CSE12 - Lecture 16 - A00

Sunday, October 30, 2022 8:00 PM

PA5 due tomorrow
PA7 Late/Resubmit due tomorrow

Hash Function (same as previous)

```
int getIndex(String k) {
    return k.length;
}
```

# of buckets – 4
(i.e. the size of the array)

expandCapacity() called in set()

LoadFactor – 0.75

```
set("Smith", 1);
set("Johnson", 2);
set("Williams", 3);
set("Brown", 4);
set("Jones", 5);
set("Garcia", 6);
set("Miller", 7);
set("Davis", 8);
set("Rodriguez", 9);
set("Martinez", 10);
```

Draw the picture of the HashTable using Separate Chaining (using expandCapacity)

Does the run-time change with expandCapacity()?

What is the run-time for this HashTable (do picture first):

N & 2N

set()

Worst Case $\Theta(N)$

Best Case: $\Theta(N) \rightarrow \boxed{\Theta(1)}$

What conditions make up the best case for set()?

N is large, empty or nearly empty bucket

get()

Worst Case $\Theta(N)$

Best Case: $\boxed{\Theta(1)}$

What conditions make up the best case for get()?

empty, or nearly empty bucket

Why is the hash function important?

prevents clustering
even distribution