

Python

12/09/2023

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ubuntu@ip-172-31-34-95:~\$ python

Python 3.10.6 (main, Nov 14 2022, 16:10:14) [GCC 11.3.0] on linux

Type "help", "copyright", "credits" or "license" for more information.

```
>>> obj1 = [1,2,5,9,0,33]
```

```
>>> obj2 = 1,2,5,9,0,33
```

```
>>> type(obj1)
```

```
<class 'list'>
```

```
>>> type(obj2)
```

```
<class 'tuple'>
```

```
>>> obj1
```

```
[1, 2, 5, 9, 0, 33]
```

```
>>> obj2
```

```
(1, 2, 5, 9, 0, 33)
```

```
>>>
```

KeyboardInterrupt

```
>>>
```

\*\*\*\*\*

```
>>> team={'Mahendra':6, 'Virat'=1, 'Rohit':2}
```

File "<stdin>", line 1

```
team={'Mahendra':6, 'Virat'=1, 'Rohit':2}
```

^

```
>>> type(team)
```

```
<class 'dict'>
```

```
>>> team
```

```
{'Mahendra': 6, 'Virat': 1, 'Rohit': 2}
```

```
*****
```

```
>>> team
```

```
{'Mahendra': 6, 'Virat': 1, 'Rohit': 2, 'Rahul': 4}
```

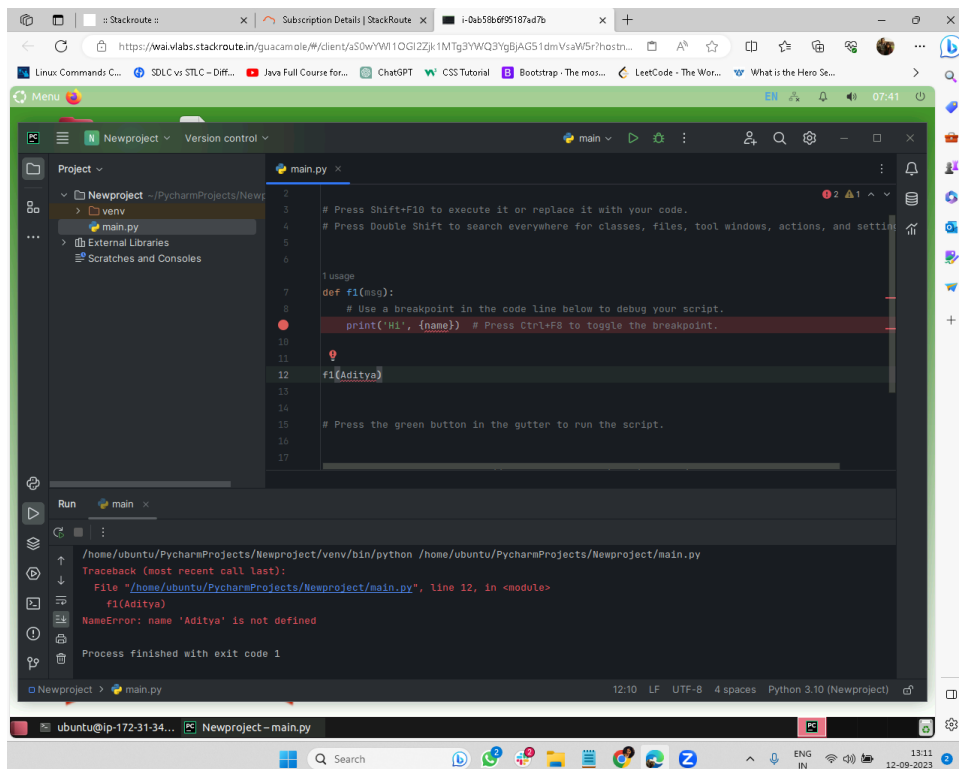
```
>>> team=dict(Virendra='3',SuryaKumar='9')
```

```
>>> team
```

```
{'Virendra': '3', 'SuryaKumar': '9'}
```

```
>>>
```

```
*****
```



## # Functions Declaration

```
def function_name(argument):
```

```
    print(argument)
```

```
def print_h1(name):
```

```
    print('hi', name)
```

```
# Invoke
```

```
if 1>0:
```

```
    print_h1('Pycharm')
```

```
else:
```

```
    function_name('IDE')
```

```
print_h1('Zing')
```

```
function_name('zen')
```

```
print_h1('Zarin')
```

```
def function_compare(argument):
```

```
    print(argument)
```

```
# Invoke
```

```
# #It will run the comparison operation and is Boolean value
```

```
if 2==2:
```

```
    function_compare('It\'s a match!')
```

```
else:
```

```
    function_compare('Not a match!')
```

```
obj1="NatWest"
```

```
obj2="RBS"
```

```
obj3="Natwest"
```

```
if obj1==obj2:
```

```
    print('it is not a match')
```

```
elif obj1==obj3:
```

```
    print('It is a match')
```

```
else:
```

```
    print('Not a match')
```

```
print(obj1, "it's a match", obj3)
```

```
def cmp(n1,n2):
```

```
    if n1 > n2:
```

```
        print(n1, 'is greater than',n2)
```

```
# User defined method to find square
```

```
# Define the first dictionary
```

```
dict1 = {'a': 1, 'b': 2, 'c': 3}
```

```
# Define the second dictionary
```

```
dict2 = {'a': 1, 'b': 2, 'c': 3}
```

```
# Compare the dictionaries
```

```
if dict1 == dict2:
```

```
    print("Dictionaries have the same content which is", dict1)
```

```
else:
```

```
print("Not similar")
```

```
scores=[90,95,80,76,91,82]
```

```
for i in scores:
```

```
    if i > 80:
```

```
        print(i)
```

```
scores={'rohit':90, 'vishal':80, 'jack':76, 'jenny':82}
```

```
for i in scores:
```

```
    print(i, 'has scored', scores[i])
```

```
for student, score in scores.items():
```

```
    if score > 80:
```

```
        print(f'{student} has been awarded distinction class')
```

```
    elif score > 65 and score <= 80:
```

```
        print(f'{student} has been awarded first class')
```

```
    else:
```

```
        print(f'{student} has just passed')
```

```
*****
```

```
#task2
```

```
def compare_numbers(num1, num2, num3):
```

```
    if num1 == num2:
```

```
        print("num1 matches num2")
```

```
    if num1 == num3:
```

```
        print("num1 matches num3")
```

```
    if num2 == num3:
```

```
        print("num2 matches num3")num1 = 10
```

```
num2 = 20
```

```
num3 = 10
```

```
compare_numbers(num1, num2, num3)
```

\*\*\*\*\*

#Task4

import math

def square\_root(number):

if number >= 0:

result = math.sqrt(number)

print(f"Square root of {number} is: {result}")

else:

print("Cannot compute the square root of a negative number.")

square\_root(25)

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# task 5

scores = {"Asth": 95, "Bob": 70, "Charl": 50, "Anshul": 75}

# Define a function to print awards based on scores

def print\_awards(scores\_dict):

for name, score in scores\_dict.items():

if scores[i] > 80:

print(f"{name} has been awarded distinction class.")

elif score > 65:

print(f"{name} has been awarded first class.")

else:

print(f"{name} has just passed.")

\*\*\*\*\*

#Task3

n = 2

square = n \*\* 2

cube = n \*\* 3

print("\nSquare of the number :-->", square)

print("Cube of the number :-->", cube)

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#list =[5,8,3,33,9,11]

```
#def sq_n_c(n):
```

```
#    print(n*n)
```

```
#    print(n*n*n)
```

```
#for i in list:
```

```
#    (sq_n_c(i))
```

```
'''
```

```
random =[5,8,3,4,9,11]
```

```
def sq_fn(n):
```

```
    print(n*n)
```

```
squares=list(map(sq_fn,random))
```

```
def c_fn(n):
```

```
    print(n*n*n)
```

```
cubes=list(map(c_fn,random))
```

```
# Create a list of tuples where each tuple contains (name, score)
```

```
students = [
```

```
    ("Alice", 90),
```

```
    ("Bob", 75),
```

```
    ("Charlie", 60),
```

```
    ("David", 85),
```

```
]
```

```

# Define functions for filtering

def distinction_class(score):

    return score > 80

def first_class(score):

    return 65 < score <= 80

def just_passed(score):

    return score <= 65

# Filter individuals based on the criteria

distinction_students = [name for name, score in students if distinction_class(score)]

first_class_students = [name for name, score in students if first_class(score)]

just_passed_students = [name for name, score in students if just_passed(score)]

# Print the results

for student in distinction_students:

    print(f"{student} has been awarded distinction class.")

for student in first_class_students:

    print(f"{student} has been awarded first class.")

for student in just_passed_students:

    print(f"{student} has just passed.")


sq_fn = lambda n : print(n**2, 'is the square of', n)

#invokation

sq_fn(39)


#declare

sq_fn = lambda n : n*n

