

1. Selection Sort

```
9th.py - C:\Users\Dharani M\AppData\Local\Programs\Python\Python312\9th.py (3.12.3)
File Edit Format Run Options Window Help

arr=[2,26,24,12]
n=len(arr)
for i in range(n-1):
    min=i
    for j in range(i+1,n):
        if arr[j]<arr[min]:
            min=j
    if min!=i:
        temp=arr[min]
        arr[min]=arr[i]
        arr[i]=temp
print(arr)
```

```
IDLE Shell 3.12.3
File Edit Shell Debug Options Window Help

Python 3.12.3 (tags/v3.12.3:f6650f9, Apr 9 2024, 14:05:25) [MSC v.1938 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" f
or more information.

>>>
= RESTART: C:\Users\Dharani M\AppData\Local\Programs\Python\Python312\9th.py
Sorted array: [11, 12, 22, 25, 64]
>>>
== RESTART: C:\Users\Dharani M\AppData\Local\Programs\Python\Python312\9th.py ==
Sorted array: [2, 6, 15, 24, 26]
\
>>>
== RESTART: C:\Users\Dharani M\AppData\Local\Programs\Python\Python312\9th.py ==
[2, 12, 24, 26]
>>>
== RESTART: C:\Users\Dharani M\AppData\Local\Programs\Python\Python312\9th.py ==
[2, 12, 24, 26]
>>>
```

2. Bubble Sort

bubble sortt.py - C:/Users/Dharani M/AppData/Local/Programs/Python/Python312/bubble sortt.py (3.12.3)

File Edit Format Run Options Window Help

```
a=[2,5,6,7,3,12]
n=len(a)
for i in range(0,n-1):
    for j in range(i,n):
        if a[i]>a[j]:
            a[i],a[j]=a[j],a[i]
print(a)
```

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Python 3.12.3 (tags/v3.12.3:f6650f9, Apr 9 2024, 14:05:25) [MSC v.1938 64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.

>>>

= RESTART: C:/Users/Dharani M/AppData/Local/Programs/Python/Python312/bubble sortt.py
[2, 3, 5, 6, 7, 12]

>>>

= RESTART: C:/Users/Dharani M/AppData/Local/Programs/Python/Python312/bubble sortt.py
[2, 3, 5, 6, 7, 12]

>>>

3. Insertion sort

```
insertion.py - C:/Users/Dharani M/AppData/Local/Programs/Python/Python312/insertion.py (3.12.3)
File Edit Format Run Options Window Help
n=[1,5,2,6,4]
a=len(n)
for i in range(0,a):
    key=n[i]
    j=i-1
    while j>0 and key<n[j]:
        n[j+1]=n[j]
        j-=1
    n[j+1]=key

print(n)
```

```
IDLE Shell 3.12.3
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Python 3.12.3 (tags/v3.12.3:f6650f9, Apr 9 2024, 14:05:25) [MSC v.1938
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:/Users/Dharani M/AppData/Local/Programs/Python/Python312/in
[1, 2, 4, 5, 6]
>>>
===== RESTART: C:/Users/Dharani M/AppData/Local/Programs/P
[1, 2, 4, 5, 6]
>>>
```

4. Sequential Search

```
sequential.py - C:\Users\Dharani M\AppData\Local\Programs\Python\Python312\sequential.py (3.12.3)
File Edit Format Run Options Window Help
arr = [5, 3, 7, 1, 9, 2]
target = 11
found = False
for index, element in enumerate(arr):
    if element == target:
        found = True
        break
if found:
    print(f"Element {target} found at index {index}.")
else:
    print(f"Element {target} not found in the list.")
```

```
IDLE Shell 3.12.3
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Python 3.12.3 (tags/v3.12.3:f6650f9, Apr 9 2024, 14:05:25) [MSC v.1938 64 bit (AMD64)] on wi
Type "help", "copyright", "credits" or "license()" for more information.
>>>
= RESTART: C:\Users\Dharani M\AppData\Local\Programs\Python\Python312\sequential.py
Element 11 not found in the list.
>>>
```

5.Brute-Force String Matching

6.Closest-

Pair

seq in string.py - C:/Users/Dharani M/AppData/Local/Programs/Python/Python312/seq in string.py (3.12.3)

File Edit Format Run Options Window Help

```
arr = ["apple", "banana", "strawberry", "papaya", "pomogranate", "grapes"]
target = "banana"
found = False
for index, element in enumerate(arr):
    if element == target:
        found = True
        break
if found:
    print(f"Element '{target}' {index}")
else:
    print(f"Element '{target}' not found ")
```

IDLE Shell 3.12.3

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Python 3.12.3 (tags/v3.12.3:f6650f9, Apr 9 2024, 14:05:25) [MSC v.1938
64 bit (AMD64)] on win32
Type "help", "copyright", "credits" or "license()" for more information.

>>>

= RESTART: C:/Users/Dharani M/AppData/Local/Programs/Python/Python312/se
q in string.py

Element 'banana' 1

>>>

```
clothes.py - C:/Users/Dharani M/AppData/Local/Programs/Python/Python312/clothes.py (3.12.3)
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import math
def closest_pair(points):
    min_dist = float('inf')
    closest = (None, None)
    for i in range(len(points)):
        for j in range(i + 1, len(points)):
            d = math.sqrt((points[i][0] - points[j][0])**2 + (points[i][1] - points[j][1])**2)
            if d < min_dist:
                min_dist = d
                closest = (points[i], points[j])
    return closest
points = [(2,3), (5, 4), (6,9), (7, 8)]
print(closest_pair(points))
```

```
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Python 3.12.
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>>>
= RESTART: C
12/clothes.py
((6, 9), (7,
>>>
= RESTART: C
12/clothes.py
((6, 9), (7,
>>>
```

8. Exhaustive Search

```
exhaustive Search.py - C:/Users/Dharani M/AppData/Local/Programs/Python/Python312/exhaustive Search.py (...
File Edit Format Run Options Window Help

def maxPackedSets(items, sets):

    maxSets = 0

    for set in sets:
        # Initialize the number of sets that can be packed to 0
        numSets = 0

        for item in items:
            if item in set:
                numSets += 1
                tems = [i for i in items if i != item]
                maxSets = max(maxSets, numSets)
    return maxSets
items = [1, 2, 3, 4, 5, 6]
sets = [
    [1, 2, 3],
    [4, 5],
    [5, 6],
    [1, 4]
]
maxSets = maxPackedSets(items, sets)
print(f"Maximum number of sets that can be packed: {maxSets}")
```

```
IDLE Shell 3.12.3
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Python 3.12.3 (tags/v3.12.3:f6
on win32
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>>>
= RESTART: C:/Users/Dharani M/
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Maximum number of sets that ca
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