Report for Project 2

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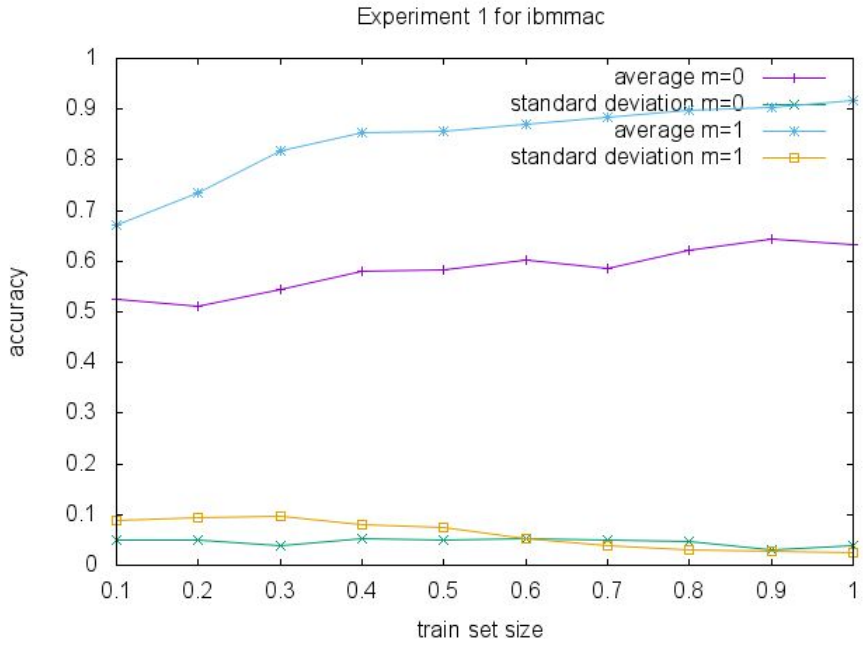
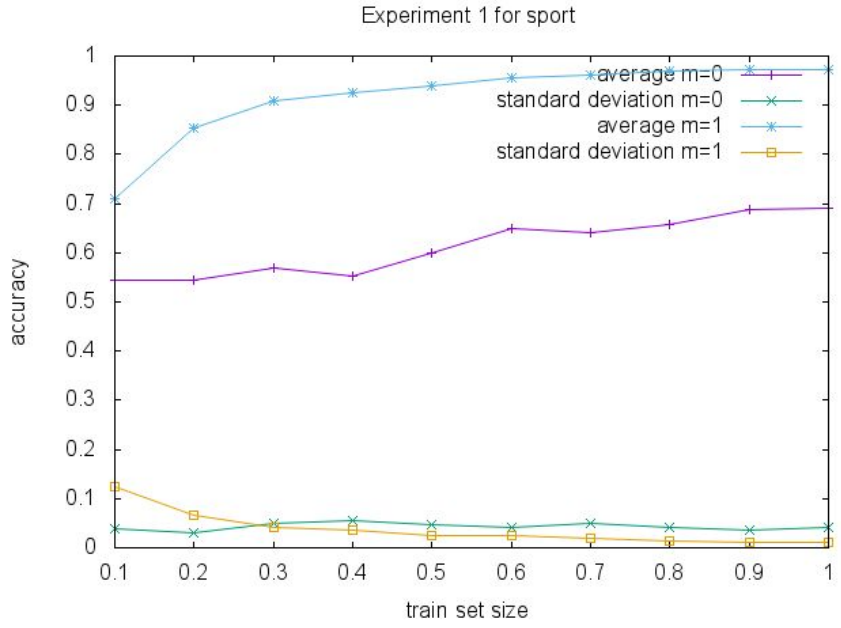
- Experiment 1





