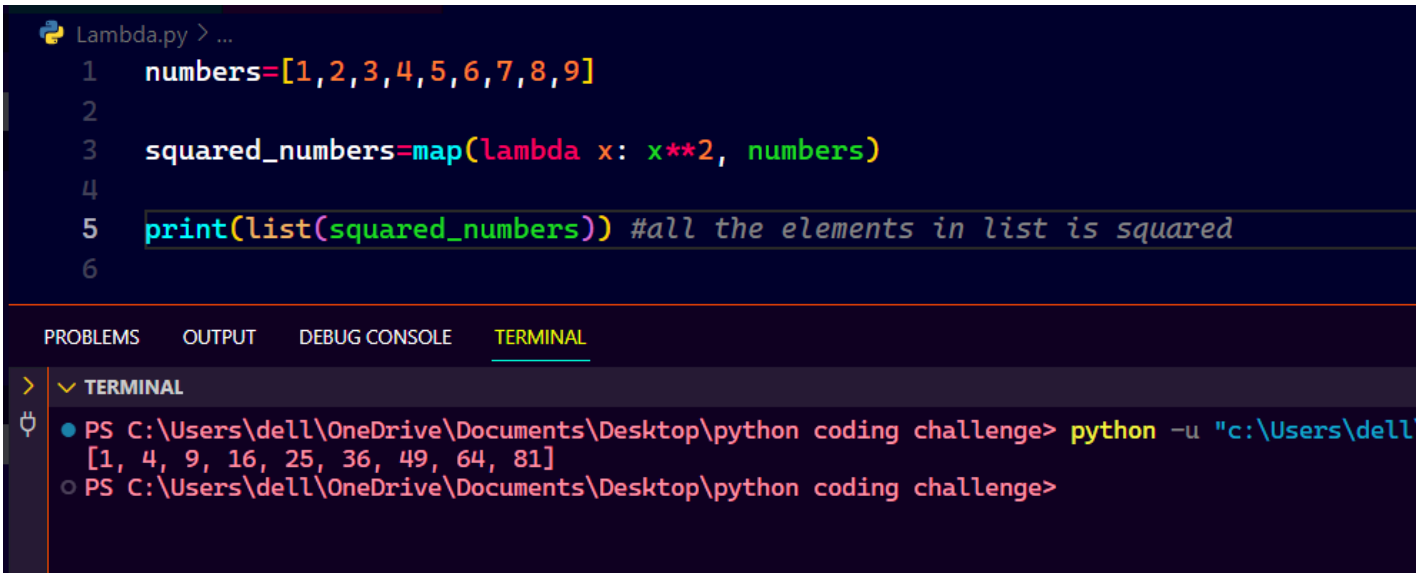
Python Coding Challenge

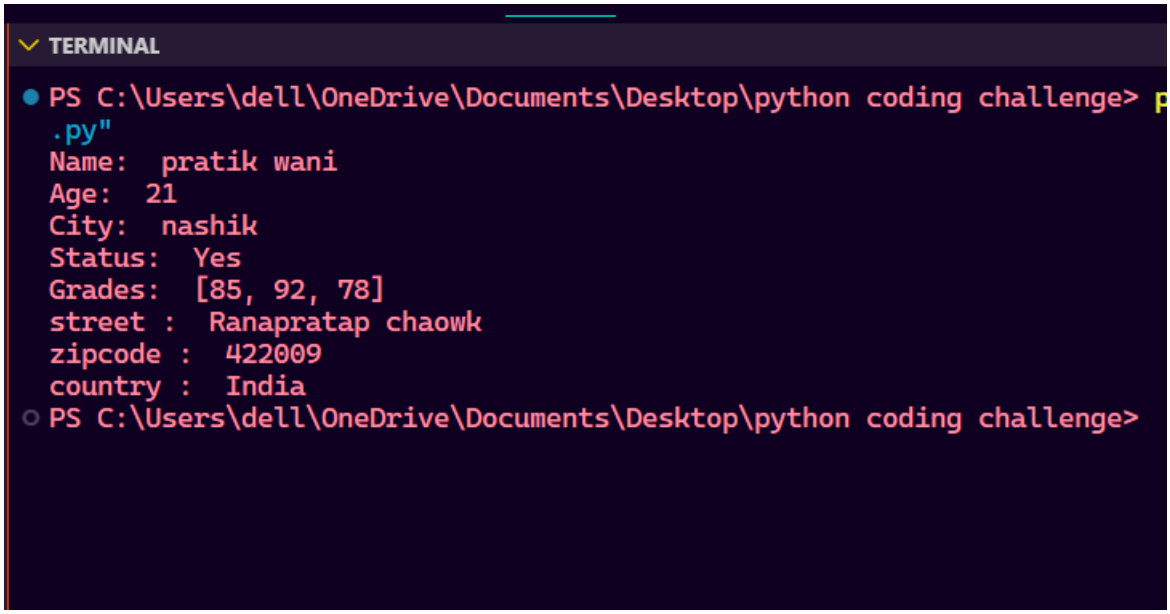
Pratik Wani

Question 2

- Execute with one example Lambda Functions in Python:
  - Lambda functions are also known as anonymous functions
  - Lambda functions don't have a name like regular functions defined with the def keyword
  - Here we just have to pass the parameters and then after ' : ' we have to give the statement we want to perform
  - We can also use the lambda functions with map, filter and reduce
  - In the following example I used the expression x**2 so the values are squared