```



```
sq_fn = lambda n : print(n*n)
```

```
sq_fn = lambda n : print(n*n, 'is the square of', n)
```

```
#invokation
```

```
sq_fn(11)
```

```
scores=[80,75,90,65,50,45,99,81]
```

```
ftr = lambda n : n>80
```

```
ftr = lambda n : print(n, 'has distinction') if (n>80) else { print(n, 'has top class') if (60< n  
<80)else None}
```

```
toppers=list(filter(ftr,scores))
```

```
toppers
```

```
val1 = int(input('Enter the first numerical: '))
```

```
val2 = int(input('Enter the second numerical: '))
```

```
sum = val1+val2
```

```
print(sum)
```

```
Name= str(input('Please enter your first name: '))
```

```
print('Hello', Name.capitalize(), '!')
```

```
val1 = int(input('Enter the first numerical: '))
```

```
val2 = int(input('Enter the second numerical: '))
```

```
sum = val1+val2
```

```
sub = val1-val2
```

```
mul = val1*val2
```

```
div = val1/val2
```

```
print(sum,sub,mul,div)
```

```
val1 = int(input('Enter the first numerical: '))
```

```
val2 = int(input('Enter the second numerical: '))
```

```
print("Select operation:")
```

```
print("1. Addition")
```

```
print("2. Subtraction")
```

```
print("3. Multiplication")
```

```
print("4. Division")
```

```
choice = input("Enter choice (1/2/3/4): ")
```

```
if choice == '1':
```

```
    result = val1 + val2
```

```
    operation = "addition"
```

```
elif choice == '2':
```

```
    result = val1 - val2

    operation = "subtraction"

elif choice == '3':

    result = val1 * val2

    operation = "multiplication"

elif choice == '4':

    if val2 != 0:

        result = val1 / val2

        operation = "division"

    else:

        result = "Division by zero is not allowed."

        operation = "division"

else:

    result = "Invalid choice"

    operation = "N/A"


print("Result of " + operation + ": " + str(result))


method =('Please specify an operation : ')


if method.lower == 'div':

    try:

        div=v1/v2

    except:

        print('Please provide a positive integer for division')
```

```
psy=open('/home/ubuntu/python/cloned.txt','a')
```

```
line1=psy.readline()
```

```
print(line1)
```

```
'''
```

```
pystore=open('/home/ubuntu/python/cloned.txt','a')
```

```
pystore.write('\n writing new stuff interactively!. \n')
```

```
pystore.close()
```

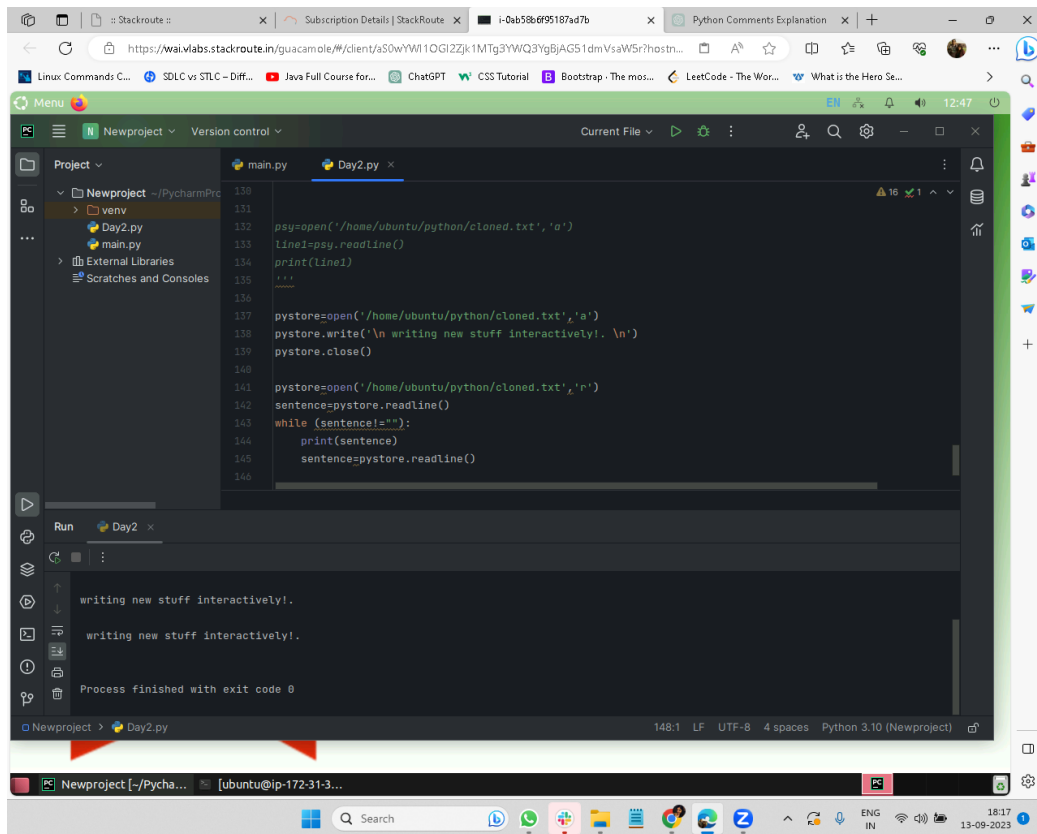
```
pystore=open('/home/ubuntu/python/cloned.txt','r')
```

```
sentence=pystore.readline()
```

```
while (sentence!=""):
```

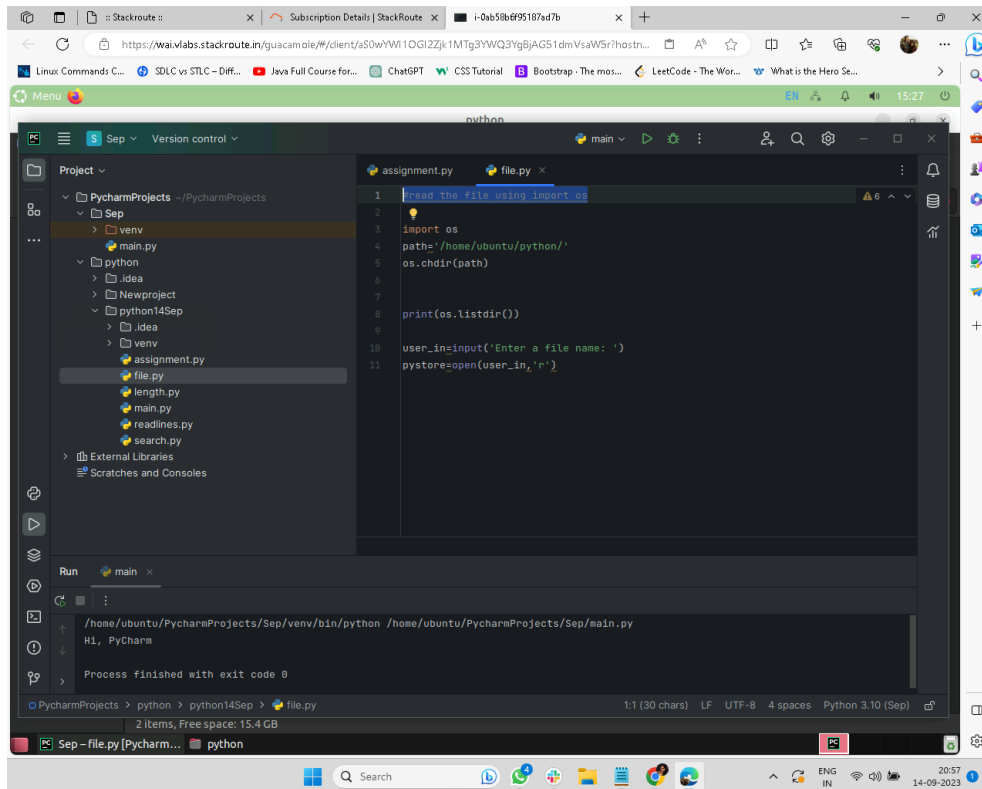
```
    print(sentence)
```

```
    sentence=pystore.readline()
```



**14/09/2023**

1. #read the file using import os:

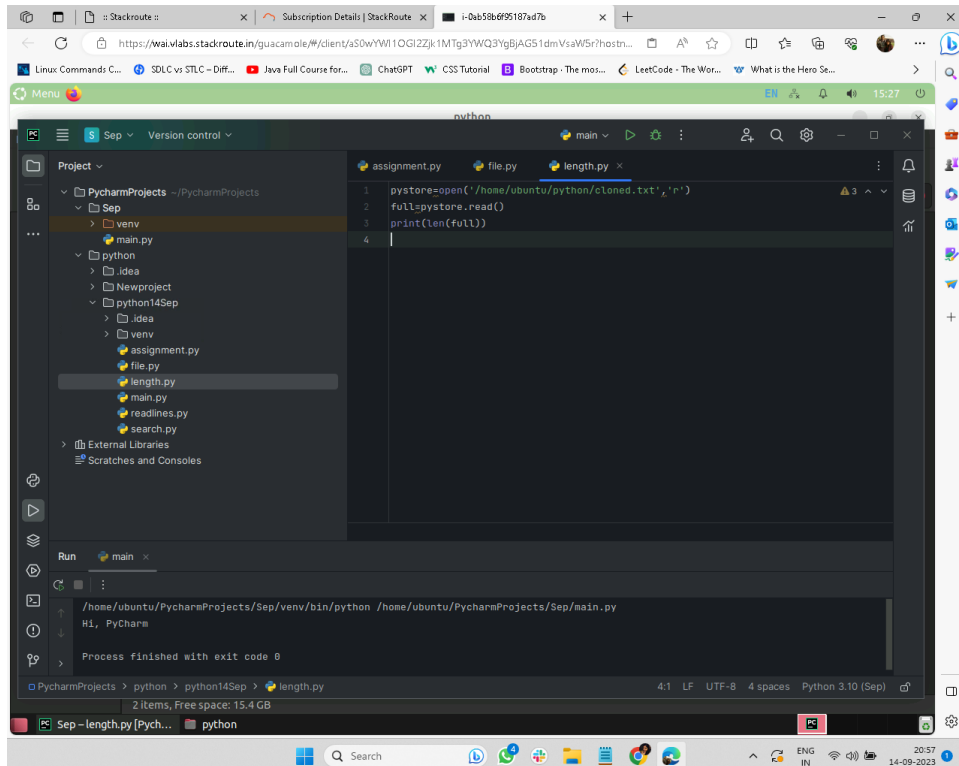


The screenshot shows the PyCharm IDE interface. The left sidebar displays the project structure with a tree view containing folders like 'venv', 'python', and 'python14Sep', and files like 'main.py', 'assignment.py', 'file.py', 'length.py', 'mainlines.py', and 'search.py'. The 'file.py' file is selected. The main editor window shows the code for 'file.py' with the following content:

```
1 #read the file using import os
2
3 import os
4 path = '/home/ubuntu/python/'
5 os.chdir(path)
6
7
8 print(os.listdir())
9
10 user_in = input('Enter a file name: ')
11 pystoreopen(user_in, 'r')
```

The bottom panel shows the Run tool window with the command: `/home/ubuntu/PycharmProjects/Sep/venv/bin/python /home/ubuntu/PycharmProjects/Sep/main.py`. The output is: `Hi, PyCharm`. The status bar at the bottom indicates the file is 1:1 (30 chars), LF, UTF-8, 4 spaces, Python 3.10 (Sep).

