

LAB 09

200356A

Section 01

Q2.)

```
PS C:\Users\Dulan Lokugeegana> cd "c:\Users\Dulan Lokugeegana\OneDrive - University of Moratuwa\Sem 4 Dulan\CS2023_data_structures_and_algorithms\InClass\LAB9 May09\lab materials\" ; if ($?) { g++ hashtable_basics.cpp -o hashtable_basics } ; if ($?) { .\hashtable_basics }
0
Type command: 1
Enter user name: dulan
Enter password to be saved: 200356A
Type command: 4
[0]-->200356A
[1]-->
[2]-->
[3]-->
Type command: █
```

Q3.)

```
PS C:\Users\Dulan Lokugeegana> cd "c:\Users\Dulan Lokugeegana\OneDrive - University of Moratuwa\Sem 4 Dulan\CS2023_data_structures_and_algorithms\InClass\LAB9 May09\lab materials\" ; if ($?) { g++ hashtable_basics.cpp -o hashtable_basics } ; if ($?) { .\hashtable_basics }
0
Type command: 1
Enter user name: dulan
Enter password to be saved: 200356A
Type command: 4
[0]-->200356A
[1]-->
[2]-->
[3]-->
Type command: 1
Enter user name: sadeep
Enter password to be saved: 200363R
Type command: 4
[0]-->200356A
[1]-->
[2]-->200363R
[3]-->
Type command: 1
Enter user name: pabadhi
Enter password to be saved: 200352H
Type command: 4
[0]-->200356A
[1]-->200352H
[2]-->200363R
[3]-->
```

```
Type command: 1
Enter user name: shymal
Enter password to be saved: 200366H
place is already takenType command: 1
Enter user name: asini
Enter password to be saved: 20030H
place is already takenType command: 1
Enter user name: gayumi
Enter password to be saved: 201045V
place is already takenType command: 1
Enter user name: pesala
Enter password to be saved: 200439G
place is already takenType command: 1
Enter user name: pesal
Enter password to be saved: 20439G
place is already takenType command: 1
Enter user name: abcd
Enter password to be saved: 2
place is already takenType command: 1
Enter user name: abce
Enter password to be saved: 2
Type command: 4
[0]-->200356A
[1]-->200352H
[2]-->200363R
[3]-->2
Type command: █
```

Q4.)

```
Type command: 4
[0]-->200356A
[1]-->200352H
[2]-->200363R
[3]-->2
Type command: 3
Enter user name to look up password:dulan
200356A
Type command: 2
Enter item to be deleted: dulan
User deleted
Type command: 4
[0]-->
[1]-->200352H
[2]-->200363R
[3]-->2
Type command: █
```

Q5.)

Most of the time there will be collisions as there are no more hash function to be check if there was a collision.

There are many ways we can change one is using chaining where a linked list is used, and we can add any amount data to the same location. The other method is using open addressing where it searches for another location if a collision is occurred.

Section B

Q2.)

```
a\Sem 4 Dulan\CS2023_data_structures_and_algorithms\InClass\LAB9 May09\lab materials\" ; if ($?) { g++ hashtable_with_chaining.cpp -o hashtable_with_chaining } ; if ($?) { .\hashtable_with_chaining }
0
Type command: 1
Enter user name: dulan
Enter password to be saved: 200356A
Type command: 1
Enter user name: dulan
Enter password to be saved: 200356A
Type command: 3
[0]-->[dulan, dulan, ]
[1]-->[]
[2]-->[]
[3]-->[]
Type command: █
```

Q3.)

```
0
Type command: 1
Enter user name: dulan
Enter password to be saved: 200356A
Type command: 1
Enter user name: dulan
Enter password to be saved: 200356A
Type command: 3
[0]-->[dulan, dulan, ]
[1]-->[]
[2]-->[]
[3]-->[]
Type command: 1
Enter user name: sadeep
Enter password to be saved: 200363R
Type command: 1
Enter user name: pabadhi
Enter password to be saved: 200352H
Type command: 1
Enter user name: anuki
Enter password to be saved: 200445V
Linked List reached MAX CAP!
Type command: 1
Enter user name: gayumi
Enter password to be saved: 201100G
Linked List reached MAX CAP!
Type command: 1
Enter user name: prathiba
Enter password to be saved: 201200R
Type command: 3
[0]-->[dulan, dulan, ]
[1]-->[pabadhi, ]
[2]-->[sadeep, ]
[3]-->[prathiba, ]
Type command: █
```

Github link

<https://github.com/Dulan24/S4-CS2023-DSA-labs>