Question 2- Dictionary Readme and analysis

Objective:

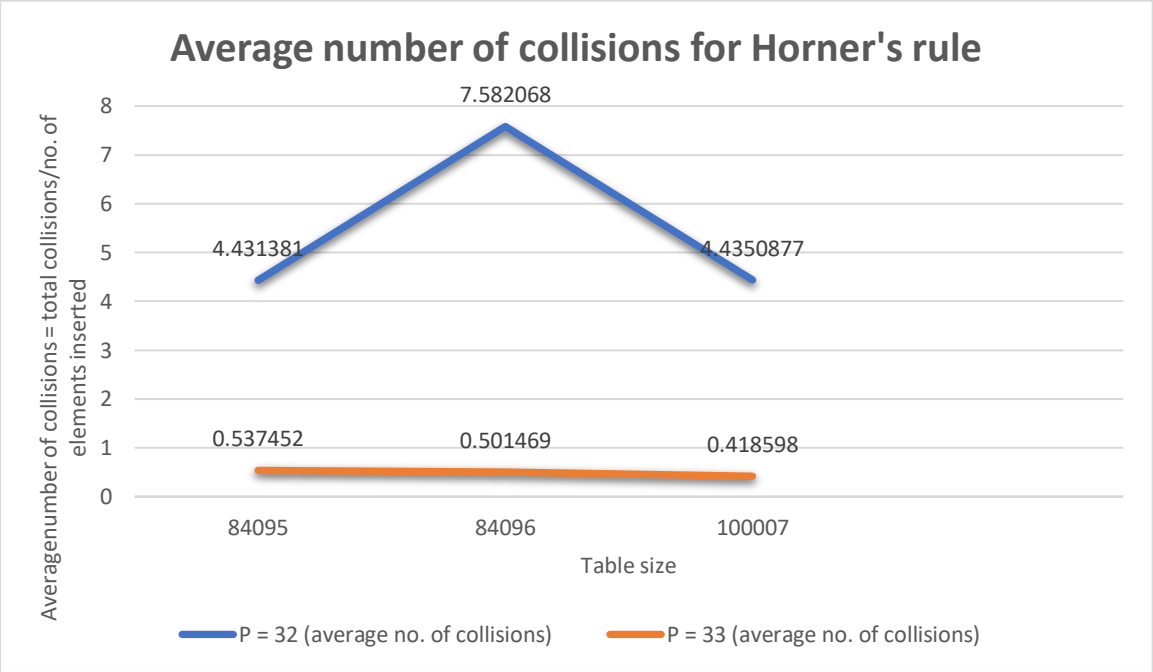
To study the average number of probes when Horner's rule is used for hashing with separate chaining for resolving collisions when:

1. P = 32
2. P = 33

Here p is the multiplier.

Observations:

Table Size	P = 32 (average no. of collisions)	P = 33 (average no. of collisions)
84095	4.431381	0.537452
84096	7.582068	0.501469
100007	4.4350877	0.418598



P = 33(run time in seconds), table size = 84096
0.036260
0.037772
0.036604
0.033917
0.038659
0.034420
0.034858

P = 32(run time in seconds), table size = 84096
0.062450
0.061505
0.071021
0.082632
0.062765
0.063507
0.61225

Conclusion:

The result for p = 33 is as expected and verified with the results of other students.

It is interesting to note that the results for p = 32 are significantly larger that what other students got.

This is due to how the average number of collisions is calculated:

1. For every index where an element is present the count is increased by 1, then for every position in the list traversed the count is incremented by one.
2. To obtain the average number of collisions the total number of collisions is divided by number of elements inserted i.e., 84095.

Thus, as per my analysis, p = 33 gives less number of collisions as compared to p = 32.