2. Length

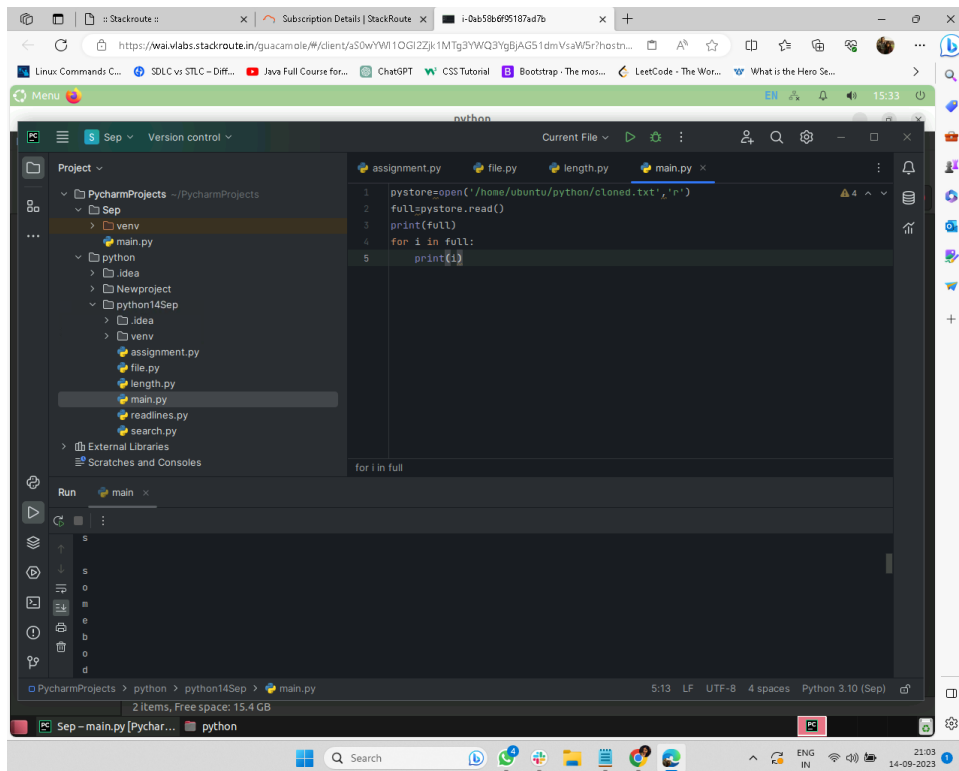


The screenshot shows the PyCharm IDE interface. The left sidebar displays the project structure with a tree view containing folders like 'venv', 'python', and 'python14Sep', and files like 'main.py', 'assignment.py', 'file.py', 'length.py', 'mainlines.py', and 'search.py'. The 'length.py' file is selected. The main editor window shows the code for 'length.py' with the following content:

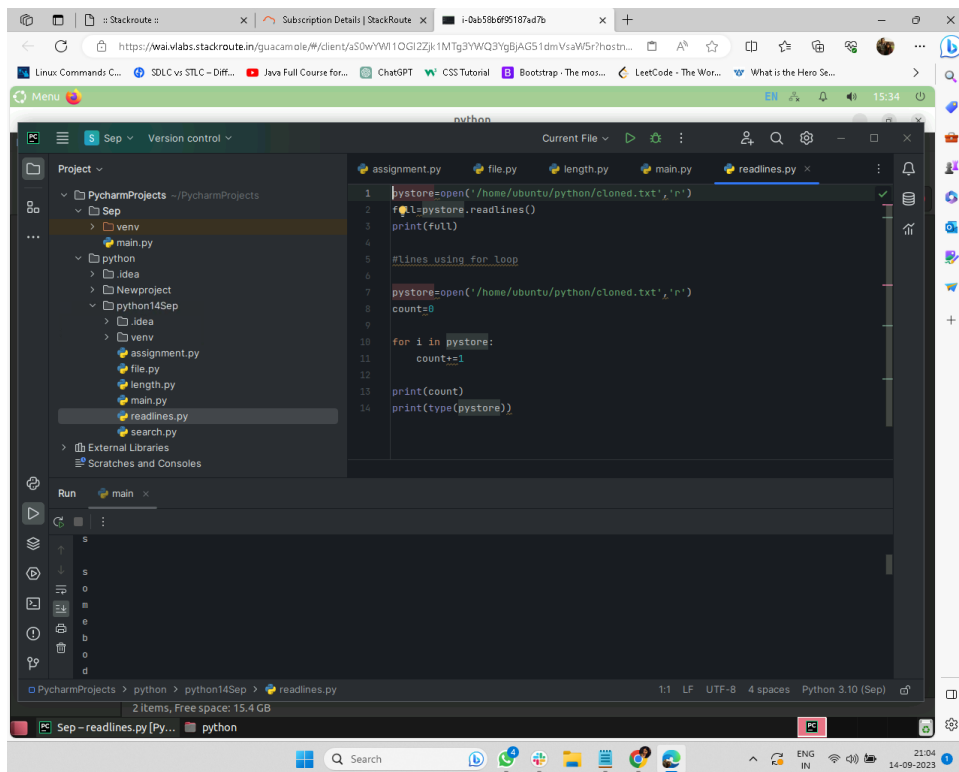
```
1 pystoreopen('/home/ubuntu/python/cloned.txt', 'r')
2 fullpystore.read()
3 print(len(full))
4
```

The bottom panel shows the Run tool window with the command: `/home/ubuntu/PycharmProjects/Sep/venv/bin/python /home/ubuntu/PycharmProjects/Sep/main.py`. The output is: `Hi, PyCharm`. The status bar at the bottom indicates the file is 4:1, LF, UTF-8, 4 spaces, Python 3.10 (Sep).

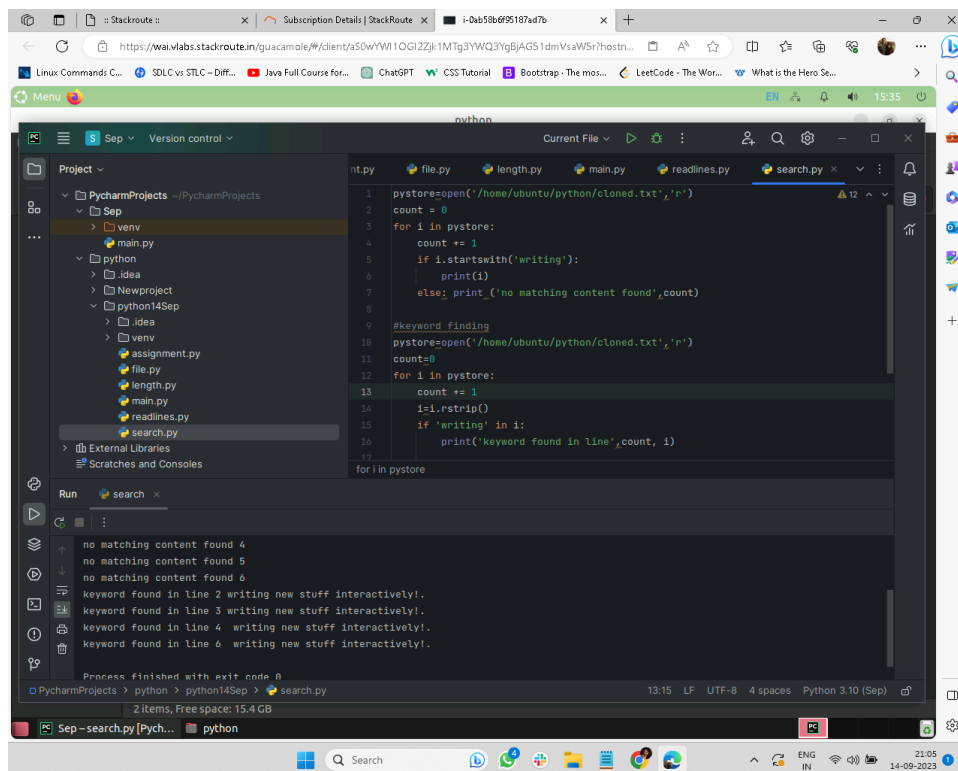
### 3. Read:



### 4. readlines:



## 5. keyword finding:



The screenshot shows the PyCharm IDE interface. The left sidebar displays the Project view with a tree structure of files and folders. The main editor window shows a Python script named `search.py` with the following code:

```
1 pystore=open('/home/ubuntu/python/cloned.txt','r')
2 count = 0
3 for i in pystore:
4     count += 1
5     if i.startswith('writing'):
6         print(i)
7     else: print('no matching content found',count)
8
9 #keyword_finding
10 pystore=open('/home/ubuntu/python/cloned.txt','r')
11 count=0
12 for i in pystore:
13     count += 1
14     i=i.rstrip()
15     if 'writing' in i:
16         print('keyword found in line',count, i)
17
18 for i in pystore
```

The Run console at the bottom shows the output of the script:

