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In [*]: def initializeHashTable():
    size = int(input('Enter size of hash table: '))
    hashtable = [[-1, 'null'] for i in range(size)]
    print('Hashtable of size', size, 'is successfully created .....')
    print(' ')
    print(' ')
    return(size, hashtable)
choice =1
while(choice!= 4):
    print('Menu')
    print('1. Linear Probing')
    print('2. Double Hashing')
    print('3.Exit')
    choice = int(input('Enter your choice: '))
    count = 0

    if choice == 1:
        size, hashtable = initializeHashTable()
        choice1 = 1
        while(choice1 != 4):
            print('Menu for Linear Probing')
            print('1.Insert')
            print('2.Search')
            print('3.Display')
            print('4.Back')
            choice1=int(input('Enter your choice: '))
            if choice1 == 1:
                if(count == size):
                    print('Hash table is Full .....')
                else:
                    number = int(input('Enter number: '))
                    name = input('Enter Name: ')
                    hashvalue = number % size
                    while(hashtable[hashvalue][0] != -1):
                        print('Collision has occurred ..... calculating new has')
                        print('')
                        hashvalue = (hashvalue + 1)%size
                    hashtable[hashvalue][0] = number
                    hashtable[hashvalue][1] = name
                    count += 1
                    print('Data is successfully inserted in the hash table ...')
                    print('')
                    print('')
            if choice1 == 2:
                number = int(input('Enter number to search: '))
                hashvalue = number % size
                comparision = 0
                i= 0
                while(hashtable[hashvalue][0] != number and comparision < size):
                    hashvalue = (hashvalue + i)%size
                    comparision += 1
                    i=i+1
                if comparision < size:
                    print('The number', number, 'is found at location', hashva
                else:
                    print('The number is NOT found in the hashtable.... wi
            if choice1 == 3:

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        for i in range(size):
            print('Hash Value ', i, end = "->")
            print(hashtable[i])

    count= 0
    if choice == 2:
        size, hashtable = initializeHashTable()
        choice1 = 1
        while(choice1 != 4):
            print('Menu for Double Hashing')
            print('1.Insert')
            print('2.Search')
            print('3.Display')
            print('4.Back')
            choice1=int(input('Enter your choice: '))
            if choice1 == 1:
                if(count == size):
                    print('Hash table is Full .....')
                else:
                    number = int(input('Enter number: '))
                    name = input('Enter Name: ')
                    hashvalue1= number % size
                    i= 1
                    while(hashtable[hashvalue1][0] != -1):
                        print('Collision has occurred ..... calculating new has
                        print('')
                        hashvalue1= number % size
                        hashvalue2 = (8-(number % 8))
                        hashvalue3= (hashvalue1 + i* hashvalue2) % size
                        i=i+1
                        hashvalue1=hashvalue3
                    hashtable[hashvalue1][0] = number
                    hashtable[hashvalue1][1] = name
                    count += 1
                print('Data is successfully inserted in the hash table .....To
                print('')
                print('')
            if choice1 == 2:
                number = int(input('Enter number to search: '))
                hashvalue1 = number % size
                comparision = 0
                i = 1
                while(hashtable[hashvalue1][0] != number and comparision < siz
                    hashvalue1 = number % size
                    hashvalue2 = (8-(number % 8))
                    hashvalue3= (hashvalue1 + i* hashvalue2) % size
                    hashvalue1 = hashvalue3
                    comparision += 1
                    i= i+1
                if comparision < size:
                    print('The number', number, 'is found at location', hashva
                else:
                    print('The number is NOT found in the hashtable.... with c
            if choice1 == 3:
                for i in range(size):
                    print('Hash Value ', i, end = "->")
                    print(hashtable[i])

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if choice == 3:  
    exit()
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Menu

1. Linear Probing
2. Double Hashing
- 3.Exit

Enter your choice: 1

Enter size of hash table: 3

Hashtable of size 3 is successfully created

Menu for Linear Probing

- 1.Insert
- 2.Search
- 3.Display
- 4.Back

Enter your choice: 1

Enter number: 20

Enter Name: A

Data is successfully inserted in the hash tableTotal inserted record= 1

Menu for Linear Probing

- 1.Insert
- 2.Search
- 3.Display
- 4.Back

Enter your choice: 1

Enter number: 30

Enter Name: B

Data is successfully inserted in the hash tableTotal inserted record= 2

Menu for Linear Probing

- 1.Insert
- 2.Search
- 3.Display
- 4.Back

Enter your choice: 1

Enter number: 40

Enter Name: C

Data is successfully inserted in the hash tableTotal inserted record= 3

Menu for Linear Probing

- 1.Insert
- 2.Search
- 3.Display
- 4.Back

Enter your choice: 3

Hash Value 0->[30, 'B']

Hash Value 1->[40, 'C']

Hash Value 2->[20, 'A']

Menu for Linear Probing

- 1.Insert
- 2.Search
- 3.Display
- 4.Back

Enter your choice:

In []: