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CS27

1. Question

Source Code

```python
#!/bin/python
#
#   Linear Search
#
number_of_elements = int(input("Enter the number of elements : "))

numbers = []

for i in range(number_of_elements) :
    num=int(input("Enter the element"+str(i+1)+" : "))
    numbers.append(num)

print(numbers)

element = int(input("Enter the number to search for : "))

for i in range(number_of_elements) :
    if numbers[i] == element :
        print("Element found at position",i)
```

Output

2. Question

Source Code

```python
#!/bin/python
#
#   Bubble Sort
#

number_of_elements = int(input("Enter the number of elements : "))

numbers = []

for i in range(number_of_elements) :
    num=int(input("Enter the element"+str(i+1)+" : "))
```

```
    numbers.append(num)

print("\nThe List\n")
print(numbers)

for i in range(number_of_elements) :
    for j in range(number_of_elements-i-1) :
        if numbers[j] > numbers[j+1] :
            numbers[j],numbers[j+1] = numbers[j+1],numbers[j]


print("The Sorted List")
print(numbers)
```

Output

3. Question

Source Code

```
#!/bin/python
#
#   Binary Search
#

number_of_elements = int(input("Enter the number of elements : "))

numbers = []

for i in range(number_of_elements) :
    num=int(input("Enter the element"+str(i+1)+" : "))
    numbers.append(num)

print("\nThe List\n")
print(numbers)

for i in range(number_of_elements) :
    for j in range(number_of_elements-i-1) :
        if numbers[j] > numbers[j+1] :
            numbers[j],numbers[j+1] = numbers[j+1],numbers[j]
```

```
print("The Sorted List")
print(numbers)

element = int(input("Enter the number to search for : "))

lower = 0
upper = number_of_elements-1

while lower < upper :
    mid = (lower+upper)//2
    if numbers[mid] == element :
        print("The number found at position",mid+1)
        break
    elif element < numbers[mid] :
        upper=mid-1
    else :
        lower=mid+1

if not (lower < upper) :
    print("Number not found.")
```

Output