COMPSCI 589: MACHINE LEARNING
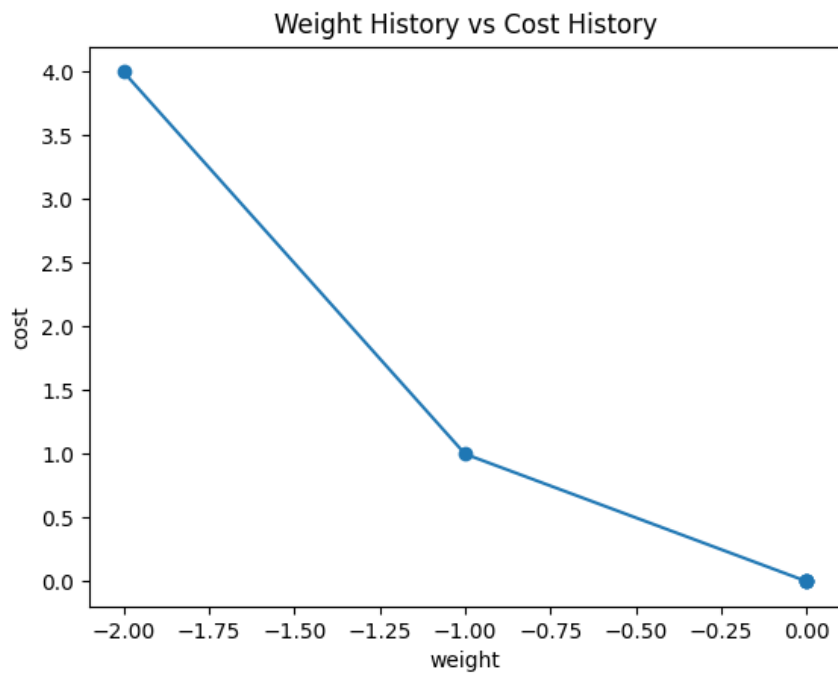
PROJECT 1 REPORT

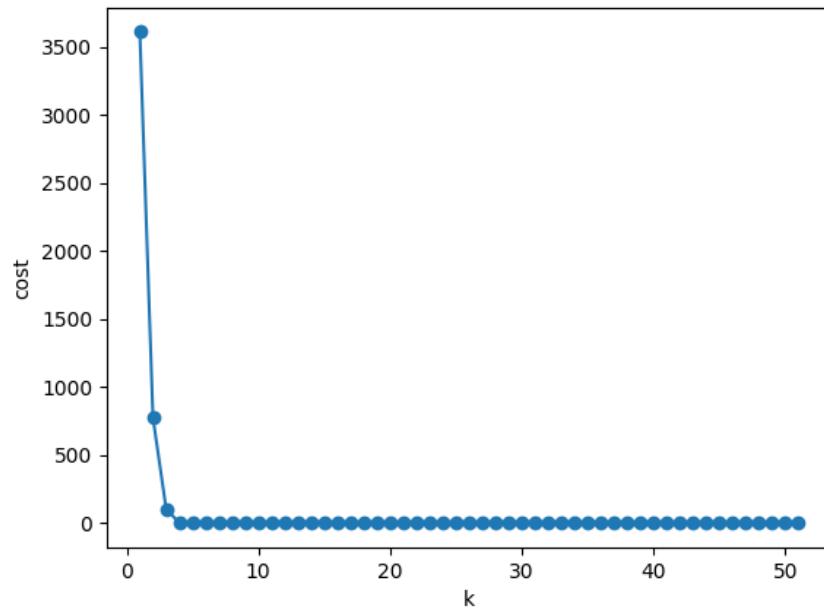**Student:** Trung Dang – 33858723

I.   Task 1

Result:

```
iteration 0: weight=[-2], cost=[4]
iteration 1: weight=[-1.], cost=[1.]
iteration 2: weight=[0.], cost=[0.]
iteration 3: weight=[0.], cost=[0.]
iteration 4: weight=[0.], cost=[0.]
iteration 5: weight=[0.], cost=[0.]
```

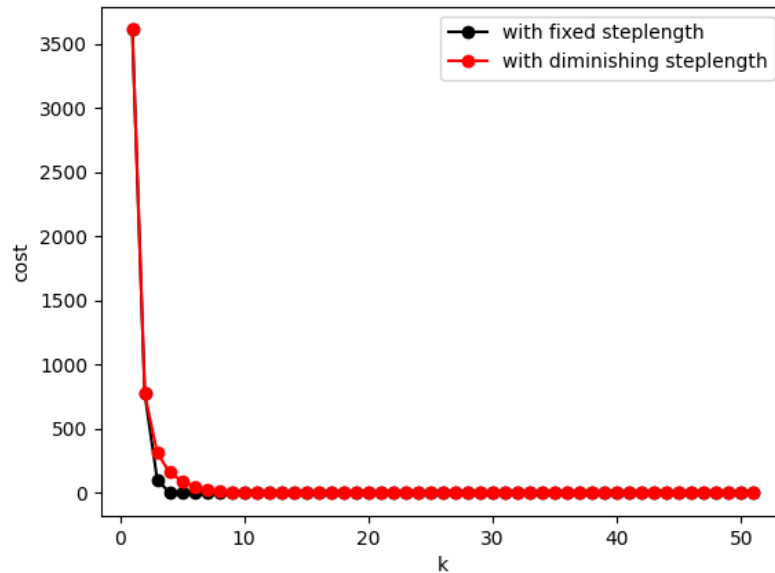Below is the plot for the weight history vs cost history

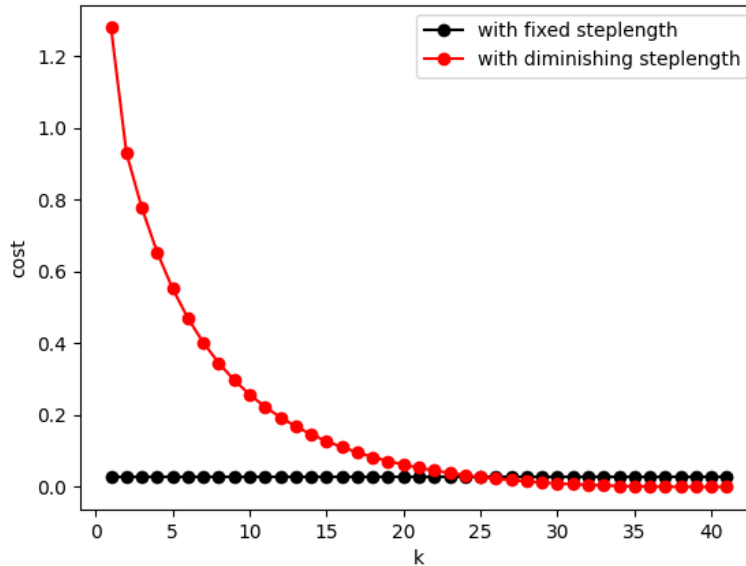## II. Task 2

III.   Task 3

The plot generated by using all costs value is shown below:

The plot generated by using all the cost data from the 10th index on is:

The final cost of task 3 with fixed step length compared to the final cost of task 3 with diminished step length is:

```
Final cost from fixed step length is:  0.028663876907508132
Final cost from diminished step length is:  3.0852400842917014e-05
```