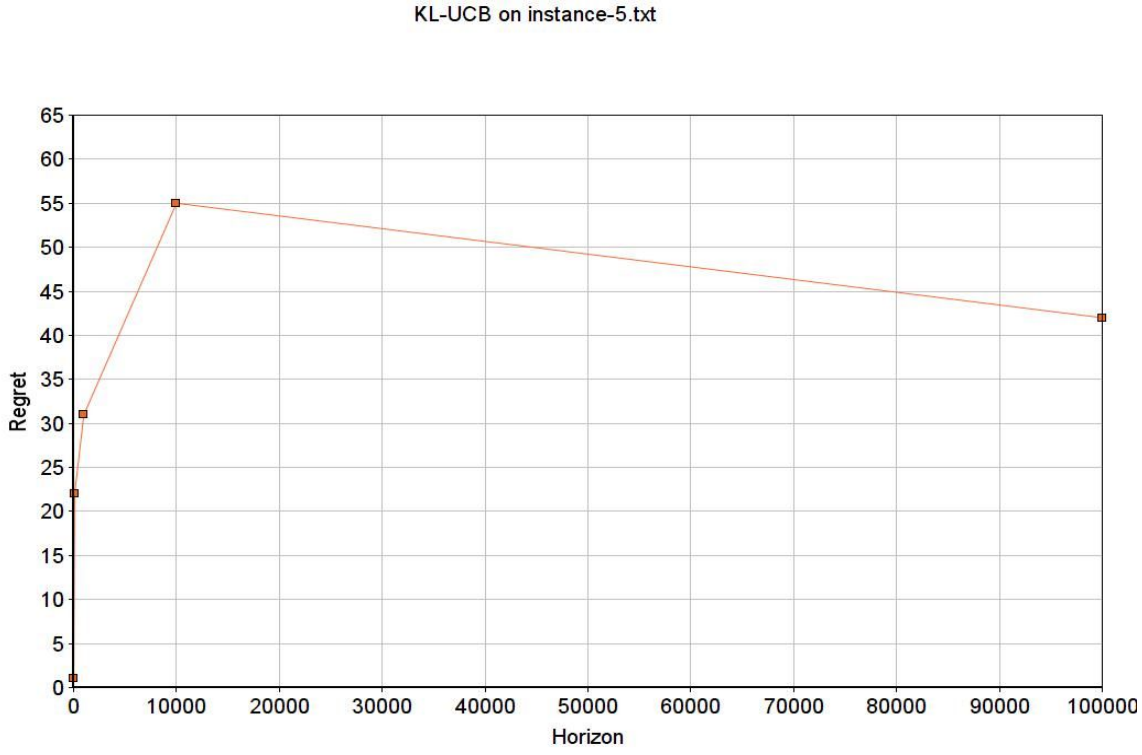
2. **UCB** on instance-5.txt and instance-25.txt

