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Batch: Data Engineering

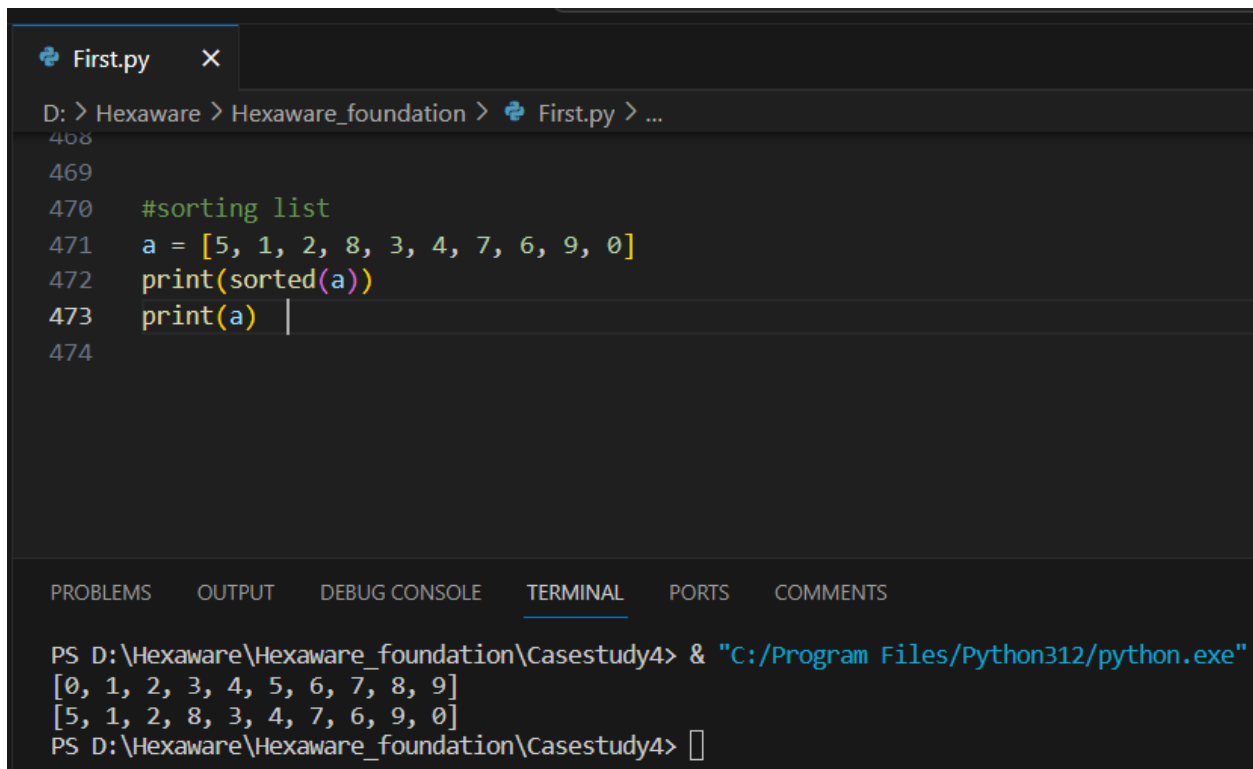
Date:31/01/2024

Topic: Python(SORTING,JSON,UNIQUE ELEMENT)

Solution:

1.Python:

Sorting:



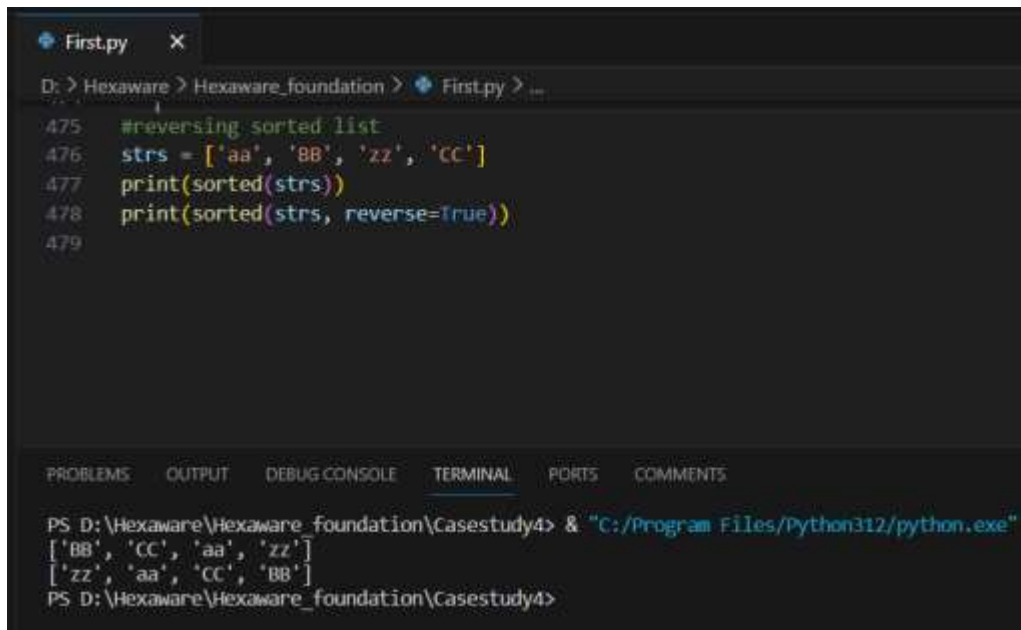
The screenshot shows a Python IDE with a file named 'First.py'. The code in the editor is as follows:

```
468  
469  
470 #sorting list  
471 a = [5, 1, 2, 8, 3, 4, 7, 6, 9, 0]  
472 print(sorted(a))  
473 print(a)  
474
```

