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CHALLENGE HATFD1025

PROBLEM STATEMENT:

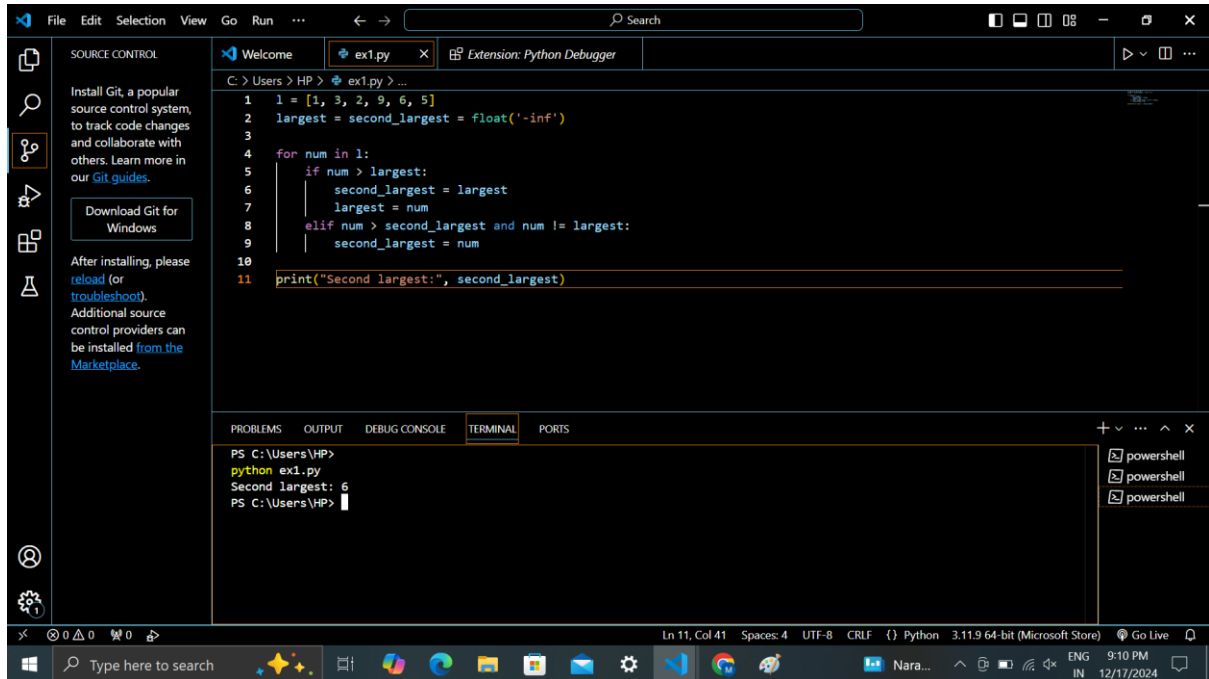
- **Find the Second Largest Element in an Array** Write a program to find the second-largest element in an array of integers without using any sorting algorithms or built-in array functions.

Instructions: Traverse the array manually to find both the largest and second-largest elements

CODING:

```
l = [1, 3, 2, 9, 6, 5]
largest = second_largest = float('-inf')
for num in l:
    if num > largest:
        second_largest = largest
        largest = num
    elif num > second_largest and num != largest:
        second_largest = num
print("Second largest:", second_largest)
```

OUTPUT:



The screenshot shows the Visual Studio Code interface. On the left is the Source Control sidebar. The main editor area displays a file named `ex1.py` with the following Python code:

```
1 l = [1, 3, 2, 9, 6, 5]
2 largest = second_largest = float('-inf')
3
4 for num in l:
5     if num > largest:
6         second_largest = largest
7         largest = num
8     elif num > second_largest and num != largest:
9         second_largest = num
10
11 print("Second largest:", second_largest)
```

Below the editor is the TERMINAL panel, which shows the command `python ex1.py` being executed in a PowerShell window. The output of the script is:

```
PS C:\Users\HP> python ex1.py
Second largest: 6
PS C:\Users\HP>
```

The status bar at the bottom indicates the file is at line 11, column 41, using UTF-8 encoding with CRLF line endings. The Python version is 3.11.9 64-bit (Microsoft Store).