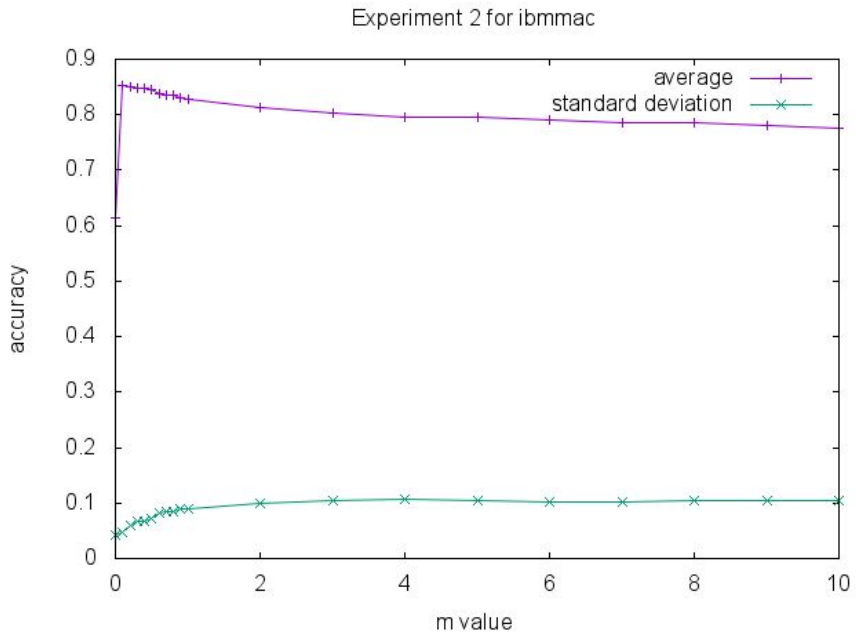
From the above two plots, we can observe that for the same dataset:

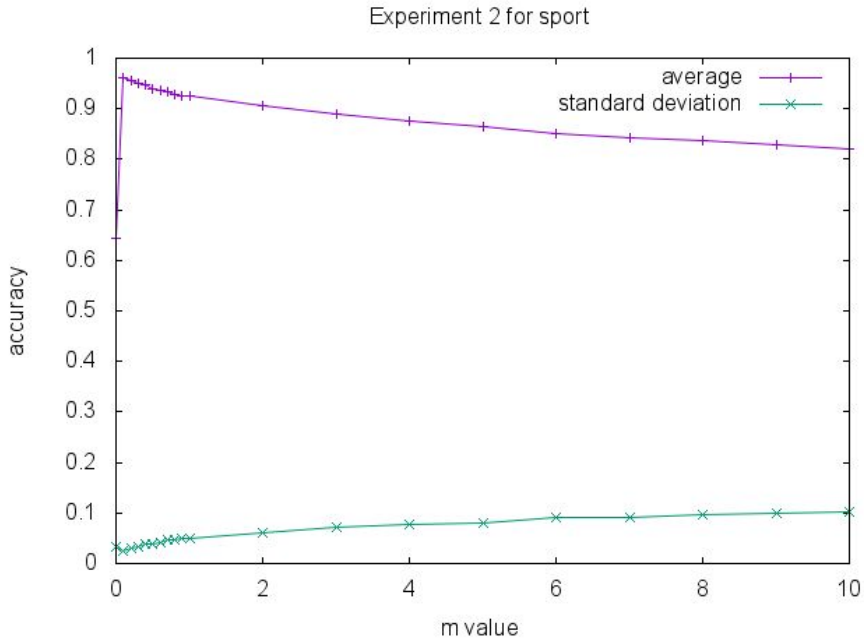
1. When training set's size is becoming larger, the average accuracy grows.
2. When training set's size is becoming larger, the standard deviation decreases a little bit.
3. When m's value is changed from 0 to 1, the average accuracy has a big increase.

4. When m's value is changed from 0 to 1, the standard deviation also decreases a little.

Based on the observations, we can conclude that for the same dataset, if we increase the training set's size and apple Laplace smoothing, we will get better predictions.

- Experiment 2





According to these two plots, we can see that for fixed training set size:

1. When we increase the value of m from 0 to 1, the average accuracy reaches to its peak.

2. But as we increases m from 1 to 10, the average accuracy decreases.
3. The overall standard deviation is increasing a little bit.

We can conclude that increase m from 0 to 1, we get better predictions. But increasing m from 0 to 10 gives us decreasing accuracy.