Below the editor, the 'TERMINAL' tab is active, showing the command to run the script and its output:

```
PS D:\Hexaware\Hexaware_foundation\Casestudy4> & "C:/Program Files/Python312/python.exe"  
[0, 1, 2, 3, 4, 5, 6, 7, 8, 9]  
[5, 1, 2, 8, 3, 4, 7, 6, 9, 0]  
PS D:\Hexaware\Hexaware_foundation\Casestudy4>
```

Reversing sorted list:



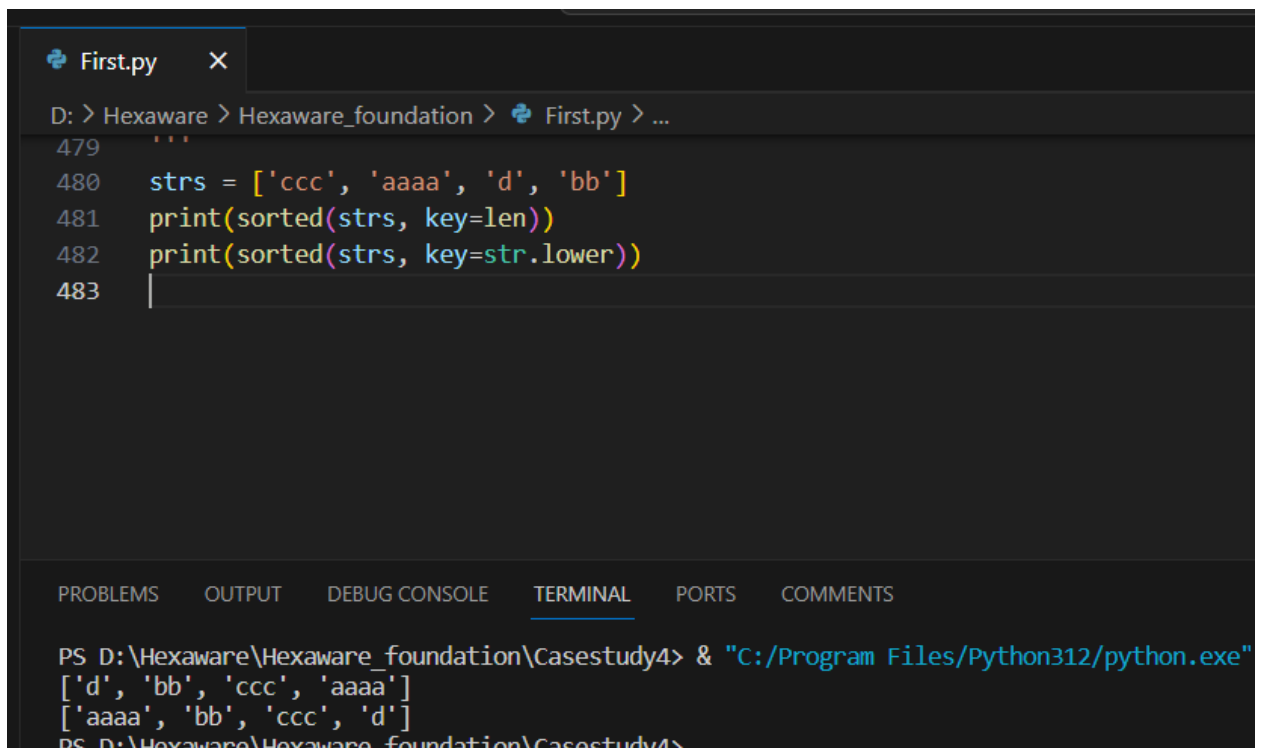
The screenshot shows a Python IDE with a file named 'First.py'. The code in the editor is as follows:

```
475 #reversing sorted list
476 strs = ['aa', 'BB', 'zz', 'cc']
477 print(sorted(strs))
478 print(sorted(strs, reverse=True))
479
```

The terminal output at the bottom shows the execution of the code:

```
PS D:\Hexaware\Hexaware_foundation\Casestudy4> & "C:/Program Files/Python312/python.exe"
['BB', 'CC', 'aa', 'zz']
['zz', 'aa', 'CC', 'BB']
PS D:\Hexaware\Hexaware_foundation\Casestudy4>
```

