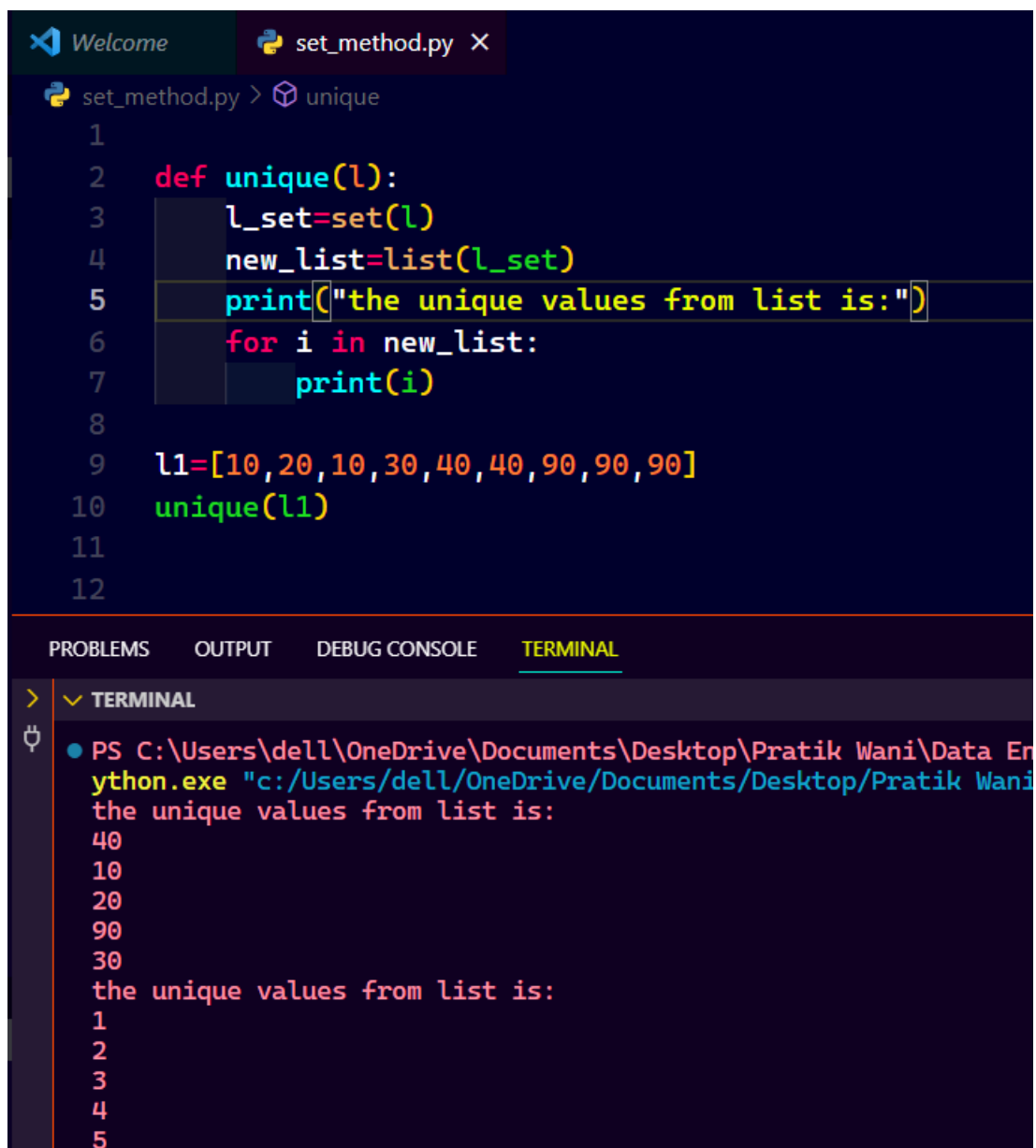


Day 9 Python Assignment no 3

Pratik Wani

- Get Unique Values from a List Using Set Method:
 - Insert the values of the list in a set.
 - Set only stores a value once even if it is inserted more than once.
 - At end, convert the set into list.



```
set_method.py > unique
1
2 def unique(l):
3     l_set=set(l)
4     new_list=list(l_set)
5     print("the unique values from list is:")
6     for i in new_list:
7         print(i)
8
9 l1=[10,20,10,30,40,40,90,90,90]
10 unique(l1)
11
12
```

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```
● PS C:\Users\dell\OneDrive\Documents\Desktop\Pratik Wani\Data En
python.exe "c:/Users/dell/OneDrive/Documents/Desktop/Pratik Wani
the unique values from list is:
40
10
20
90
30
the unique values from list is:
1
2
3
4
5
```

- Get unique values from a list using reduce function:
 - Iterate over all element and checks if the element is a duplicate or unique value.