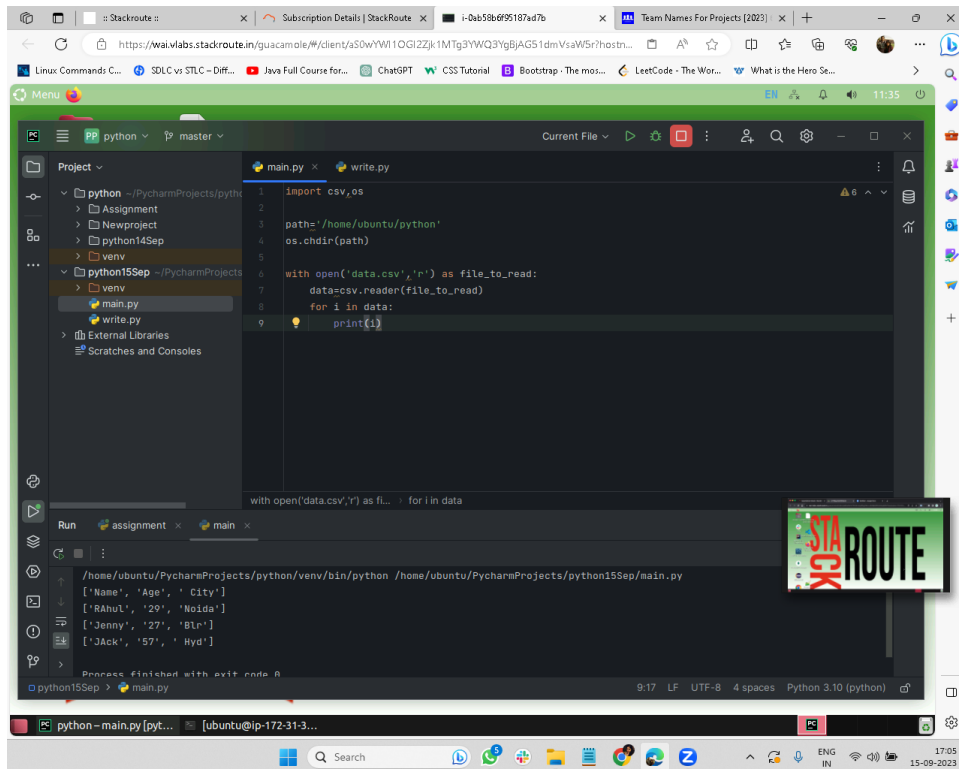
```
no matching content found 4
no matching content found 5
no matching content found 6
keyword found in line 2 writing new stuff interactively!.
keyword found in line 3 writing new stuff interactively!.
keyword found in line 4 writing new stuff interactively!.
keyword found in line 6 writing new stuff interactively!.
```

The status bar at the bottom indicates the file encoding is UTF-8, the line length is 13:15, and the Python version is 3.10 (Sep).



**15/09/2023:**

## 1. Read file



The screenshot shows a PyCharm IDE with a project named 'python15Sep'. The file explorer on the left shows a directory structure with 'main.py' and 'write.py'. The 'main.py' file is open in the editor, showing the following code:

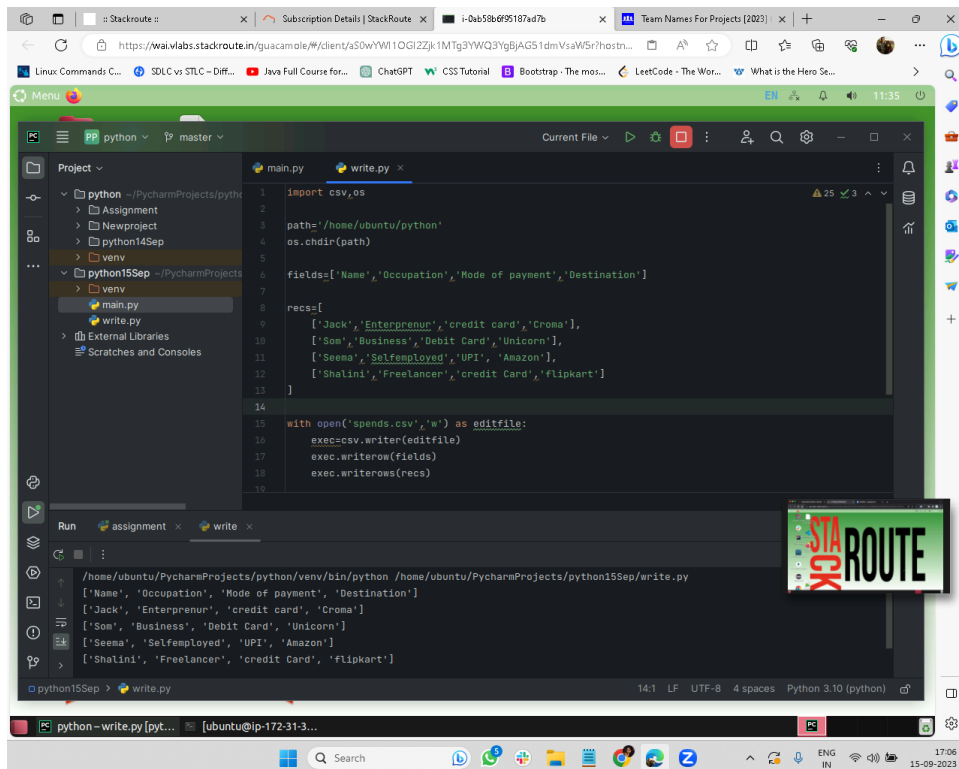
```
1 import csv,os
2
3 path='/home/ubuntu/python'
4 os.chdir(path)
5
6 with open('data.csv','r') as file_to_read:
7     data=csv.reader(file_to_read)
8     for i in data:
9         print(i)
```

The Run console at the bottom shows the output of the script:

```
/home/ubuntu/PycharmProjects/python15Sep/main.py
['Name', 'Age', 'City']
['RAhul', '29', 'Noida']
['Jenny', '29', 'Bln']
['Jack', '57', 'Hyd']
```

A watermark for 'STACK ROUTE' is visible in the bottom right corner of the IDE window.

## 2. Write file:



The screenshot shows the same PyCharm IDE with the 'write.py' file open in the editor. The code is as follows:

```
1 import csv,os
2
3 path='/home/ubuntu/python'
4 os.chdir(path)
5
6 fields=['Name','Occupation','Mode of payment','Destination']
7
8 recs=[
9     ['Jack','Entrepreneur','credit card','Croma'],
10    ['Som','Business','Debit Card','Unicorn'],
11    ['Seema','Selfemployed','UPI','Amazon'],
12    ['Shalini','Freelancer','credit Card','flipkart']
13 ]
14
15 with open('spends.csv','w') as editfile:
16     exec=csv.writer(editfile)
17     exec.writerow(fields)
18     exec.writerows(recs)
```

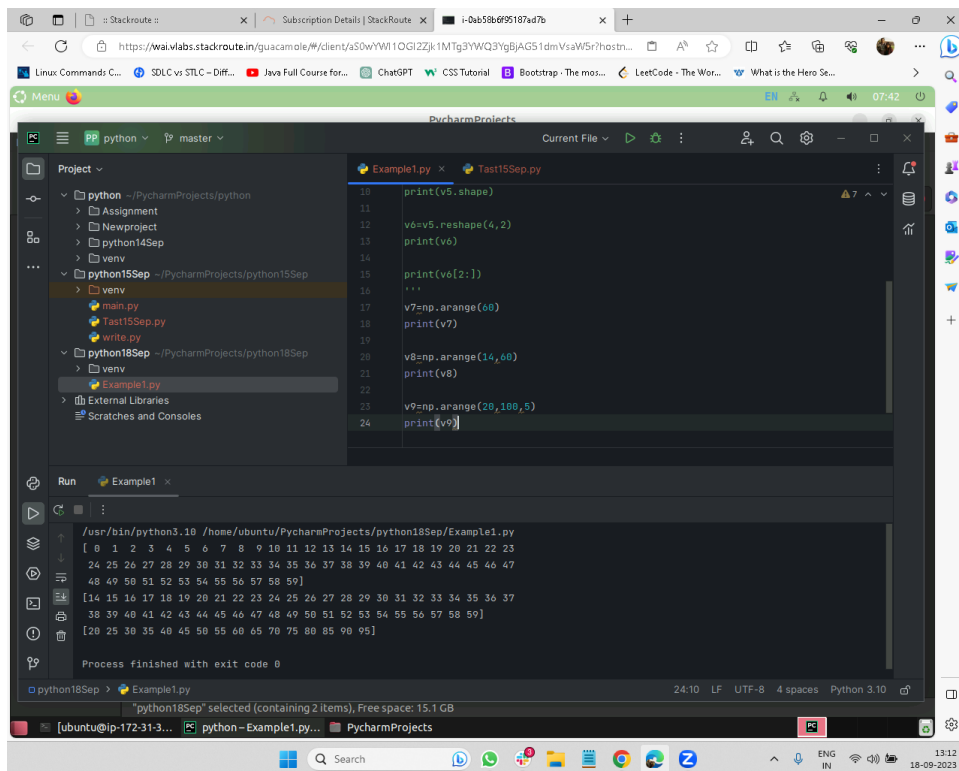
The Run console at the bottom shows the output of the script:

```
/home/ubuntu/PycharmProjects/python15Sep/write.py
['Name', 'Occupation', 'Mode of payment', 'Destination']
['Jack', 'Entrepreneur', 'credit card', 'Croma']
['Som', 'Business', 'Debit Card', 'Unicorn']
['Seema', 'Selfemployed', 'UPI', 'Amazon']
['Shalini', 'Freelancer', 'credit Card', 'flipkart']
```

A watermark for 'STACK ROUTE' is visible in the bottom right corner of the IDE window.

18/09/2023:

1.