With use of key



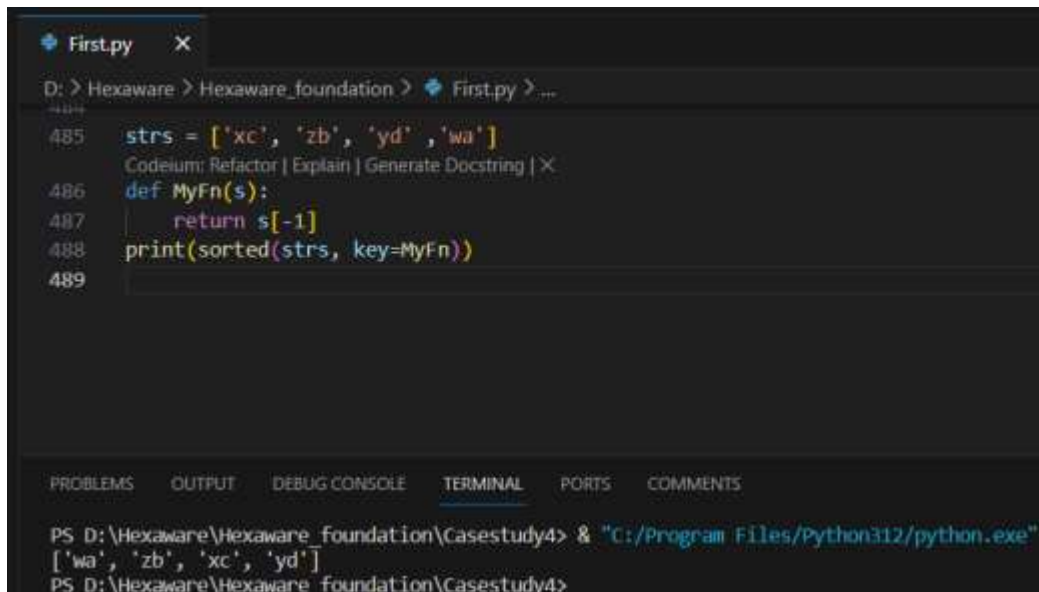
The screenshot shows a Python IDE with a file named 'First.py'. The code in the editor is as follows:

```
479 '''
480 strs = ['ccc', 'aaaa', 'd', 'bb']
481 print(sorted(strs, key=len))
482 print(sorted(strs, key=str.lower))
483
```

The terminal output at the bottom shows the execution of the code:

```
PS D:\Hexaware\Hexaware_foundation\Casestudy4> & "C:/Program Files/Python312/python.exe"
['d', 'bb', 'ccc', 'aaaa']
['aaaa', 'bb', 'ccc', 'd']
PS D:\Hexaware\Hexaware_foundation\Casestudy4>
```

Sorting based on last letter:

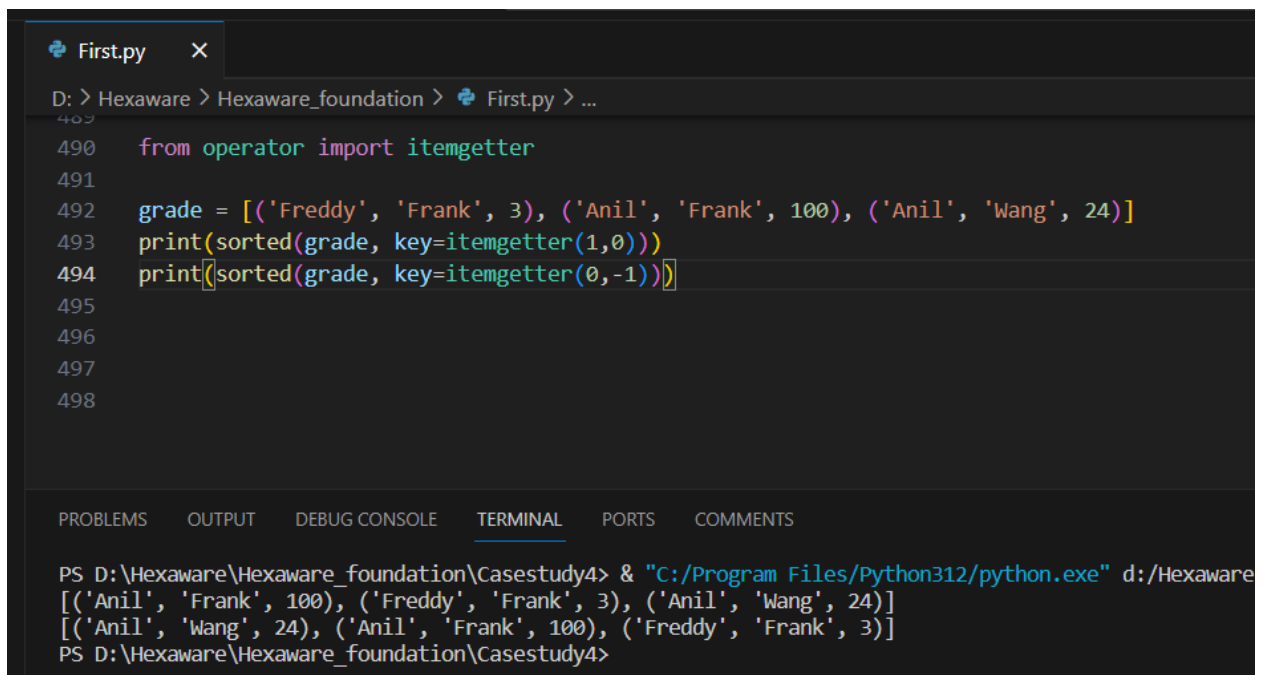


```
First.py X
D: > Hexaware > Hexaware_foundation > First.py > ...
485 strs = ['xc', 'zb', 'yd', 'wa']
486 def MyFn(s):
487     return s[-1]
488 print(sorted(strs, key=MyFn))
489

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS COMMENTS

PS D:\Hexaware\Hexaware_foundation\Casestudy4> & "C:/Program Files/Python312/python.exe"
['wa', 'zb', 'xc', 'yd']
PS D:\Hexaware\Hexaware_foundation\Casestudy4>
```

