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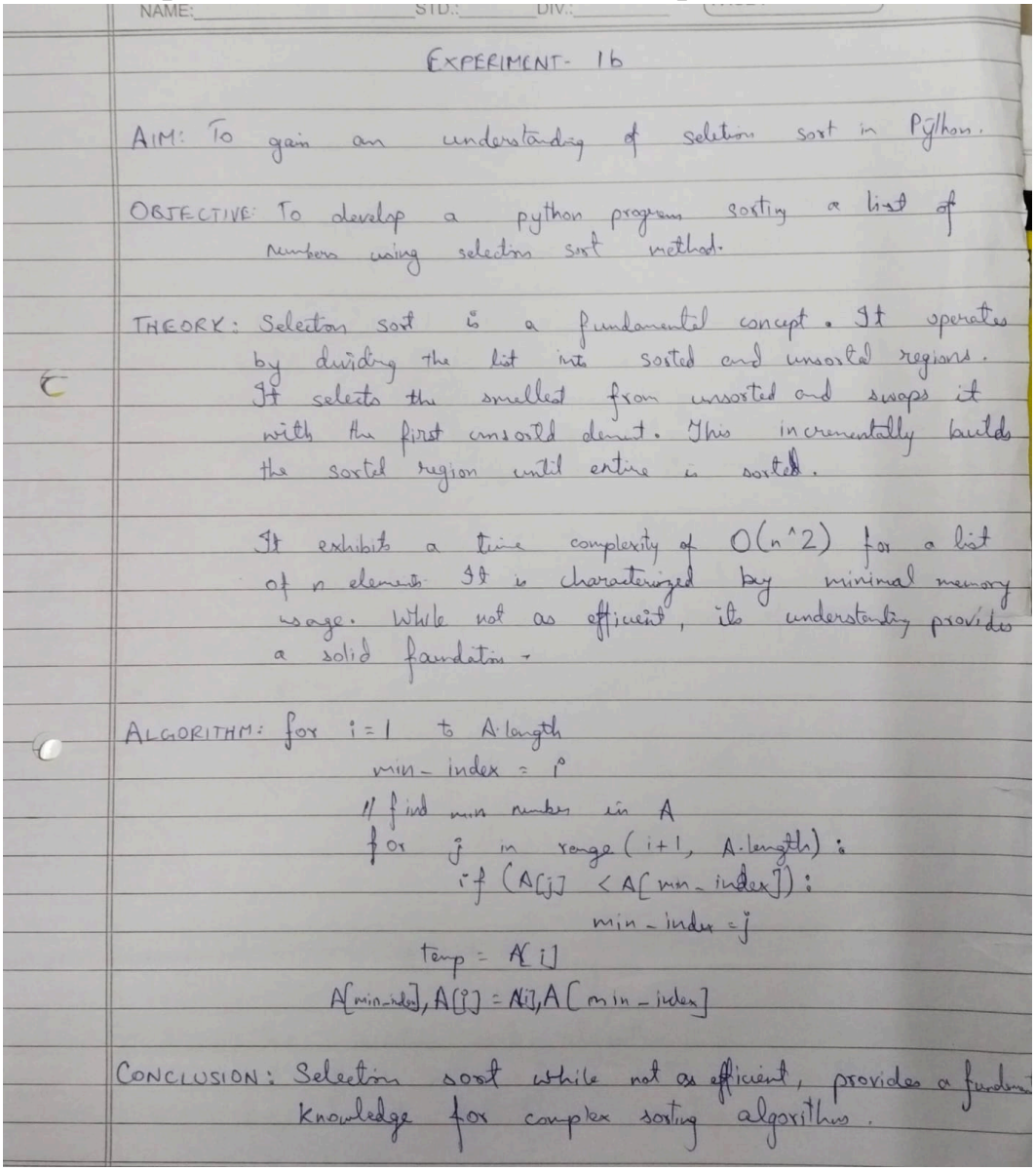
Title of Experiment : To understand and implement Insertion sort in Python



NAME: STD.: DIV.:

EXPERIMENT- 1b

AIM: To gain an understanding of selection sort in Python.

OBJECTIVE: To develop a python program sorting a list of numbers using selection sort method.

THEORY: Selection sort is a fundamental concept. It operates by dividing the list into sorted and unsorted regions. It selects the smallest from unsorted and swaps it with the first unsorted element. This incrementally builds the sorted region until entire is sorted.

It exhibits a time complexity of O(n^2) for a list of n elements. It is characterized by minimal memory usage. While not as efficient, its understanding provides a solid fundation.

ALGORITHM: for i = 1 to A.length
min_index = i
// find min number in A
for j in range(i+1, A.length):
if (A[j] < A[min_index]):
min_index = j
temp = A[i]
A[min_index], A[i] = A[i], A[min_index]

CONCLUSION: Selection sort while not as efficient, provides a fundam
knowledge for complex sorting algorithms.

Program:

```
A = [64, 25, 12, 22, 11]

for i in range(len(A)):

 min_idx = i
 for j in range(i+1, len(A)):
         if A[min_idx] > A[j]:
                 min_idx = j


 A[i], A[min_idx] = A[min_idx], A[i]

print ("Sorted array")
for i in range(len(A)):
 print(A[i])
```

Output:

```
KashewKnutt@KashewKnutt:~/Documents/GitHub/
cuments/GitHub/tensorflow/tp.py
Sorted array
11
12
22
25
64
```