The screenshot shows the PyCharm IDE interface. The left sidebar displays the project structure with folders for 'python', 'Assignment', 'NewProject', 'python14Sep', 'venv', 'python15Sep', and 'python18Sep'. The 'python18Sep' folder is selected, showing files like 'main.py', 'Tast15Sep.py', 'write.py', and 'Example1.py'. The 'Example1.py' file is open in the editor, showing a Python script that creates and prints arrays. The script is as follows:

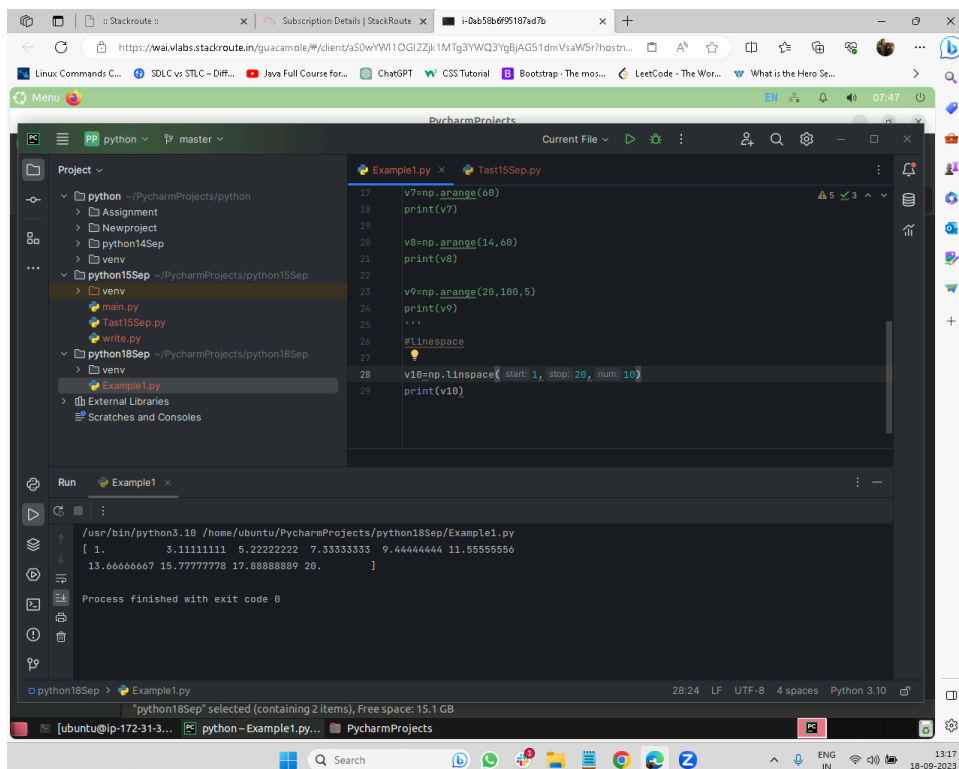
```
10 print(v5.shape)
11
12 v6=v5.reshape(4,2)
13 print(v6)
14
15 print(v6[2:])
16 """
17 v7=np.arange(60)
18 print(v7)
19
20 v8=np.arange(14,60)
21 print(v8)
22
23 v9=np.arange(20,100,5)
24 print(v9)
```

The 'Run' window at the bottom shows the output of the script, which consists of three rows of array data:

```
[ 0  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15 16 17 18 19 20 21 22 23
24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47
48 49 50 51 52 53 54 55 56 57 58 59]
[14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37
38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59]
[20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95]
```

The process finished with exit code 0.

2. Line space



The screenshot shows the PyCharm IDE interface. The left sidebar displays the project structure with folders for 'python', 'Assignment', 'NewProject', 'python14Sep', 'venv', 'python15Sep', and 'python18Sep'. The 'python18Sep' folder is selected, showing files like 'main.py', 'Tast15Sep.py', 'write.py', and 'Example1.py'. The 'Example1.py' file is open in the editor, showing a Python script that creates and prints arrays. The script is as follows:

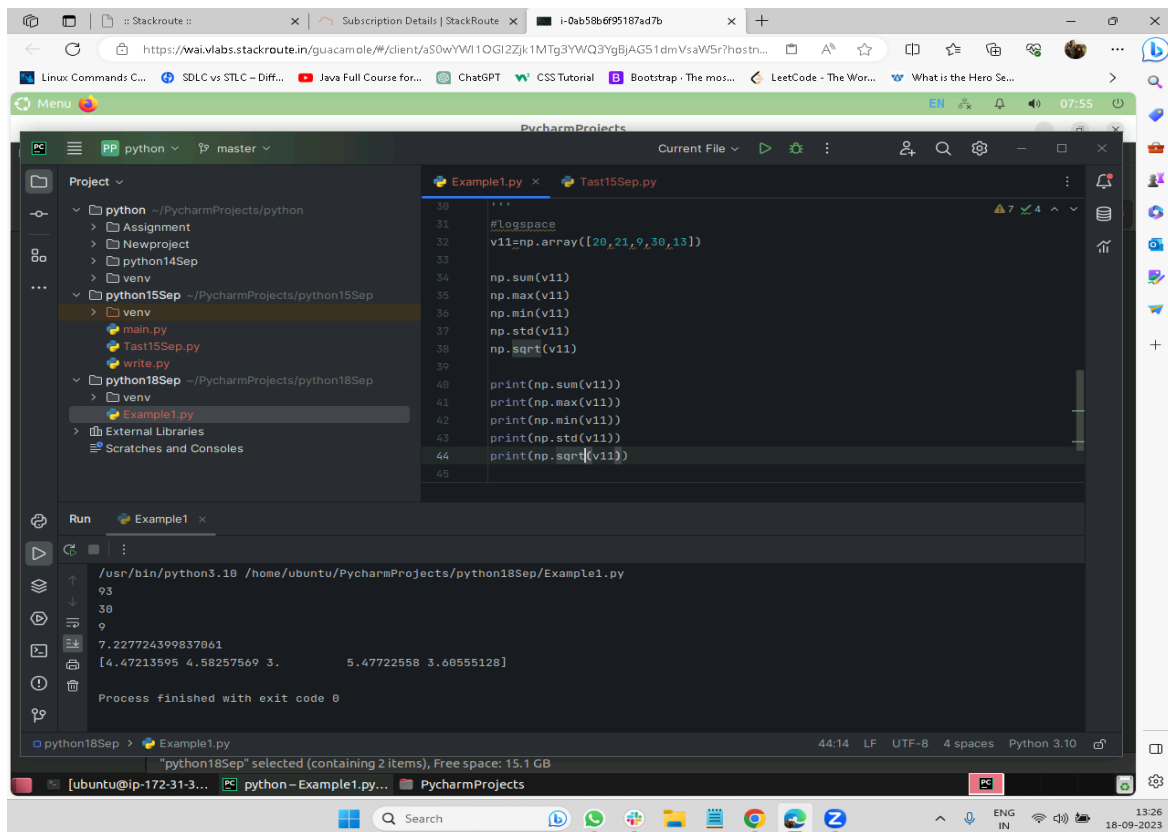
```
17 v7=np.arange(60)
18 print(v7)
19
20 v8=np.arange(14,60)
21 print(v8)
22
23 v9=np.arange(20,100,5)
24 print(v9)
25 """
26 #linespace
27
28 v10=np.linspace(start=1, stop=20, num=10)
29 print(v10)
```

The 'Run' window at the bottom shows the output of the script, which consists of a single row of array data:

```
[ 1.          3.11111111  5.22222222  7.33333333  9.44444444 11.55555556
13.66666667 15.77777778 17.88888889 20.]
```

The process finished with exit code 0.

### 3.Logspace

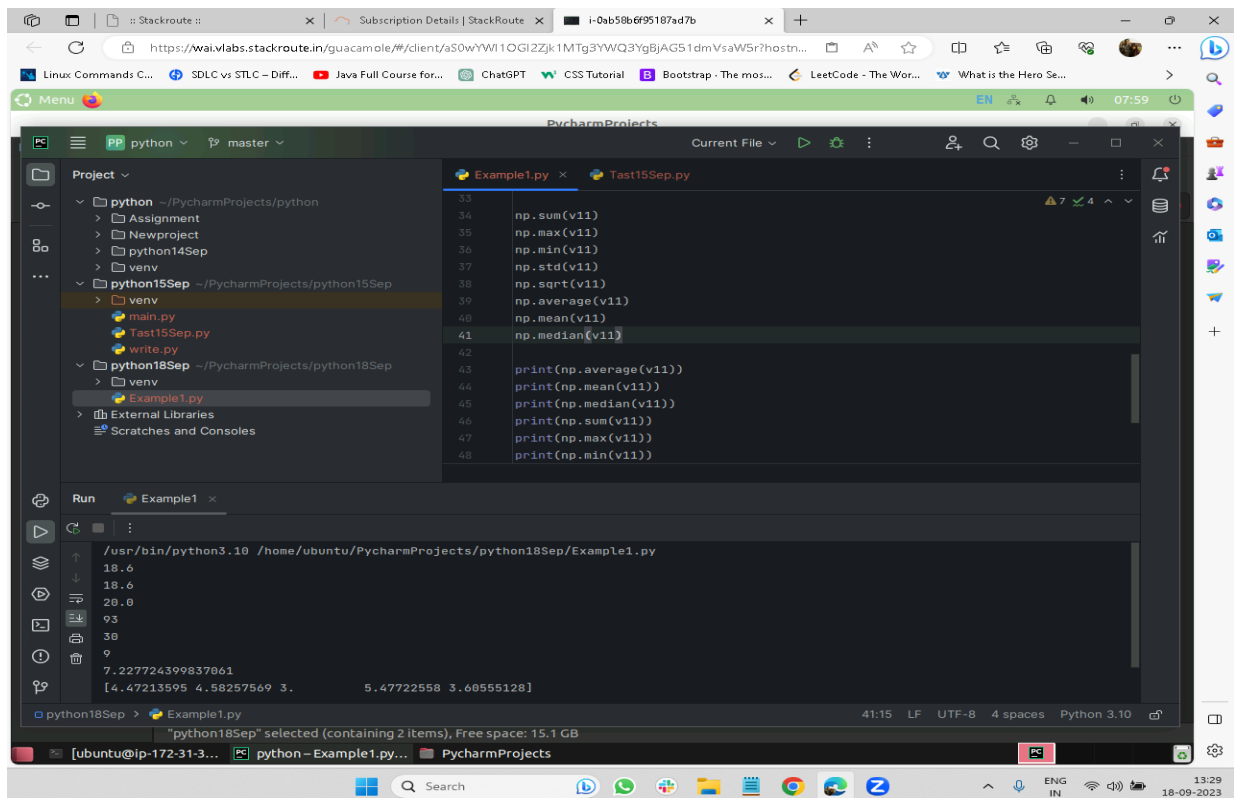


```
30 """
31 #logspace
32 v11=np.array([20,21,9,30,13])
33
34 np.sum(v11)
35 np.max(v11)
36 np.min(v11)
37 np.std(v11)
38 np.sqrt(v11)
39
40 print(np.sum(v11))
41 print(np.max(v11))
42 print(np.min(v11))
43 print(np.std(v11))
44 print(np.sqrt(v11))
45
```