With Itemgetter:

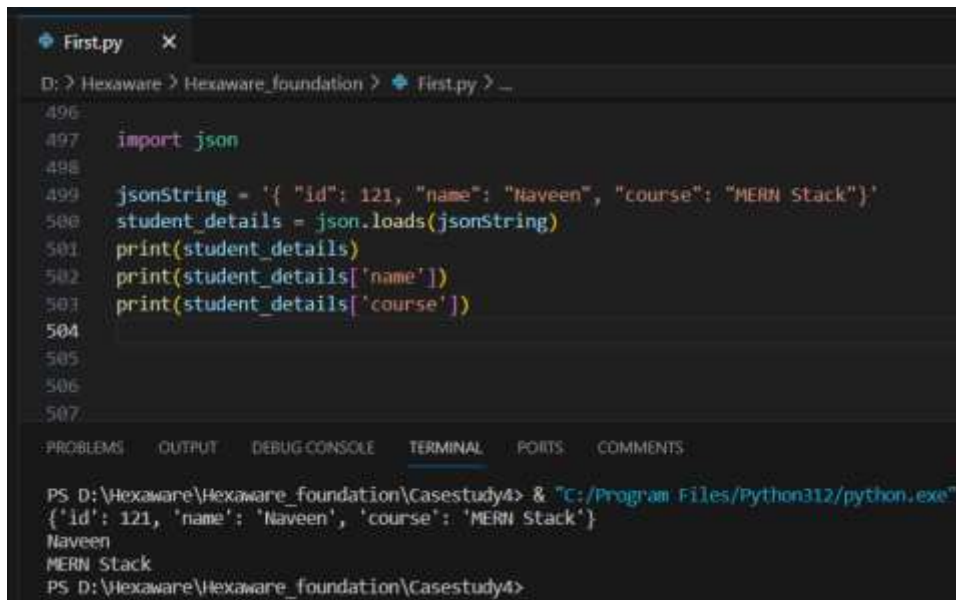


```
First.py X
D: > Hexaware > Hexaware_foundation > First.py > ...
490 from operator import itemgetter
491
492 grade = [('Freddy', 'Frank', 3), ('Anil', 'Frank', 100), ('Anil', 'Wang', 24)]
493 print(sorted(grade, key=itemgetter(1,0)))
494 print(sorted(grade, key=itemgetter(0,-1)))
495
496
497
498

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS COMMENTS

PS D:\Hexaware\Hexaware_foundation\Casestudy4> & "C:/Program Files/Python312/python.exe" d:/Hexaware
[('Anil', 'Frank', 100), ('Freddy', 'Frank', 3), ('Anil', 'Wang', 24)]
[('Anil', 'Wang', 24), ('Anil', 'Frank', 100), ('Freddy', 'Frank', 3)]
PS D:\Hexaware\Hexaware_foundation\Casestudy4>
```

JSON.loads :