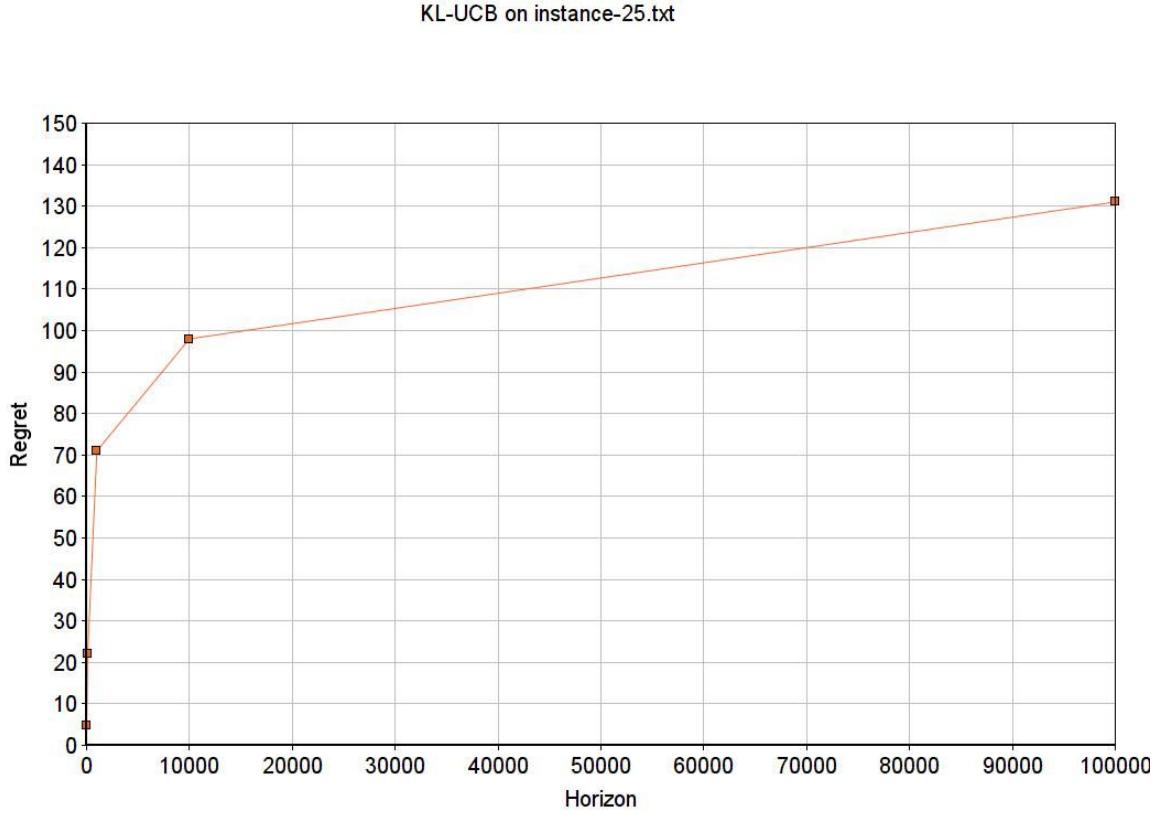



We can see the resulting plot for the UCB algorithm above. Given more number of horizons, we can establish that the regret becomes an approximate constant.

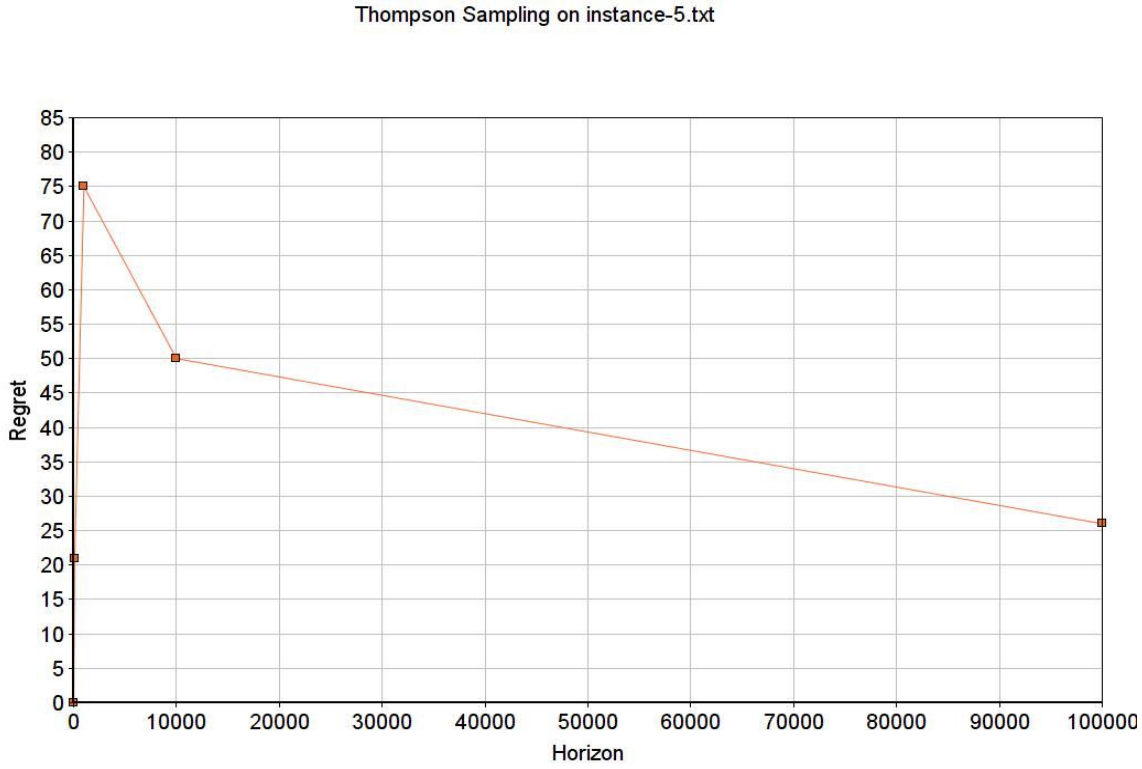
3. **KL-UCB** on instance-5.txt and instance-25.txt