2ND

```
l = [1, 90, 2, 15, 6, 37]
```

```
largest = second_largest = float('-inf')
```

```
for num in l:
```

```
    if num > largest:
```

```
        second_largest = largest
```

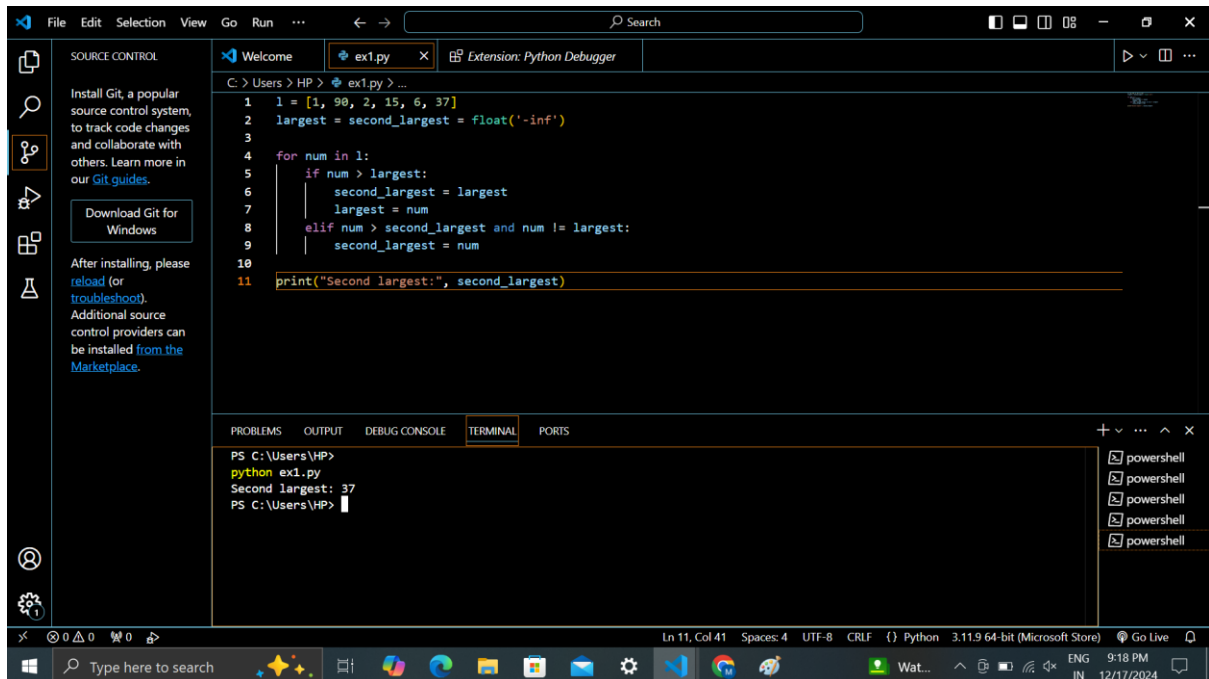
```
        largest = num
```

```
    elif num > second_largest and num != largest:
```

```
        second_largest = num
```

```
print("Second largest:", second_largest)
```

OUTPUT:



The screenshot shows the Visual Studio Code interface. The editor window displays a Python file named `ex1.py` with the following code:

```
1 l = [1, 90, 2, 15, 6, 37]
2 largest = second_largest = float('-inf')
3
4 for num in l:
5     if num > largest:
6         second_largest = largest
7         largest = num
8     elif num > second_largest and num != largest:
9         second_largest = num
10
11 print("Second largest:", second_largest)
```

The bottom panel shows the TERMINAL output:

```
PS C:\Users\HP> python ex1.py
Second largest: 37
PS C:\Users\HP>
```