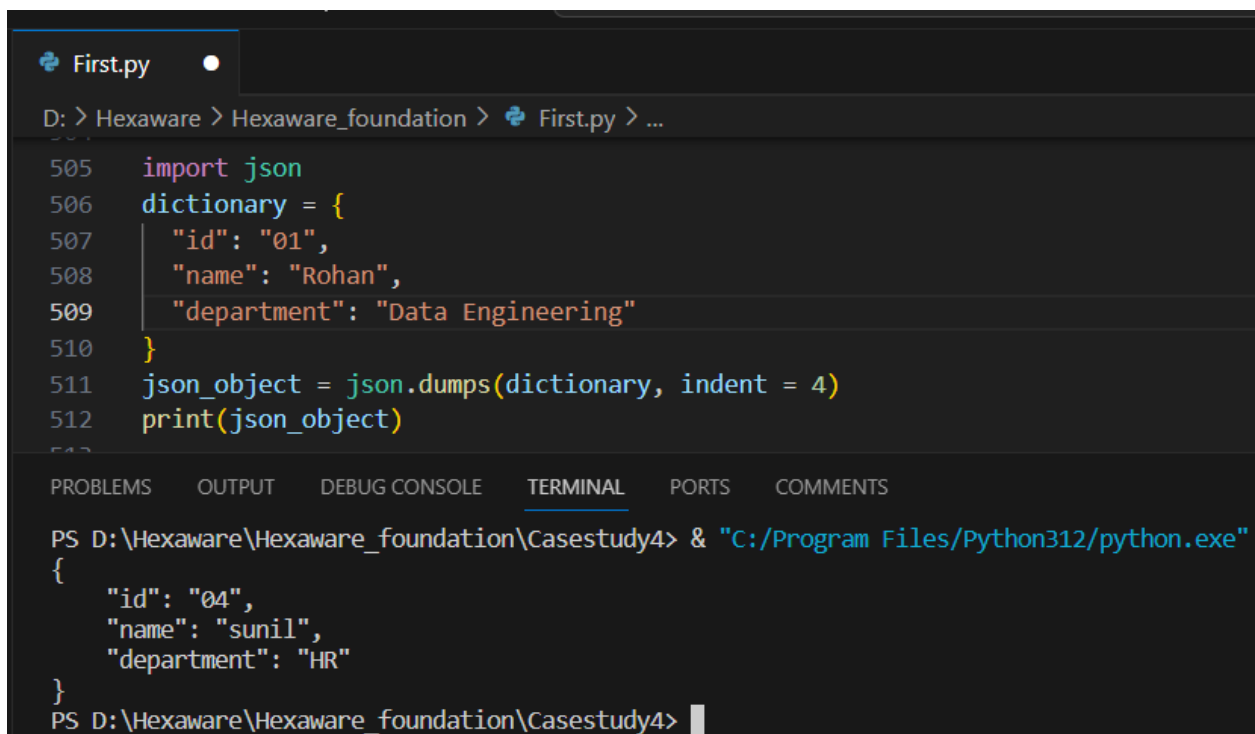
```
First.py X
D: > Hexaware > Hexaware_foundation > First.py > ...

496
497 import json
498
499 jsonString = '{ "id": 121, "name": "Naveen", "course": "MERN Stack"}'
500 student_details = json.loads(jsonString)
501 print(student_details)
502 print(student_details['name'])
503 print(student_details['course'])
504
505
506
507

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS COMMENTS

PS D:\Hexaware\Hexaware_foundation\Casestudy4> & "C:/Program Files/Python312/python.exe"
{'id': 121, 'name': 'Naveen', 'course': 'MERN Stack'}
Naveen
MERN Stack
PS D:\Hexaware\Hexaware_foundation\Casestudy4>
```

JSON.dumps:



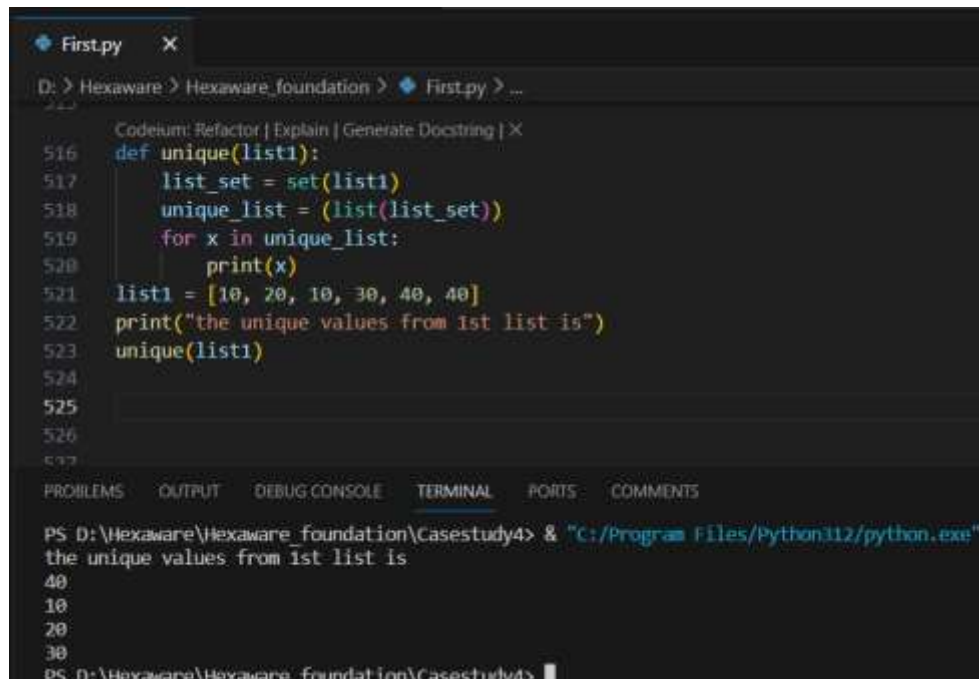
```
First.py ●
D: > Hexaware > Hexaware_foundation > First.py > ...

505 import json
506 dictionary = {
507     "id": "01",
508     "name": "Rohan",
509     "department": "Data Engineering"
510 }
511 json_object = json.dumps(dictionary, indent = 4)
512 print(json_object)
513

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS COMMENTS

PS D:\Hexaware\Hexaware_foundation\Casestudy4> & "C:/Program Files/Python312/python.exe"
{
    "id": "04",
    "name": "sunil",
    "department": "HR"
}
PS D:\Hexaware\Hexaware_foundation\Casestudy4> |
```