```
1
2 from functools import reduce
3
4 def unique(list1):
5     ans=reduce(lambda re,x: re+[x] if x not in re else re, list1, [])
6     print("the unique values from 1st list is")
7     print(ans)
8
9
10 list1=[10,10,10,20,20,30]
11 unique(list1)
12
13 list2=[1,2,1,1,3,4,3,3,5]
14 unique(list2)
15
16
```

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● PS C:\Users\dell\OneDrive\Documents\Desktop\Pratik Wani\Data Engineering\Python\Day_9_Python_Assg_3> & C:/Users/dell/OneDrive/Python/Day_9_Python_Assg_3/re
on39/python.exe "c:/Users/dell/OneDrive/Documents/Desktop/Pratik Wani/Data Engineering/Python/Day_9_Python_Assg_3/re
the unique values from 1st list is
[10, 20, 30]
the unique values from 1st list is
[1, 2, 3, 4, 5]
○ PS C:\Users\dell\OneDrive\Documents\Desktop\Pratik Wani\Data Engineering\Python\Day_9_Python_Assg_3>

- Get unique values from list using countOf method:
 - For each element in list, it employs op.countOf() to check if x is present in empty list.
 - If not found x is appended to empty list.

```
1
2 import operator as op
3 def unique(list1):
4     unique_list = []
5     for x in list1:
6         if op.countOf(unique_list, x) == 0:
7             unique_list.append(x)
8     print("the unique values from list is")
9     for x in unique_list:
10        print(x)
11
12
13 list1 = [10, 20, 10, 30, 40, 40]
14 unique(list1)
15
16 list2 = [1, 2, 1, 1, 3, 4, 3, 3, 5]
17 unique(list2)
18
```

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```
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● PS C:\Users\de11\OneDrive\Documents\Desktop\Pratik Wani\Data Engineering\Python\
python.exe "c:/Users/de11/OneDrive/Documents/Desktop/Pratik Wani/Data Engineering
the unique values from list is
10
20
30
40
the unique values from list is
1
2
3
4
5
```

- Get unique values from a list using pandas module:
 - Here we use `drop_duplicates` to eliminate duplicates and obtain a list of unique values

```
unique_pandas.py > ...
1  import pandas as pd
2
3  def unique(l):
4      unique_list=pd.Series(l).drop_duplicates().tolist()
5      print("the unique values from list is")
6      for i in unique_list:
7          print(i)
8
9  l1=[10,20,10,30,40,40,80]
10 unique(l1)
11
12 l2=[1,2,1,1,3,4,3,3,5]
13 unique(l2)
14
```

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● PS C:\Users\dell\OneDrive\Documents\Desktop\Pratik Wani\Data Engineering\Python> python.exe "c:/Users/dell/OneDrive/Documents/Desktop/Pratik Wani/Data Engineering/unique_pandas.py"

the unique values from list is

10
20
30
40
80

the unique values from list is

1
2
3
4
5

- Get unique values from a list using collections.Counter:
 - We will get list of all the unique elements In the list by using * symbol.

```
1
2  from collections import Counter
3  def unique(list1):
4      print("the unique values from list is")
5      print(*Counter(list1))
6
7  list1=[10,20,10,30,40,40]
8  unique(list1)
9
10 list2 = [1,2,1,1,3,4,3,3,5]
11 unique(list2)
12
13
```

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● PS C:\Users\dell\OneDrive\Documents\Desktop\Pratik Wani\Data Engineering\python.exe "c:/Users/dell/OneDrive/Documents/Desktop/Pratik Wani/Data Engi
the unique values from list is
10 20 30 40
the unique values from list is
1 2 3 4 5

- Get Unique Values From a List Using dict.fromkeys:
 - We need to use a variable in which we will store the result after using the fromkeys method
 - We need to convert that result into a list
 - Because it will return a dictionary having all unique keys and no values