Run Example1

```
/usr/bin/python3.10 /home/ubuntu/PycharmProjects/python18Sep/Example1.py
93
7.22724399837061
[4.47213595 4.58257569 3. 5.47722558 3.60555128]
Process finished with exit code 0
```

### 4.

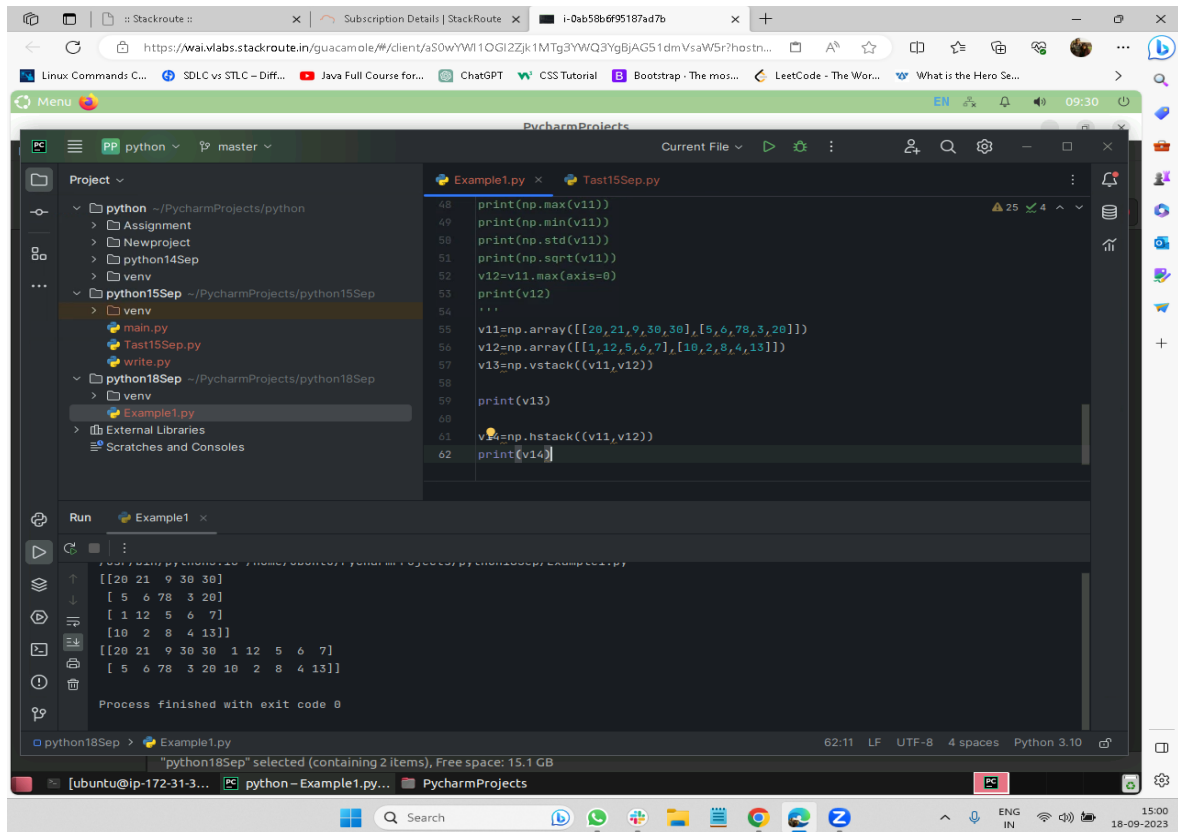


```
33
34 np.sum(v11)
35 np.max(v11)
36 np.min(v11)
37 np.std(v11)
38 np.sqrt(v11)
39 np.average(v11)
40 np.mean(v11)
41 np.median(v11)
42
43 print(np.average(v11))
44 print(np.mean(v11))
45 print(np.median(v11))
46 print(np.sum(v11))
47 print(np.max(v11))
48 print(np.min(v11))
```

Run Example1

```
/usr/bin/python3.10 /home/ubuntu/PycharmProjects/python18Sep/Example1.py
18.6
18.6
20.0
93
30
9
7.22724399837061
[4.47213595 4.58257569 3. 5.47722558 3.60555128]
Process finished with exit code 0
```

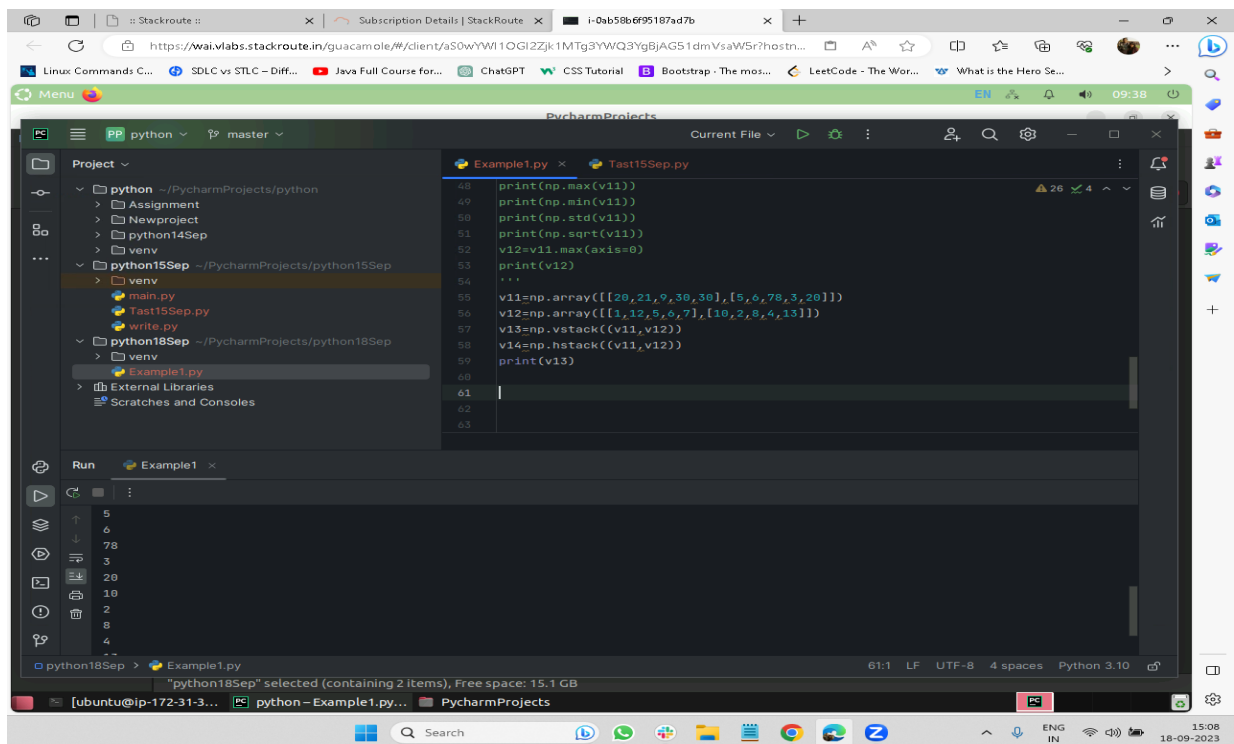
## 5. use of 3 array: VSTACK/HSTACK



The screenshot shows the PyCharm IDE interface. The left sidebar displays the project structure with folders for 'python', 'python14Sep', 'python15Sep', and 'python18Sep'. The 'python18Sep' folder is selected, showing files like 'Example1.py'. The main editor window displays the code for 'Example1.py', which uses NumPy's vstack and hstack functions to combine two arrays. The Run console at the bottom shows the output of the script, displaying the resulting arrays.

```
48 print(np.max(v11))
49 print(np.min(v11))
50 print(np.std(v11))
51 print(np.sqrt(v11))
52 v12=v11.max(axis=0)
53 print(v12)
54 ...
55 v11=np.array([[20,21,9,30,30],[5,6,78,3,20]])
56 v12=np.array([[1,12,5,6,7],[10,2,8,4,13]])
57 v13=np.vstack((v11,v12))
58
59 print(v13)
60
61 v14=np.hstack((v11,v12))
62 print(v14)
```

```
[[20 21  9 30 30]
 [ 5  6 78  3 20]
 [ 1 12  5  6  7]
 [10  2  8  4 13]]
[[20 21  9 30 30  1 12  5  6  7]
 [ 5  6 78  3 20 10  2  8  4 13]]
Process finished with exit code 0
```