Unique element using set:



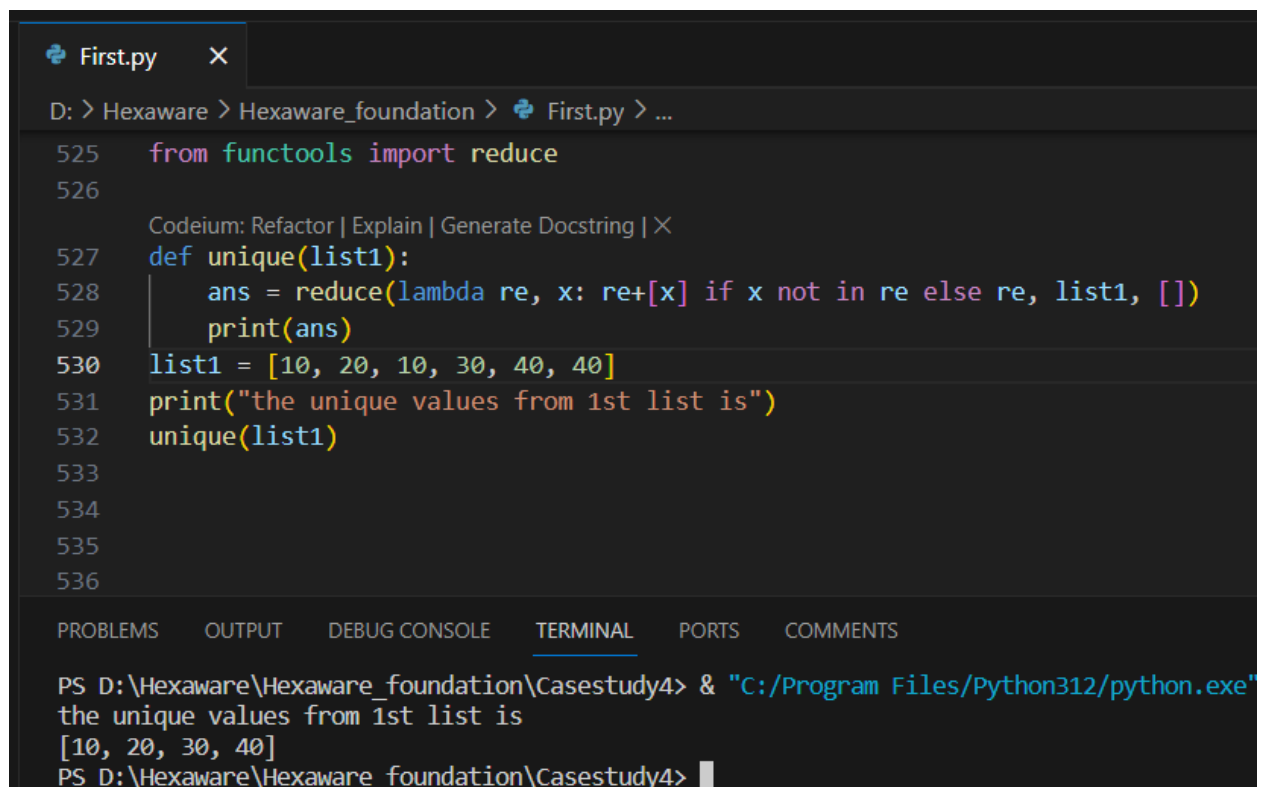
```
First.py X
D: > Hexaware > Hexaware_foundation > First.py > ...

Codeium: Refactor | Explain | Generate Docstring | X
516 def unique(list1):
517     list_set = set(list1)
518     unique_list = (list(list_set))
519     for x in unique_list:
520         print(x)
521 list1 = [10, 20, 10, 30, 40, 40]
522 print("the unique values from 1st list is")
523 unique(list1)
524
525
526
527

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS COMMENTS

PS D:\Hexaware\Hexaware_foundation\Casestudy4> & "C:/Program Files/Python312/python.exe"
the unique values from 1st list is
40
10
20
30
PS D:\Hexaware\Hexaware_foundation\Casestudy4>
```

