

Exp-1: Symbol Table SPCC

Source Code:

```
import re

def my_check(val):
    operators = ['>', '<', '<=', '>=', '+', '-', '*', '/', '%', '^', '//', '=', '+=', '-=', '==',
    '!=', '/=', '%=', '//=', '!=', '&=', '|=', '^=', '>>=', '<<=']
    dig = "unknown"
    if((bool(re.match('^[a-zA-Z0-9]*$',val))==False) and ((val in operators) == False) ):
        dig = "special"
    elif((val in operators) == True):
        dig = "operator"
    else:
        dig = "identifier"
    return dig

mult = []
while True:
    print("\nMENU")
    print("\n1.Create table")
    print("\n2.Search Table")
    print("\n3.Enter Sysmbol")
    print("\n4.Remove Sysmbol")
    print("\n5.View table")
    print("\n6.Exit")
    ch = int(input("\nEnter your choice: "))

    if ch == 1:
        arr = []
        exp = input("\nEnter the expression: ")
        for element in exp:
            arr.append(element)
        print(*arr, sep = "\n")
        for i in arr:
            ib = 0
            for b in range(len(mult)):
                if (i == mult[b][0]):
                    ib = 1
            if ib != 1:
                mult.append([i,id(i),my_check(i)])
            ib = 0
        print("Completed")

    elif ch == 2:
        b = 0
        a = input("\nEnter search element: ")
        for i in range(len(mult)):
            if (a == mult[i][0]):
                b = 1
```

```

        break
    else:
        b = 0
    if(b==1):
        print("symbol: ",a,"index: ",i)
    else:
        print("Not Found")

elif ch == 3:
    nam = input("\nEnter Symbol: ")
    mult.append([nam,id(nam),my_check(nam)])

elif ch == 4:
    nan = input("\nEnter Symbol: ")
    for bi in range(len(mult)):
        if (nan == mult[bi][0]):
            break
    arr1 = mult[bi]
    print(arr1)
    mult.remove(mult[bi])

elif ch == 5:
    print(*mult, sep = "\n")
    print("\n")
    print("\nTable:")
    for i in range(len(mult)):
        print("Symbol: ",mult[i][0]," Address: ",mult[i][1]," Type: ",mult[i][2])
    print("\n")

elif ch == 6:
    print("exited")
    break
else:
    print("Invalid")

```

Output:

```

MENU

1.Create table

2.Search Table

3.Enter Symbol

4.Remove Symbol

5.View table

6.Exit

Enter your choice: 1

```

MENU

- 1.Create table
- 2.Search Table
- 3.Enter Symbol
- 4.Remove Symbol
- 5.View table
- 6.Exit

Enter your choice: 5

```
['D', 140703752818856, 'identifier']  
['=', 140703752818464, 'operator']  
['A', 140703752818688, 'identifier']  
['+', 140703752817456, 'operator']  
['B', 140703752818744, 'identifier']  
['*', 140703752817400, 'special']  
['C', 140703752818800, 'identifier']
```

Table:

Symbol: D Address: 140703752818856 Type: identifier

Symbol: = Address: 140703752818464 Type: operator

Symbol: A Address: 140703752818688 Type: identifier

Symbol: + Address: 140703752817456 Type: operator

Symbol: B Address: 140703752818744 Type: identifier

Symbol: * Address: 140703752817400 Type: special

Symbol: C Address: 140703752818800 Type: identifier

MENU

- 1.Create table
- 2.Search Table
- 3.Enter Symbol
- 4.Remove Symbol
- 5.View table
- 6.Exit

Enter your choice: 1

Enter the expression: X=W/M-L

X
=
W
/
M
-
L

Completed

MENU

- 1.Create table
- 2.Search Table
- 3.Enter Symbol
- 4.Remove Symbol
- 5.View table
- 6.Exit

Enter your choice: 5

```
['D', 140703752818856, 'identifier']  
['=', 140703752818464, 'operator']  
['A', 140703752818688, 'identifier']  
['+', 140703752817456, 'operator']  
['B', 140703752818744, 'identifier']  
['*', 140703752817400, 'special']  
['C', 140703752818800, 'identifier']  
['X', 140703752819976, 'identifier']  
['W', 140703752819920, 'identifier']  
['/', 140703752817680, 'operator']  
['M', 140703752819360, 'identifier']  
['-', 140703752817568, 'operator']  
['L', 140703752819304, 'identifier']
```