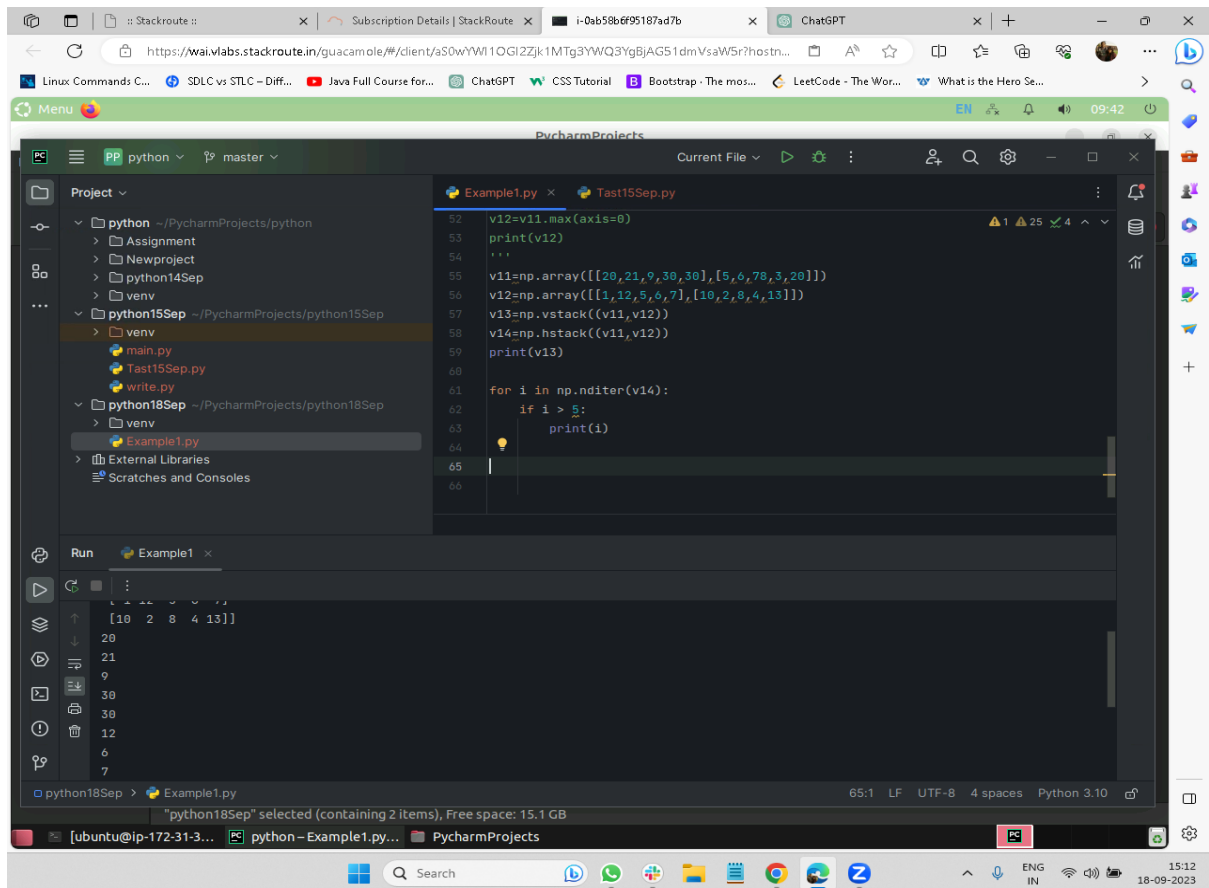


This screenshot is similar to the one above, showing the PyCharm IDE with the same project structure and code in 'Example1.py'. The Run console output is slightly different, showing the arrays in a different format.

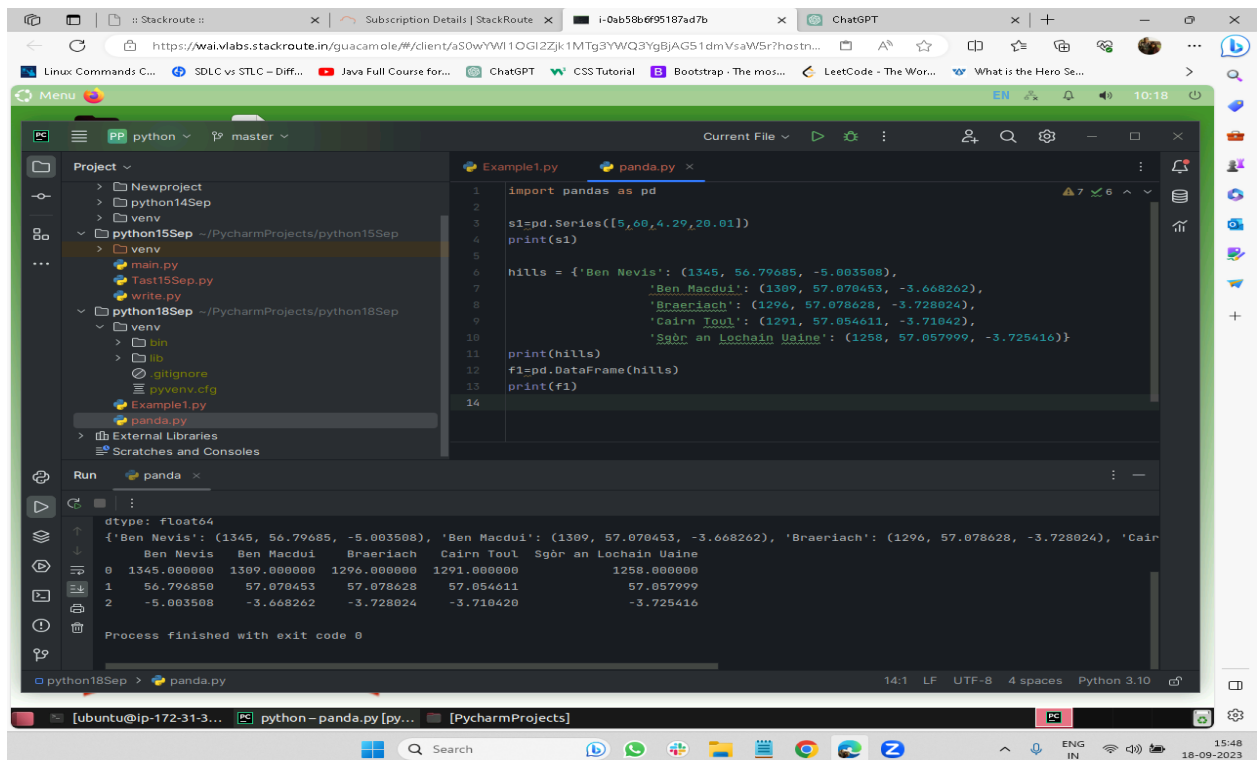
```
48 print(np.max(v11))
49 print(np.min(v11))
50 print(np.std(v11))
51 print(np.sqrt(v11))
52 v12=v11.max(axis=0)
53 print(v12)
54 ...
55 v11=np.array([[20,21,9,30,30],[5,6,78,3,20]])
56 v12=np.array([[1,12,5,6,7],[10,2,8,4,13]])
57 v13=np.vstack((v11,v12))
58 v14=np.hstack((v11,v12))
59 print(v13)
60
61
62
63
```

```
5
6
78
3
20
10
2
8
4
```

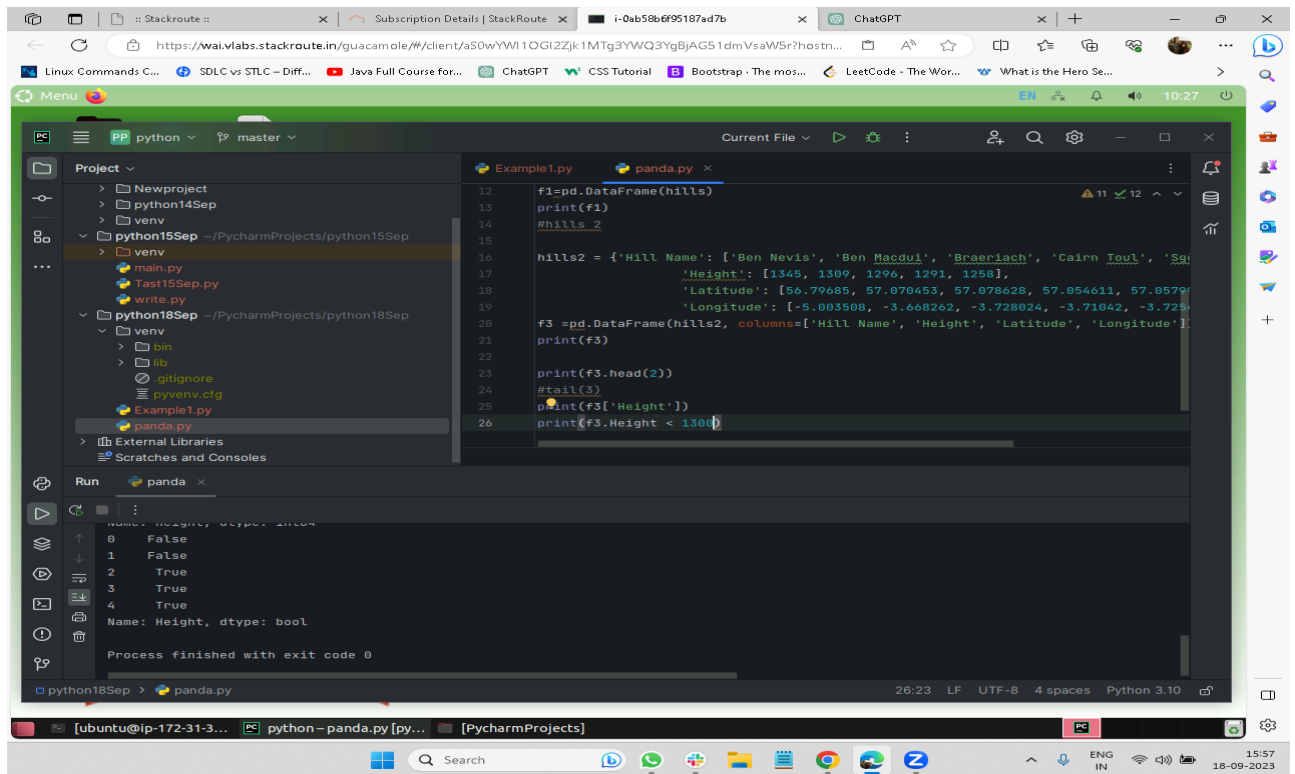
6.