Unique elements with reduce&lambda



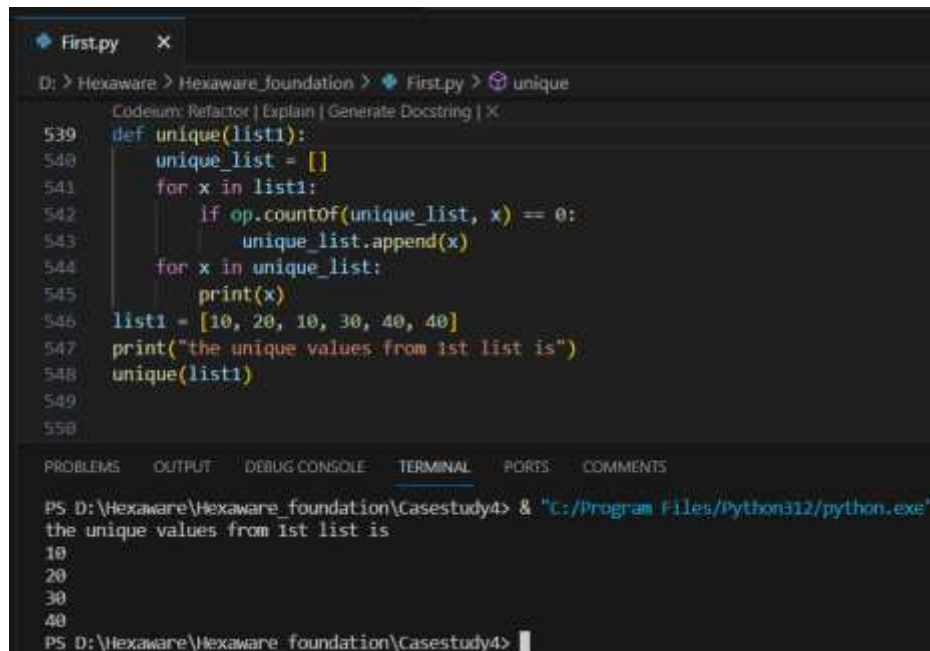
```
First.py X
D: > Hexaware > Hexaware_foundation > First.py > ...

525 from functools import reduce
526
Codeium: Refactor | Explain | Generate Docstring | X
527 def unique(list1):
528     ans = reduce(lambda re, x: re+[x] if x not in re else re, list1, [])
529     print(ans)
530 list1 = [10, 20, 10, 30, 40, 40]
531 print("the unique values from 1st list is")
532 unique(list1)
533
534
535
536

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS COMMENTS

PS D:\Hexaware\Hexaware_foundation\Casestudy4> & "C:/Program Files/Python312/python.exe"
the unique values from 1st list is
[10, 20, 30, 40]
PS D:\Hexaware\Hexaware_foundation\Casestudy4>
```

Unique elements with count method:

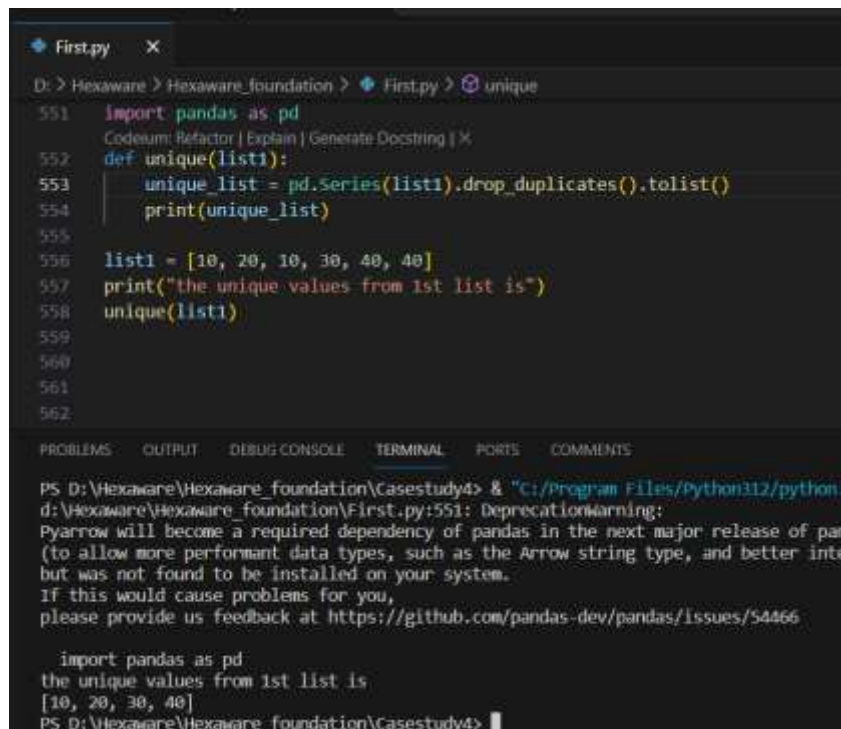


```
First.py X
D: > Hexaware > Hexaware_foundation > First.py > unique
Codeium: Refactor | Explain | Generate Docstring | X
539 def unique(list1):
540     unique_list = []
541     for x in list1:
542         if op.countOf(unique_list, x) == 0:
543             unique_list.append(x)
544     for x in unique_list:
545         print(x)
546 list1 = [10, 20, 10, 30, 40, 40]
547 print("the unique values from 1st list is")
548 unique(list1)
549
550
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS COMMENTS