Table:

Symbol: D Address: 140703752818856 Type: identifier

Symbol: = Address: 140703752818464 Type: operator

Symbol: A Address: 140703752818688 Type: identifier

Symbol: + Address: 140703752817456 Type: operator

Symbol: B Address: 140703752818744 Type: identifier

Symbol: * Address: 140703752817400 Type: special

Symbol: C Address: 140703752818800 Type: identifier

Symbol: X Address: 140703752819976 Type: identifier

Symbol: W Address: 140703752819920 Type: identifier

Symbol: / Address: 140703752817680 Type: operator

Symbol: M Address: 140703752819360 Type: identifier

Symbol: - Address: 140703752817568 Type: operator

Symbol: L Address: 140703752819304 Type: identifier

MENU

1.Create table

2.Search Table

3.Enter Symbol

4.Remove Symbol

5.View table

6.Exit

Enter your choice: 3

Enter Symbol: E

MENU

- 1.Create table
- 2.Search Table
- 3.Enter Symbol
- 4.Remove Symbol
- 5.View table
- 6.Exit

Enter your choice: 5

```
['D', 140703752818856, 'identifier']  
['=', 140703752818464, 'operator']  
['A', 140703752818688, 'identifier']  
['+', 140703752817456, 'operator']  
['B', 140703752818744, 'identifier']  
['*', 140703752817400, 'special']  
['C', 140703752818800, 'identifier']  
['X', 140703752819976, 'identifier']  
['W', 140703752819920, 'identifier']  
['/', 140703752817680, 'operator']  
['M', 140703752819360, 'identifier']  
['-', 140703752817568, 'operator']  
['L', 140703752819304, 'identifier']  
['E', 140703752818912, 'identifier']
```

Table:

Symbol: D Address: 140703752818856 Type: identifier

Symbol: = Address: 140703752818464 Type: operator

Symbol: A Address: 140703752818688 Type: identifier

Symbol: + Address: 140703752817456 Type: operator

Symbol: B Address: 140703752818744 Type: identifier

Symbol: * Address: 140703752817400 Type: special

Symbol: C Address: 140703752818800 Type: identifier

Symbol: X Address: 140703752819976 Type: identifier

Symbol: W Address: 140703752819920 Type: identifier

Symbol: / Address: 140703752817680 Type: operator

Symbol: M Address: 140703752819360 Type: identifier

Symbol: - Address: 140703752817568 Type: operator

Symbol: L Address: 140703752819304 Type: identifier

Symbol: E Address: 140703752818912 Type: identifier

MENU

- 1.Create table
- 2.Search Table
- 3.Enter Symbol
- 4.Remove Symbol
- 5.View table
- 6.Exit

Enter your choice: 4

Enter Symbol: D
['D', 140703752818856, 'identifier']

MENU

- 1.Create table
- 2.Search Table
- 3.Enter Symbol
- 4.Remove Symbol
- 5.View table
- 6.Exit

Enter your choice: 5

['=', 140703752818464, 'operator']
['A', 140703752818688, 'identifier']
['+', 140703752817456, 'operator']
['B', 140703752818744, 'identifier']
['*', 140703752817400, 'special']
['C', 140703752818800, 'identifier']
['X', 140703752819976, 'identifier']
['W', 140703752819920, 'identifier']
['/', 140703752817680, 'operator']
['M', 140703752819360, 'identifier']
['-', 140703752817568, 'operator']
['L', 140703752819304, 'identifier']
['E', 140703752818912, 'identifier']

Table:

Symbol: = Address: 140703752818464 Type: operator

Symbol: A Address: 140703752818688 Type: identifier

Symbol: + Address: 140703752817456 Type: operator

Symbol: B Address: 140703752818744 Type: identifier

Symbol: * Address: 140703752817400 Type: special

Symbol: C Address: 140703752818800 Type: identifier

Symbol: X Address: 140703752819976 Type: identifier

Symbol: W Address: 140703752819920 Type: identifier

Symbol: / Address: 140703752817680 Type: operator

Symbol: M Address: 140703752819360 Type: identifier

Symbol: - Address: 140703752817568 Type: operator

Symbol: L Address: 140703752819304 Type: identifier

Symbol: E Address: 140703752818912 Type: identifier

MENU

1.Create table

2.Search Table

3.Enter Symbol

4.Remove Symbol

5.View table

6.Exit

Enter your choice: 6

exited

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