BITS DSDA ASSIGNMENT

PROBLEM STATEMENT 12: BATCH 60

Hash table is a data structure which stores the data in the format of key-value pairs and using the key value we can search the value easily.

Amortized analysis for hashing:

When compared to other techniques like simple lists, balanced binary trees et al., hashing will take comparably less amount of time for managing the records. Ideally the operations on hashing will take O(1) amount of time for all the insertion, deletion and searching a member.

How Hash Function Works?

It should always map large keys to small keys.

It should always generate values between 0 to m-1 where m is the size of the hash table.

It should uniformly distribute large keys into hash table slots.

For 100 records:

Time taken to read inputPS12.txt: 0.00399017333984375 seconds

Time taken to read promptsPS12.txt: 0.0009963512420654297 seconds

Execution time hallOfFame: 0.0 seconds

Execution time newCourseList: 0.0009989738464355469 seconds

Execution time depAvg: 0.0029914379119873047 seconds

Time taken to write to outputPS12.txt: 0.0 seconds

Total execution time: 0.010970592498779297 seconds

For 10 records:

Time taken to read inputPS12.txt: 0.002991914749145508 seconds

Time taken to read promptsPS12.txt: 0.007998943328857422 seconds

Execution time hallOfFame: 0.0 seconds

Execution time newCourseList: 0.0 seconds

Execution time depAvg: 0.0 seconds

Time taken to write to outputPS12.txt: 0.0 seconds

Total execution time: 0.011991262435913086 seconds

Apart from time taken to read a file, the time taken to process the file and for everything it was taking linear amount of time.