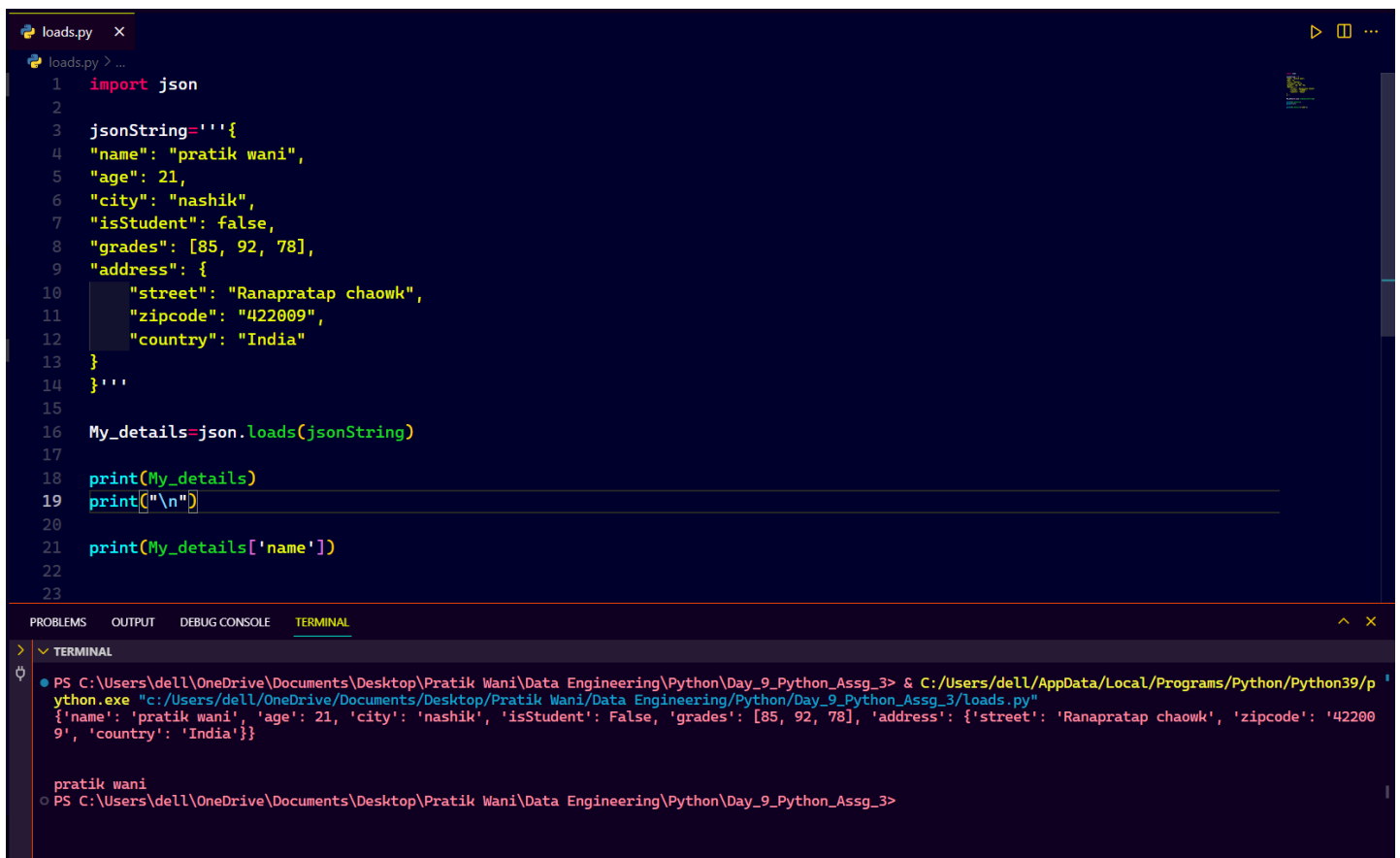
```
fromkey.py > ...
1
2
3  l1=[10,20,10,30,50,40]
4
5  l2=[1,2,1,1,3,4,3]
6
7  ul1=list(dict.fromkeys(l1))
8
9  ul2=list(dict.fromkeys(l2))
10
11
12  print(ul1,ul2,sep="\n")
13
14
```

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```
• PS C:\Users\dell\OneDrive\Documents\Desktop\Pratik Wani\Data on39/python.exe "c:/Users/dell/OneDrive/Documents/Desktop/Pra
[10, 20, 30, 50, 40]
[1, 2, 3, 4]
```

- Convert JSON String to Dictionary Python:
 - We need to import the json module.
 - Here I used loads function to convert json string into python dictionary.



