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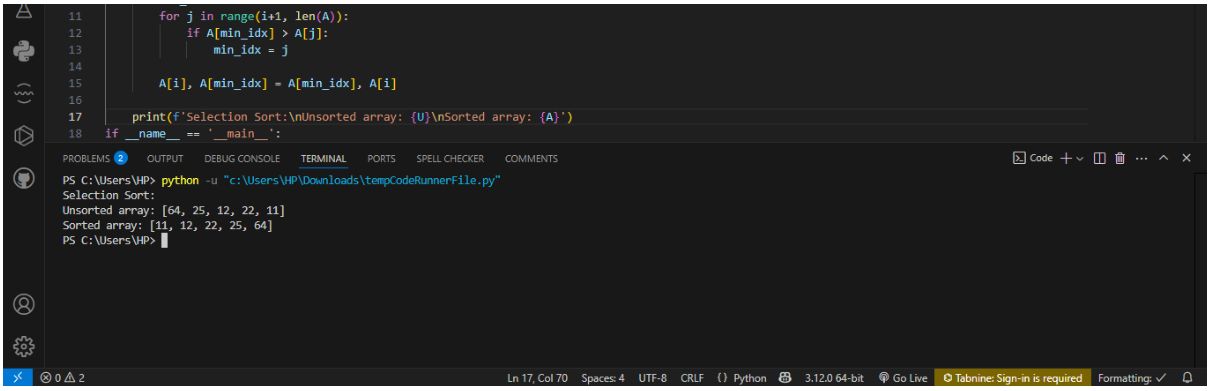
ASSIGNMENT NO:-03

Implement Greedy search algorithm for any of the following application:

I. Selection Sort
II. Minimum Spanning Tree Single-Source Shortest Path Problem
III. Single-Source Shortest Path Problem
IV. Job Scheduling Problem
V. Prim's Minimal Spanning Tree Algorithm
VI. Kruskal's Minimal Spanning Tree Algorithm
VII. Dijkstra's Minimal Spanning Tree Algorithm

```
import sys, heapq

from collections import defaultdict

from math import inf


def selectionSort(A):

    U = A.copy()

    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(f'Selection Sort:\nUnsorted array: {U}\nSorted array: {A}')

if __name__ == '__main__':

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

    selectionSort(A)
```

OUTPUT:



```python
        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(f'Selection Sort:\nUnsorted array: {U}\nSorted array: {A}')
if __name__ == '__main__':
```

```
PS C:\Users\HP> python -u "c:\Users\HP\Downloads\tempCodeRunnerFile.py"
Selection Sort:
Unsorted array: [64, 25, 12, 22, 11]
Sorted array: [11, 12, 22, 25, 64]
PS C:\Users\HP> 
```