

Data Structures and Algorithms

In class Lab 09

Index-210670N

Github Repo link- <https://github.com/OmalyaV/In-class-lab>

Section 1

Task 1

```
Type command:1
Enter user name:Vidushini.A.0
Enter password to be saved:210670N
Type command:4
[0]-->
[1]-->
[2]-->
[3]-->210670N
```

Task2

```
Type command:
Enter user name:ushar1
Enter password to be saved:ushar12001
Type command:1
Enter user name:annisclever
Enter password to be saved:annisc21
Ty
pe command:1
Enter user name:miduka
Enter password to be saved:mid21
the slot is already filled
Type command:
Enter user name:ann
Enter password to be saved:ann21
the slot is already filled
Type command:
Enter user name:ann
Enter password to be saved:annisclever
Type command:4
[0]-->ushar12001
[1]-->Annisclever
[2]-->miduka21
[3]-->210670N
Type command:
```

Run | TODO | Problems | Terminal | Python Packages | Services | Build

ly added files can be added to Git // View Files // Always Add // Don't Ask Again (57 minutes ago)

38:14 LF UTF-8 clang-tidy 4 spaces C++ hashtable_with_chaining.cpp master

2:05 PM

Task 3

```
[3]-->210670N
Type command: 3
Enter item to be deleted: Vidushini.A:0
User deleted
Type command: Type command: 4
[0]-->ushari2001
[1]-->Annisclever
[2]-->niduka21
[3]-->
Type command:
```

- With this kind of simple hash table the collisions are not managed, therefore, when the hash function generates the same hash codes for two passwords the second password cannot be stored in the hash table.

To prevent this, we need to use techniques like chaining, linear probing or quadratic probing to manage collisions and store even the colliding data in the hash table.

Section 2

Task 1

```
0
Type command:1
Enter user name:Vidushini.A.0
Enter password to be saved:210670N
Type command:1
Enter user name:Vidushini.A.0
Enter password to be saved:210670N
Ty
pe command:3
[0]-->[]
[1]-->[]
[2]-->[]
[3]-->[Vidushini.A.0, Vidushini.A.0, ]
Type command:
```

Task 2

```
Type command:1
Enter user name:Ushari
Enter password to be saved:ushari210
Type command:1
Enter user name:Sonal
Enter password to be saved:Malika21
Ty
pe command:1
Enter user name:Devindi
Enter password to be saved:Ushari21
Linked List reached MAX CAP!
Type command:1
Enter user name:Malika
Enter password to be saved:mal21
Type command:1
[0]-->[Ushari, ]
[1]-->[]
[2]-->[Sonal, MALKA, ]
[3]-->[Vidushini.A.0, Vidushini.A.0, ]
Type command:
```

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34:14 LF UTF-8 .clang-t