```
PS D:\Hexaware\Hexaware_foundation\Casestudy4> & "C:/Program Files/Python312/python.exe"
the unique values from 1st list is
10
20
30
40
PS D:\Hexaware\Hexaware_foundation\Casestudy4>
```

Unique elements with pandas series



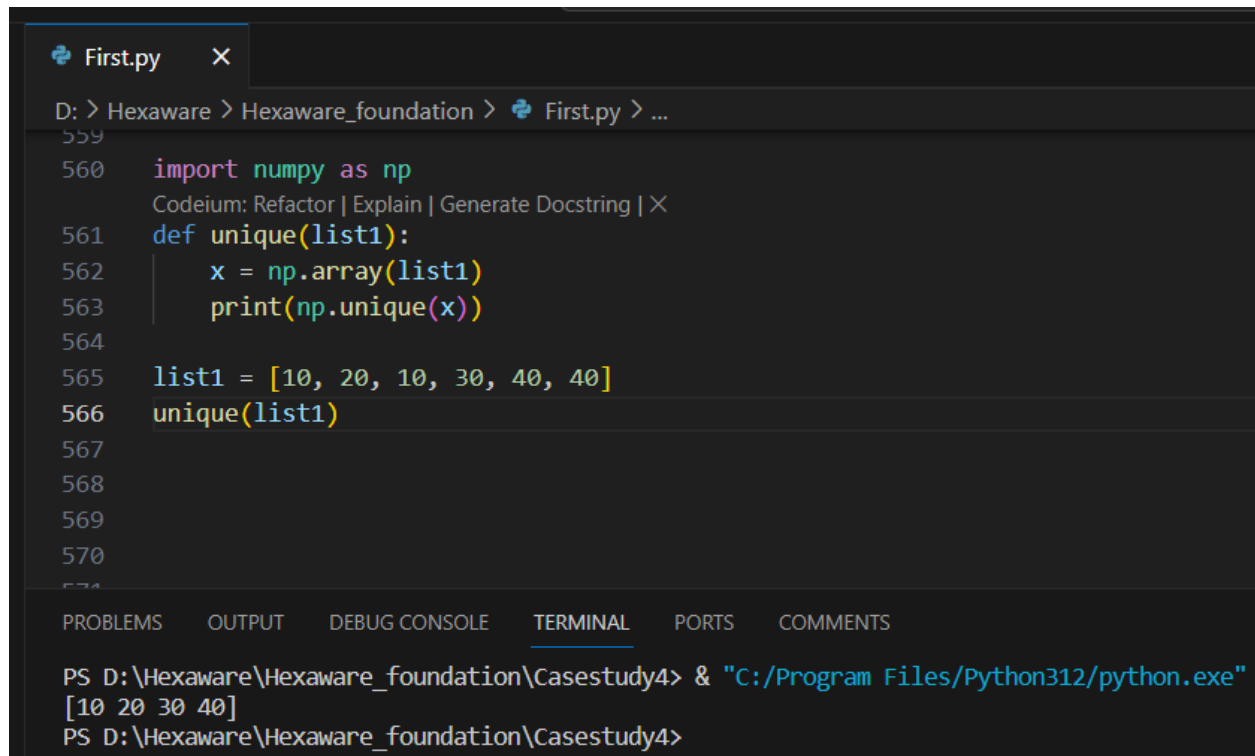
```
First.py X
D: > Hexaware > Hexaware_foundation > First.py > unique
Codeium: Refactor | Explain | Generate Docstring | X
551 import pandas as pd
552 def unique(list1):
553     unique_list = pd.Series(list1).drop_duplicates().tolist()
554     print(unique_list)
555
556 list1 = [10, 20, 10, 30, 40, 40]
557 print("the unique values from 1st list is")
558 unique(list1)
559
560
561
562
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS COMMENTS

```
PS D:\Hexaware\Hexaware_foundation\Casestudy4> & "C:/Program Files/Python312/python.exe"
d:\Hexaware\Hexaware_foundation\First.py:551: DeprecationWarning:
Pylarrow will become a required dependency of pandas in the next major release of pandas
(to allow more performant data types, such as the Arrow string type, and better interop)
but was not found to be installed on your system.
If this would cause problems for you,
please provide us feedback at https://github.com/pandas-dev/pandas/issues/54466

import pandas as pd
the unique values from 1st list is
[10, 20, 30, 40]
PS D:\Hexaware\Hexaware_foundation\Casestudy4>
```

Unique element with numpy:



The screenshot shows a code editor with a file named 'First.py' open. The code defines a function 'unique' that uses numpy to find unique elements in a list. The list 'list1' is defined as [10, 20, 10, 30, 40, 40]. The function prints the unique elements. The terminal output shows the command to run the script and the resulting output: [10 20 30 40].

```
First.py X
D: > Hexaware > Hexaware_foundation > First.py > ...
559
560 import numpy as np
    Codeium: Refactor | Explain | Generate Docstring | X
561 def unique(list1):
562     x = np.array(list1)
563     print(np.unique(x))
564
565 list1 = [10, 20, 10, 30, 40, 40]
566 unique(list1)
567
568
569
570
571
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS COMMENTS

```
PS D:\Hexaware\Hexaware_foundation\Casestudy4> & "C:/Program Files/Python312/python.exe"
[10 20 30 40]
PS D:\Hexaware\Hexaware_foundation\Casestudy4>
```