

In Class Lab 09

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Index: 210383L

GitHub: <https://github.com/Thejas0604/CSE-labs>

Section 01

(2)

```
0
Type command: 1
Enter user name: Thejas
Enter password to be saved: 210383
Type command: 4
[0]-->
[1]-->
[2]-->
[3]-->210383
Type command: █
```

(3)

```
0
Type command: 1
Enter user name: Thejas
Enter password to be saved: 210383
Type command: 4
[0]-->
[1]-->
[2]-->
[3]-->210383
Type command: 1
Enter user name: Gethara
Enter password to be saved: 1234
Type command: 1
Enter user name: Tharoosha
Enter password to be saved: 1254
Type command: 1
Enter user name: Tharindu
Enter password to be saved: 15478
Slot is not empty
Type command: 4
[0]-->1234
[1]-->1254
[2]-->
[3]-->210383
Type command: █
```

(4)

```
Type command: 1
Enter user name: Thejas
Enter password to be saved: 210383
Type command: 4
[0]-->
[1]-->
[2]-->
[3]-->210383
Type command: 1
Enter user name: Gethara
Enter password to be saved: 1234
Type command: 1
Enter user name: Tharoosha
Enter password to be saved: 1254
Type command: 1
Enter user name: Tharindu
Enter password to be saved: 15478
Slot is not empty
Type command: 4
[0]-->1234
[1]-->1254
[2]-->
[3]-->210383
Type command: 2
Enter item to be deleted: Thejas
User deleted
Type command: 4
[0]-->1234
[1]-->1254
[2]-->
[3]-->
Type command: █
```

(5)

- The problem when we are using this kind of a basic Hash Table is when the hash values are same for any user_names (keys) there's no way to insert those values into the Hash Table. Because collision will happen.

- There are quite a few solutions for that scenario. Some of them are listed below.
 - **Chaining:** Each slot will be consisted with linked lists so that the values relevant to duplicate hash values can be added not the respective linked list.
 - **Open Addressing:** The values relevant to duplicate hash values will be added to the next available slot. For that the hash function will be modified.

Section 02

(02)

```
0
Type command: 1
Enter user name: Thejas
Enter password to be saved: 210383
Type command: 1
Enter user name: Thejas
Enter password to be saved: 123456
Type command: 3
[0]-->[]
[1]-->[]
[2]-->[]
[3]-->[Thejas, Thejas, ]
Type command: █
```

(03)

```
0
Type command: 1
Enter user name: Thejas
Enter password to be saved: 210383
Type command: 1
Enter user name: Thejas
Enter password to be saved: 123456
Type command: 3
[0]-->[]
[1]-->[]
[2]-->[]
[3]-->[Thejas, Thejas, ]
Type command: 1
Enter user name: Gethara
Enter password to be saved: 159753
Type command: 1
Enter user name: Tharoosha
Enter password to be saved: 1234567
Type command: 1
Enter user name: Tharindu
Enter password to be saved: 1477896
Linked List reached MAX CAP!
Type command: 1
Enter user name: Govindu
Enter password to be saved: 1245
Type command: 3
[0]-->[Gethara, Govindu, ]
[1]-->[Tharoosha, ]
[2]-->[]
[3]-->[Thejas, Thejas, ]
Type command: █
```