```
loads.py
1 import json
2
3 jsonString='''{
4   "name": "pratik wani",
5   "age": 21,
6   "city": "nashik",
7   "isStudent": false,
8   "grades": [85, 92, 78],
9   "address": {
10      "street": "Ranapratap chaowk",
11      "zipcode": "422009",
12      "country": "India"
13   }
14 }'''
15
16 My_details=json.loads(jsonString)
17
18 print(My_details)
19 print("\n")
20
21 print(My_details['name'])
22
23
```

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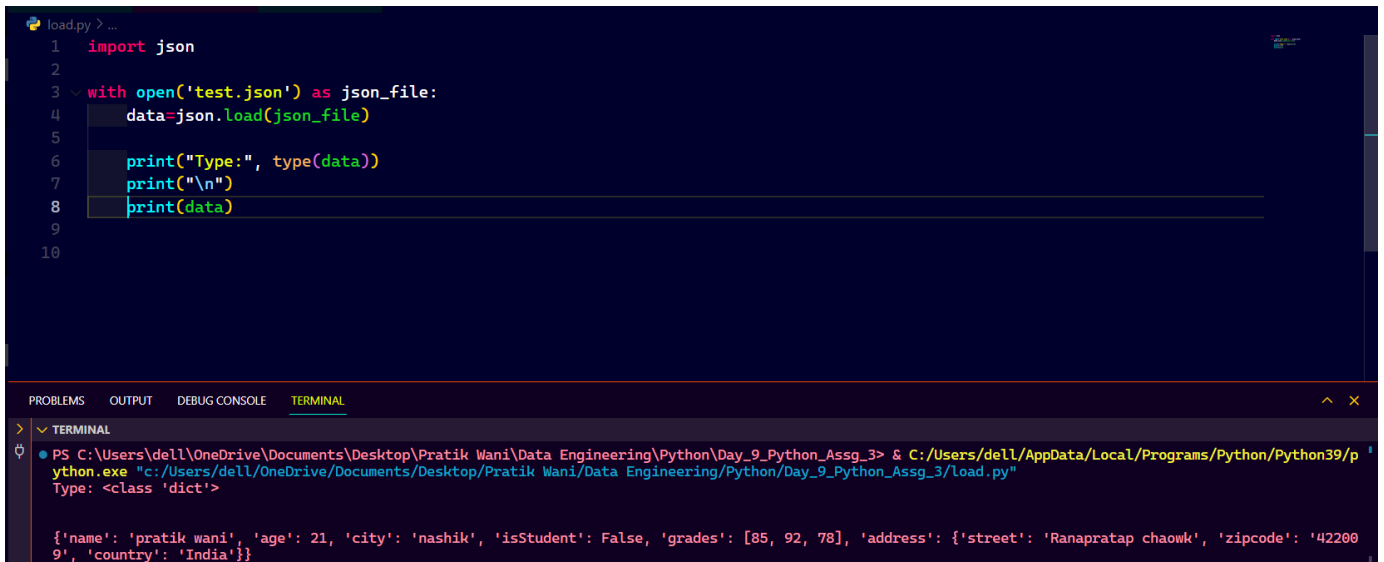
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```
PS C:\Users\dell\OneDrive\Documents\Desktop\Pratik Wani\Data Engineering\Python\Day_9_Python_Assg_3> & C:/Users/dell/AppData/Local/Programs/Python/Python39/p
ython.exe "c:/Users/dell/OneDrive/Documents/Desktop/Pratik Wani/Data Engineering/Python/Day_9_Python_Assg_3/loads.py"
{'name': 'pratik wani', 'age': 21, 'city': 'nashik', 'isStudent': False, 'grades': [85, 92, 78], 'address': {'street': 'Ranapratap chaowk', 'zipcode': '42200
9', 'country': 'India'}}

pratik wani
PS C:\Users\dell\OneDrive\Documents\Desktop\Pratik Wani\Data Engineering\Python\Day_9_Python_Assg_3>
```

- Convert JSON File to Python Object:

- We can convert JSON file to Python dictionary using `json.load()` method.
- firstly we open the json file using file handling in Python
- Then convert the file to Python object using the `json.load()` method



```
load.py > ...
1 import json
2
3 with open('test.json') as json_file:
4     data=json.load(json_file)
5
6     print("Type:", type(data))
7     print("\n")
8     print(data)
9
10
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

PS C:\Users\dell\OneDrive\Documents\Desktop\Pratik Wani\Data Engineering\Python\Day_9_Python_Assg_3> & C:/Users/dell/AppData/Local/Programs/Python/Python39/python.exe "c:/Users/dell/OneDrive/Documents/Desktop/Pratik Wani/Data Engineering/Python/Day_9_Python_Assg_3/load.py"

Type: <class 'dict'>

