

KNC 402 Python Lab

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Check all files here at [github](#)

Practical 9

```
lab9.py ×
lab9.py > ...
1  print("Lab 9 by Ashutosh Joshi")
2  def binary_search(list1, n):
3      low = 0
4      high = len(list1) - 1
5      mid = 0
6
7      while low <= high:
8          mid = (high + low) // 2
9          if list1[mid] < n:
10             low = mid + 1
11
12             elif list1[mid] > n:
13                 high = mid - 1
14
15             else:
16                 return mid
17         return -1
18
19 list1 = [14,65,4,32,422,23,43,3]
20 n = 32
21 result = binary_search(list1, n)
22
23 if result != -1:
24     print("Element is present at index", str(result))
25 else:
26     print("Element is not present in list1")
```

Output

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL

C:\Users\microlab\Desktop\knc-402-python-lab>python lab9.py
Lab 9 by Ashutosh Joshi
Element is present at index 3
```

Practical 10

```
lab10.py  X
lab10.py > ...
1  print("Lab 10 by Ashutosh Joshi")
2  def selection_sort(L):
3      for i in range(len(L)-1):
4          min_index = i
5          for j in range(i+1, len(L)-1):
6              if L[j] < L[min_index]:
7                  min_index = j
8          L[i], L[min_index] = L[min_index], L[i]
9
10 L = [41, 59, 26, 53, 59, 4, 6, 786, 33, 2]
11 print("Original list: ",L)
12 selection_sort(L)
13 print("Sorted list: ",L)
```

Output

```
C:\Users\microlab\Desktop\knc-402-python-lab>python lab10.py
Lab 10 by Ashutosh Joshi
Original list:  [41, 59, 26, 53, 59, 4, 6, 786, 33, 2]
Sorted list:  [4, 6, 26, 33, 41, 53, 59, 59, 786, 2]
```

Practical 11

```
lab11.py ×
lab11.py > ...
1  print("Lab 11 by Ashutosh Joshi")
2  def insertionSort(array):
3
4      for step in range(1, len(array)):
5          key = array[step]
6          j = step - 1
7          while j >= 0 and key < array[j]:
8              array[j + 1] = array[j]
9              j = j - 1
10         array[j + 1] = key
11
12
13  L = [41, 59, 26, 53, 59, 4, 6, 786, 33, 2]
14  print("Original list: ",L)
15  insertionSort(L)
16  print("Sorted list: ",L)
```

Output

```
C:\Users\microlab\Desktop\knc-402-python-lab>python lab11.py
Lab 11 by Ashutosh Joshi
Original list:  [41, 59, 26, 53, 59, 4, 6, 786, 33, 2]
Sorted list:  [2, 4, 6, 26, 33, 41, 53, 59, 59, 786]
```