3rd:

```
l = [1, 979, 2, 1007, 81, 103]
```

```
largest = second_largest = float('-inf')
```

```
for num in l:
```

```
    if num > largest:
```

```
        second_largest = largest
```

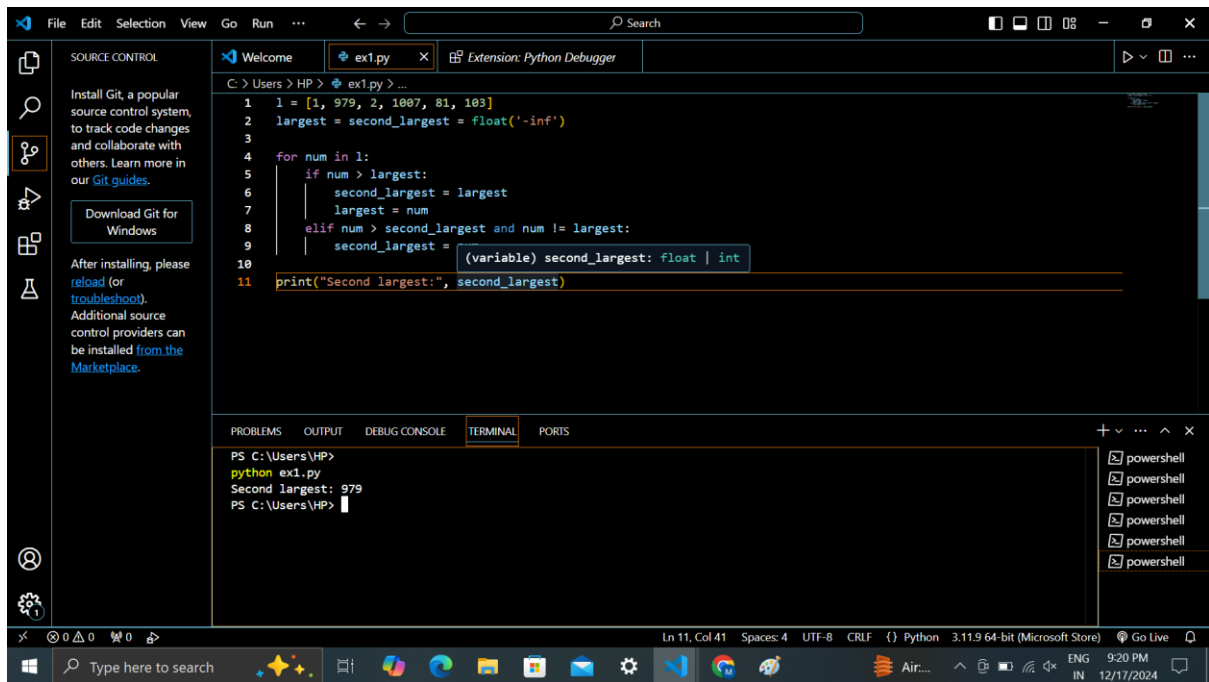
```
        largest = num
```

```
    elif num > second_largest and num != largest:
```

```
        second_largest = num
```

```
print("Second largest:", second_largest)
```

OUTPUT:



The screenshot displays the Visual Studio Code interface. On the left, the 'SOURCE CONTROL' sidebar is visible with instructions to install Git. The main editor window shows a Python file named 'ex1.py' with the following code:

```
1 l = [1, 979, 2, 1007, 81, 103]
2 largest = second_largest = float('-inf')
3
4 for num in l:
5     if num > largest:
6         second_largest = largest
7         largest = num
8     elif num > second_largest and num != largest:
9         second_largest = (variable) second_largest: float | int
10
11 print("Second largest:", second_largest)
```

Below the editor, the 'TERMINAL' panel is active, showing the command prompt output:

```
PS C:\Users\HP>
python ex1.py
Second largest: 979
PS C:\Users\HP>
```

The status bar at the bottom indicates the file is at line 11, column 41, using UTF-8 encoding with CRLF line endings. The Python version is 3.11.9 64-bit (Microsoft Store). The system clock shows 9:20 PM on 12/17/2024.