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Subject : Fundamental of Data Structure
Class : SE
Branch : AI&DS

PROBLEM STATEMENT:

Write a Python program to store roll numbers of student in array who attended training program in random order. Write function for searching whether particular student attended training program or not, using Linear search and Sentinel search.

CODE:

```
def Linsearch(arr,x):  
    for i in range(len(arr)):  
        if arr[i] == x:  
            return i  
    return -1
```

```
def Sentsearch(arr,x):  
    l = len(arr)  
    arr.append(x)  
    i = 0  
    while(arr[i]!=x):  
        i = i+1  
    if(i!=l):  
        return i  
    else:  
        return -1
```

#Driver Code

```
print("\nHow many Students are there?")  
n = int(input())
```

```

array = []
i=0
for i in range(n):
    print("\n Enter roll number: ")
    item = int(input())
    array.append(item)

print("The Roll Numbers of Students are ...\n")
print(array)

while(True):
    print("Main Menu")
    print("\n 1. Linear Search")
    print("\n 2. Sentinel Search")
    print("\n 3. Exit")
    print("\n Enter your choice: ")
    choice = int(input())

    if(choice == 1):
        print("\n Enter the roll number to search if student has attended the training
program or not? ")
        key = int(input())
        location = Linsearch(array,key)
        if(location !=-1):
            print("Yes, the student attended the training program!!!")
        else:
            print("No, the student has not attended the training program!!!")
        elif(choice == 2):
            print("\n Enter the roll number to search if student has attended the training
program or not? ")
            key = int(input())
            location = Sentsearch(array,key)
            if(location !=-1):
                print("Yes, the student attended the training program!!!")
            else:
                print("No, the student has not attended the training program!!!")
        else:
            print("Exitting");
            break

```

OUTPUT:

```
To run a command as administrator (user "root"), use "sudo <command>".
See "man sudo_root" for details.

varishag@varishag: /varishag-gupta-10-$ python3 seraching.py

How many Students are there?
6

Enter roll numbers:
12

Enter roll numbers:
34

Enter roll numbers:
56

Enter roll numbers:
78

Enter roll numbers:
76

Enter roll numbers:
54
The Roll Numbers of Students are ...
[12, 34, 56, 78, 76, 54]
Main Menu

1. Linear Search
2. Sentinel Search
3. Exit
Enter your choice:
1

Enter the roll number to search if student has attended the training program or not?
32
No, the student has not attended the training program!!!
Main Menu

1. Linear Search
2. Sentinel Search
3. Exit
Enter your choice:
2

Enter the roll number to search if student has attended the training program or not?
56
Yes, the student attended the training program!!!
Main Menu

1. Linear Search
2. Sentinel Search
3. Exit
Enter your choice:
3
Exiting
varishag@varishag: /varishag-gupta-10-$
```