- Read JSON Strings to Python Lists:
    - To read the json strings we can use the json module
    - There is function known as loads() which helps to convert the json string to python list
    - In the following example I make a nested json string with some personal details
    - And I converted it in the python list and then at end I printed the data of the python list


TERMINAL
PS C:\Users\dell\OneDrive\Documents\Desktop\python coding challenge> p
.py"
Name: pratik wani
Age: 21
City: nashik
Status: Yes
Grades: [85, 92, 78]
street : Ranapratap chaowk
zipcode : 422009
country : India
PS C:\Users\dell\OneDrive\Documents\Desktop\python coding challenge>

Question 1

- Explain Pandas for Data Processing:
  - Pandas is open source python library which is very useful for the data processing and data analysis purposes
  - It provides different functions needed to manipulate and analyze structured data
  - Some uses of Pandas:
    a) To create a series: one-dimensional labelled array
    b) To create a dataframe: two-dimensional labelled array
    c) Reading and Writing data: using read_csv and to_csv

Series_dataframe.py > ...

```python
import pandas as pd

#creating series
series=pd.Series(['P','R','A','T','I','K'])
print("Pandas Series:\n",series)
print("\n**********\n")

#creating dataframe using pandas
header=['Name','Age','Salary']
data=[['Pratik',21,'50000'],['Vikas',23,100000],['Rushi',22,120000]]
df=pd.DataFrame(data,columns=header)
print(df)
```

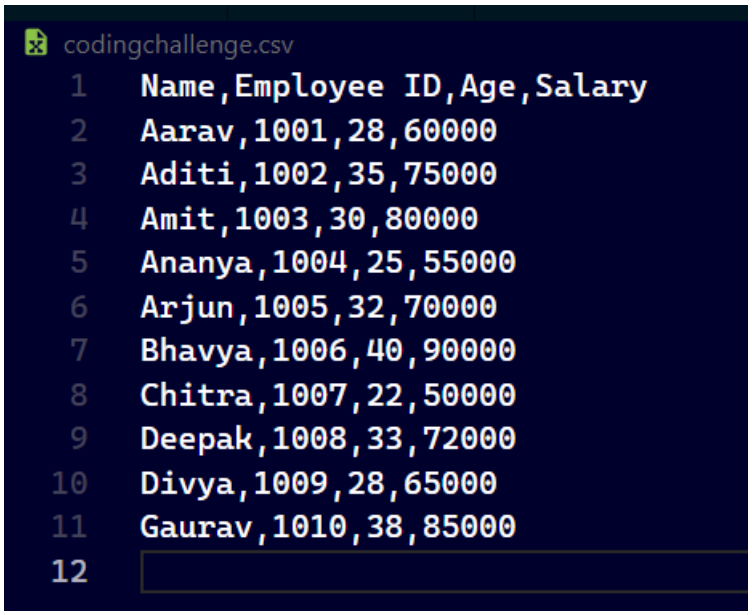
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

TERMINAL

```
PS C:\Users\dell\OneDrive\Documents\Desktop\python coding challenge> python -u "c:\User
rame.py"
Pandas Series:
 0    P
1    R
2    A
3    T
4    I
5    K
dtype: object

**********

     Name  Age  Salary
0  Pratik   21   50000
1   Vikas   23  100000
2   Rushi   22  120000
PS C:\Users\dell\OneDrive\Documents\Desktop\python coding challenge>
```

- Reading CSV Data using Pandas
    - CSV data is Comma Separated Values
    - We can read the data which is stored in csv file using the pandas
    - Pandas library provide function ‘read_csv’ to read the CSV data
    - Here in following example I have created the csv file names as codingchallenge.csv
    - Using read_csv I extracted the data from codingchallenge.csv

- codingchallenge.csv:



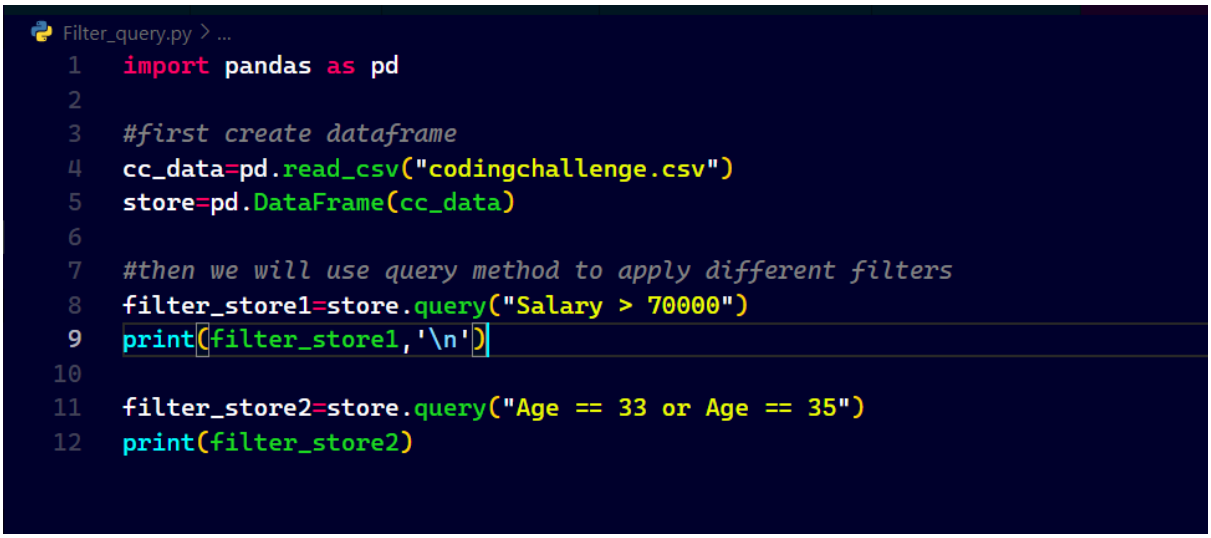
Read_CSV.py > ...

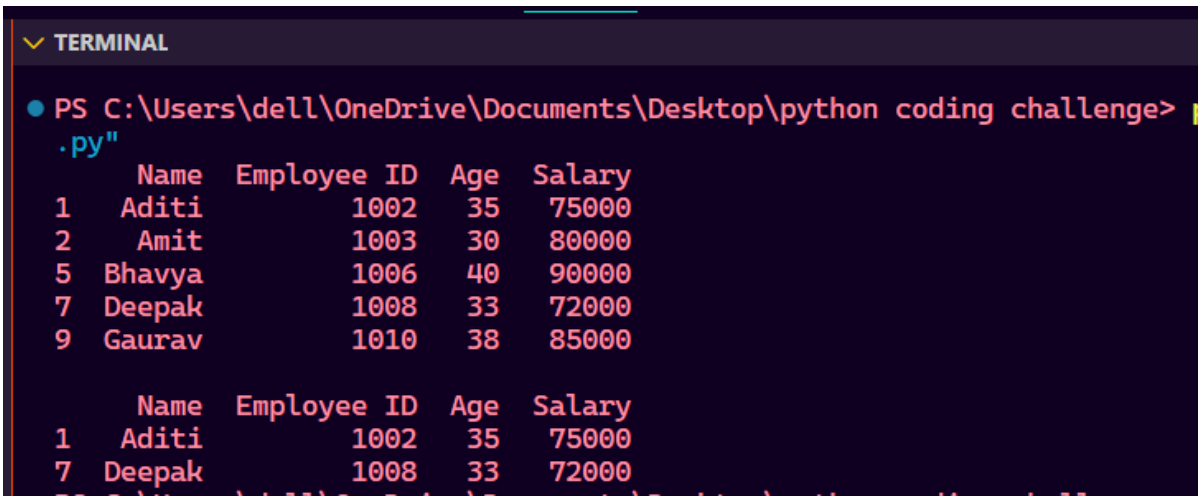
```python
import pandas as pd

#reading file using pandas
cc_data= pd.read_csv("codingchallenge.csv")
print(cc_data,'\n')


#extracting the columns
print(cc_data.columns,'\n')


#extracting specific column
print(cc_data.Name,'\n')

```

TERMINAL

```
PS C:\Users\dell\OneDrive\Documents\Desktop\python coding challenge> python -u "c:\U

      Name  Employee ID  Age  Salary
0    Aarav         1001   28   60000
1    Aditi         1002   35   75000
2     Amit         1003   30   80000
3   Ananya         1004   25   55000
4    Arjun         1005   32   70000
5   Bhavya         1006   40   90000
6   Chitra         1007   22   50000
7   Deepak         1008   33   72000
8    Divya         1009   28   65000
9   Gaurav         1010   38   85000

Index(['Name', 'Employee ID', 'Age', 'Salary'], dtype='object')

0     Aarav
1     Aditi
2      Amit
3    Ananya
4     Arjun
5    Bhavya
6    Chitra
7    Deepak
8     Divya
9    Gaurav
Name: Name, dtype: object

PS C:\Users\dell\OneDrive\Documents\Desktop\python coding challenge>
```

- Filter Data in Pandas Dataframe using query
    - In pandas we can filter the CSV data while extracting the data from CSV file
    - To filter a data we have to use a method name as query in pandas library
    - We just need to pass the condition in query function
    - We can apply these function on dataframe
    - In the following example I extracted the data from codingchallenge.csv file and stored it in dataframe
    - Then I applied the query function on dataframe to get the filtered data basis on different conditions





- Read Data from CSV Files to Pandas Dataframes
    - We can also read the csv data using pandas and can convert that data into the dataframes
    - For these first we need to extract the data using read_csv and then we will convert the data in python dataframes
    - Here I used the same csv file codingchallenge.csv