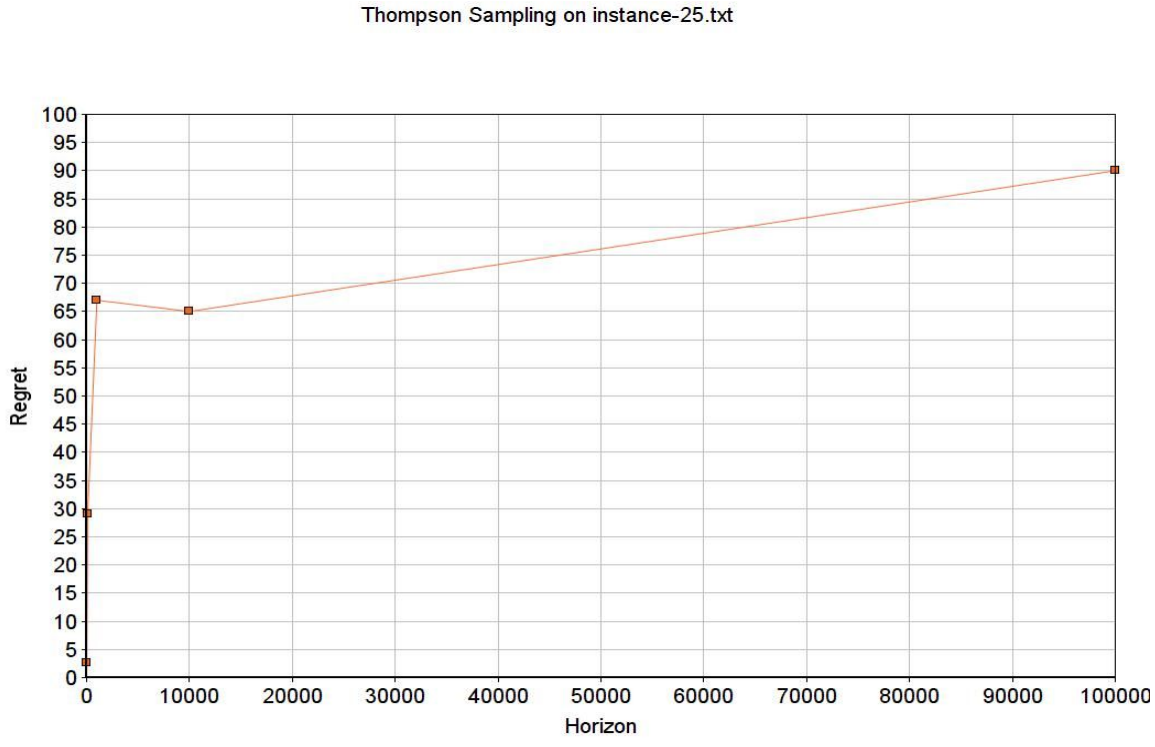



This graph is the most unpredictable till now. For instance-25.txt, the graph behaves as predicted but the value of regret decreases in case of instance-5.txt

4. **Thompson Sampling** on instance-5.txt and instance-25.txt




In case of instance-5.txt the regret increases in the beginning and goes on to decrease as we increase the horizons. Similarly, for instance-25.txt, the regret takes a little drop before increasing for good.

**References Used:**

To simulate the Beta distribution, code from the following link was used:
https://stackoverflow.com/questions/15165202/random-number-generator-with-beta-distribution

Ideas for KL-UCB algorithm:
https://perso.limsi.fr/cappe/Research/Talks/11-gatsby.pdf