# CENG 202 Data Structures

## Lab 8 Questions: Hash Tables

**Aim:** Implement a Hash Table.

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**Cell phones** are **forbidden**. Please put your cell phones in your bags.

You **can't leave** class early unless you finished the tasks.

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**Question 1:** You are going to implement a Hash Table for Strings. You can download **HashTable.java** file.

You are going to implement following functions for Hash Table:

```
    public void displayTable() {
        // Displays the Hash Table according to the output
    }

    public int hashFunc(String key) {
        // Finds the hash value for a String
        // Assume that hash value will be (the length of strings + 3) mod
array size
    }

    public void insert(String key)
    {
        // insert a String value to the link list which is in the index of
hash value.
    }

    public Node delete(String key)
    {
        // delete an item if it is in Hash Value
    }

    public Node search(String key)
    {
        // search an item whether it is inside the Hash table or not
    }
```

---

**Output**

```
--------------------------
Hash Table:
```

```
0-List: None
1-List: None
2-List: None
3-List: None
4-List: None
--------------------------
Hash Table:
0-List: None
1-List: None
2-List: None
3-List: Ahmet ->
4-List: None
--------------------------
Hash Table:
0-List: None
1-List: Ali ->
2-List: None
3-List: Ahmet ->
4-List: None
--------------------------
Hash Table:
0-List: None
1-List: Ali ->
2-List: None
3-List: Ahmet ->
4-List: Mehmet ->
--------------------------
Hash Table:
0-List: None
1-List: Ali ->
2-List: Ayse ->
3-List: Ahmet ->
4-List: Mehmet ->
--------------------------
Hash Table:
0-List: None
1-List: Ali -> Can ->
2-List: Ayse ->
3-List: Ahmet ->
4-List: Mehmet ->
--------------------------
Hash Table:
0-List: None
1-List: Ali -> Can ->
2-List: Ayse ->
3-List: Ahmet -> Deniz ->
4-List: Mehmet ->
--------------------------
Hash Table:
0-List: None
1-List: Ali -> Can ->
2-List: Ayse ->
3-List: Ahmet -> Deniz ->
4-List: Mehmet -> A ->
```

```
--------------------------
Hash Table:
0-List: None
1-List: Ali -> Can ->
2-List: None
3-List: Ahmet -> Deniz ->
4-List: Mehmet -> A ->
Ahmet is in the Hash
--------------------------
Hash Table:
0-List: None
1-List: Ali -> Can ->
2-List: None
3-List: Deniz ->
4-List: Mehmet -> A ->
Ahmet is not in the Hash
```