```
{'name': 'pratik wani', 'age': 21, 'city': 'nashik', 'isStudent': False, 'grades': [85, 92, 78], 'address': {'street': 'Ranapratap chaowk', 'zipcode': '422009', 'country': 'India'}}
```


- Read, Write and Parse JSON using Python:
 - Python read JSON file:
 - we have used the open() function to read the JSON file.
 - Then, the file is parsed using json.load() method which gives us a python dictionary.

```
R_W_P_J_P.py > ...
1  import json
2
3  student='{"id":"1", "name":"pratik", "class":"A", "Grade":30}'
4
5
6  student_dict=json.loads(student)
7  print(student_dict)
8
9  print(student_dict['name'])
10
```

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● PS C:\Users\dell\OneDrive\Documents\Desktop\Pratik Wani\Data Engineering\Python\ python.exe "c:/Users/dell/OneDrive/Documents/Desktop/Pratik Wani/Data Engineering, { 'id': '1', 'name': 'pratik', 'class': 'A', 'Grade': 30 }
pratik

○ PS C:\Users\dell\OneDrive\Documents\Desktop\Pratik Wani\Data Engineering\Python\

○ Convert Python Dictionary to JSON:

- For converting a Python dictionary to a JSON object we use the `json.dumps()` method of the JSON module in Python.
- We pass the Python dictionary to the `json.dumps()` method with `'indent=4'` to convert this Python dictionary into a JSON object.

```

dumps.py > ...
1  import json
2
3  my_data = {
4      "name": "pratik wani",
5      "age": 21,
6      "city": "nashik",
7      "isStudent": False,
8      "grades": [85, 92, 78],
9      "address": {
10         "street": "Ranapratap chaowk",
11         "zipcode": "422009",
12         "country": "India"
13     }
14 }
15
16 json_object=json.dumps(my_data,indent=4)
17 print(json_object)

```

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```

> ✓ TERMINAL
Python.exe "c:/Users/dell/OneDrive/Documents/Desktop/Pratik Wa
{
  "name": "pratik wani",
  "age": 21,
  "city": "nashik",
  "isStudent": false,
  "grades": [
    85,
    92,
    78
  ],
  "address": {
    "street": "Ranapratap chaowk",
    "zipcode": "422009",
    "country": "India"
  }
}

```

- Writing JSON to a file in Python:

- We can create and write into JSON file using `json.dump()` function of JSON module and file handling in Python
- we have opened a file named `flag.json` in writing mode using `'w'`.
- The file will be created if it does not exist. `Json.dump()` will transform the Python dictionary to a JSON string and it will be saved in the file `flag.json`

```
write_json.py > ...
1  import json
2
3  dictionary = {
4      "name": "pratik wani",
5      "age": 21,
6      "city": "nashik",
7      "isStudent": False,
8      "grades": [85, 92, 78],
9      "address": {
10         "street": "Ranapratap chaowk",
11         "zipcode": "422009",
12         "country": "India"
13     }
14 }
15
16 with open("flag.json", "w") as outfile:
17     json.dump(dictionary, outfile)
18
```

{...} flag.json X

{...} flag.json > ...

```
1  {"name": "pratik wani",  
2  "age": 21,  
3  "city": "nashik",  
4  "isStudent": false,  
5  "grades": [85, 92, 78],  
6  "address":  
7    {"street": "Ranapratap chaowk",  
8      "zipcode": "422009",  
9      "country": "India"}  
10 }
```

- Python Pretty Print JSON:

- When we convert a string to JSON and to make it more readable additional arguments in json.dumps function such as indent and sort_keys

```
preety.py > ...
1  import json
2
3  employee = '{"id": "01", "name": "Pratik", "department": "IT", "age": 21}'
4  employee_dict=json.loads(employee)
5
6  print(json.dumps(employee_dict,indent=4,sort_keys=True))
7
```

```

● PS C:\Users\dell\OneDrive\Documents\D
python.exe "c:/Users/dell/OneDrive/Doc
{
    "age": 21,
    "department": "Finance",
    "id": "09",
    "name": "Nitin"
}
○ PS C:\Users\dell\OneDrive\Documents\D
```