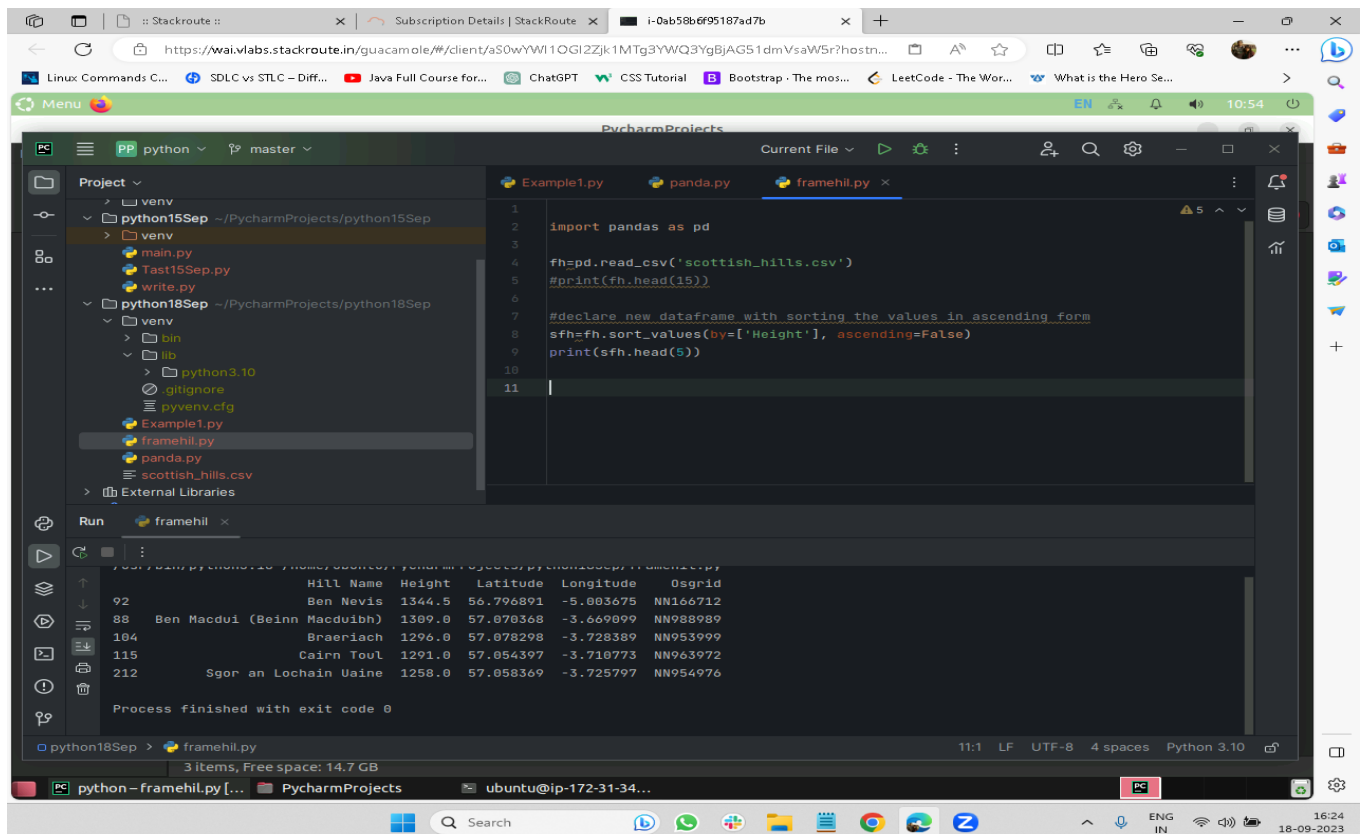
## 7: Pandas



## 8. Pandas



9.



10.

Stackroute :: Subscription Details | Stackroute x i-0a5b6f95187ad7b

https://wai.vlabs.stackroute.in/guacamole/#!/client/a50wYWI1OGI2Zjk1MTg3YWQ3YgBjAGS1dmVsaW5r?hostn...

Linux Commands C... SDLC vs STLC - Diff... Java Full Course for... ChatGPT CSS Tutorial Bootstrap - The mos... LeetCode - The Wor... What is the Hero Se...

Menu

PycharmProjects

Current File

Example1.py panda.py framehil.py x SciView Data Plots

Project

- python ~/PycharmProjects/python
  - Assignment
  - Newproject
  - python14Sep
  - venv
- python15Sep ~/PycharmProjects/python15Sep
  - venv
    - main.py
    - Tast15Sep.py
    - write.py
- python18Sep ~/PycharmProjects/python18Sep
  - venv
    - bin
    - lib
      - python3.10
    - .gitignore
    - pyvenv.cfg
    - Pyamnia1.nu

Run framehil x

```
9 #declare new dataframe with sorting ti
10 sfh=fh.sort_values(by=['Height'], ascending=False)
11 print(sfh.head(5))
12
13 x=fh.Height
14 y=fh.Latitude
15 plt.scatter(x,y)
16 plt.savefig('scatter_plt.png')
17
18 ss=linregress(x,y)
19 m= ss.slope
20 b= ss.intercept
21 plt.plot( fargs= x,m*x +b,color='red')
22 plt.show()
23
```

Process finished with exit code 0

python18Sep > framehil.py

	Hill Name	Height	Latitude	Longitude	Osgrid
92	Ben Nevis	1344.5	56.796891	-5.083675	NN166712
88	Ben Macdui (Beinn Macduibh)	1309.0	57.078368	-3.669899	NN988989
184	Braeriach	1296.0	57.078298	-3.728389	NN953999
115	Cairn Toul	1291.0	57.054397	-3.710773	NN963972
212	Sgor an Lochain Uaine	1258.0	57.058369	-3.725797	NN954976

3 items, Free space: 14.7 GB

python - framehil.py [...] PycharmProjects [ubuntu@ip-172-31-3...

17:26 18-09-2023

# Vizenotes: Jupyter

1.

The screenshot shows a Jupyter Notebook in PyCharm with the following code and output:

```
In 2: 1 import pandas as pd
      2 import matplotlib.pyplot as plt
      3 from scipy.stats import linregress
      Executed at 2023.09.18 12:17:54 in 24.37ms

In 5: 1 fh=pd.read_csv('scottish_hills.csv')
      2 print(fh.head(5))
      Executed at 2023.09.18 12:19:21 in 94ms
```

	Hill Name	Height	Latitude	Longitude	Osgrid
0	A' Bhuidheanach Bheag	936.0	56.870342	-4.199001	NN660775
1	A' Chailleach	997.0	57.693800	-5.128715	NH136714
2	A' Chailleach	929.2	57.109544	-4.179285	NH681041
3	A' Chraileag (A' Chralaig)	1120.0	57.184186	-5.154837	NH094147
4	A' Ghlas-bheinn	918.0	57.255090	-5.303687	NH008231

```
In 4: 1 sfh=fh.sort_values(by='Height', ascending=False)
      2 print(sfh.head(5))
      Executed at 2023.09.18 12:18:17 in 71ms
```

	Hill Name	Height	Latitude	Longitude	Osgrid
92	Ben Nevis	1344.5	56.796891	-5.003675	NN166712
88	Ben Macdui (Beinn Macduibh)	1309.0	57.070368	-3.669099	NN988989

2.

The screenshot shows a Jupyter Notebook in PyCharm with the following code and output:

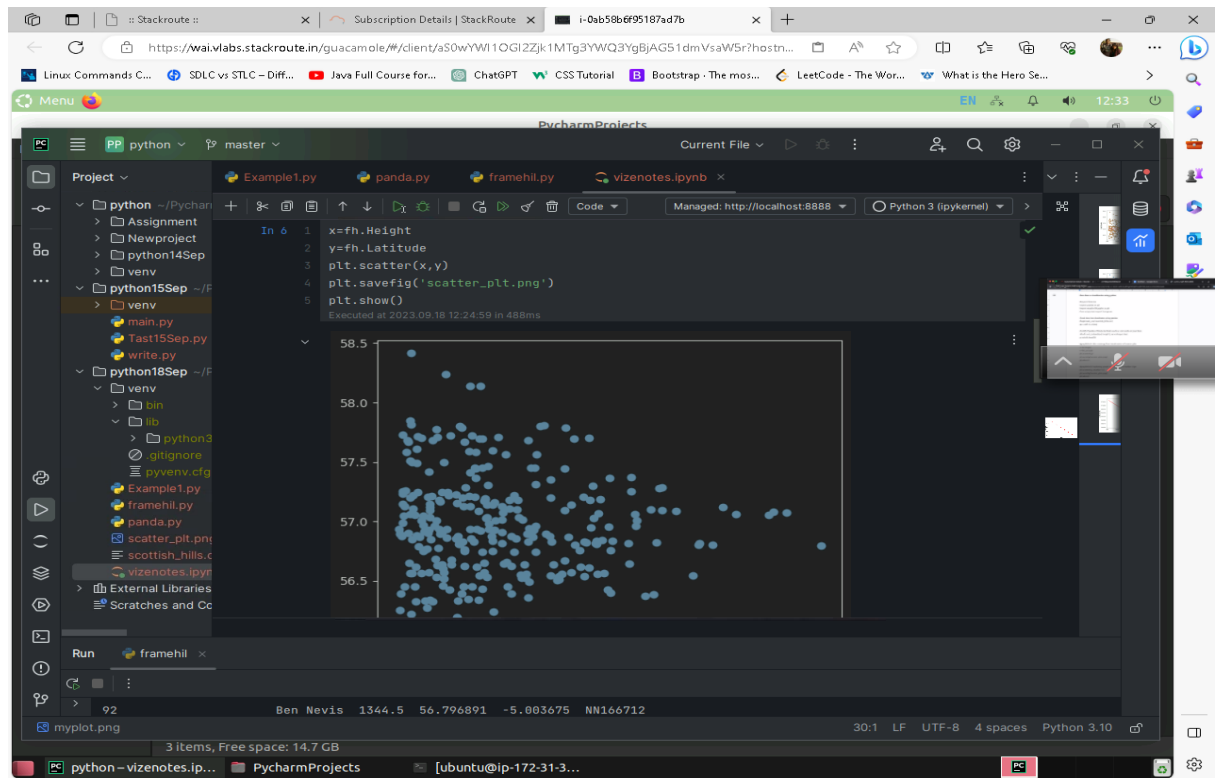
```
In 4: 1 sfh=fh.sort_values(by='Height', ascending=False)
      2 print(sfh.head(5))
      Executed at 2023.09.18 12:18:17 in 71ms
```

	Hill Name	Height	Latitude	Longitude	Osgrid
92	Ben Nevis	1344.5	56.796891	-5.003675	NN166712
88	Ben Macdui (Beinn Macduibh)	1309.0	57.070368	-3.669099	NN988989
184	Braeriach	1296.0	57.078298	-3.728389	NN953999
115	Cairn Toul	1291.0	57.054397	-3.710773	NN963972
212	Sgor an Lochain Uaine	1258.0	57.058369	-3.725797	NN954976

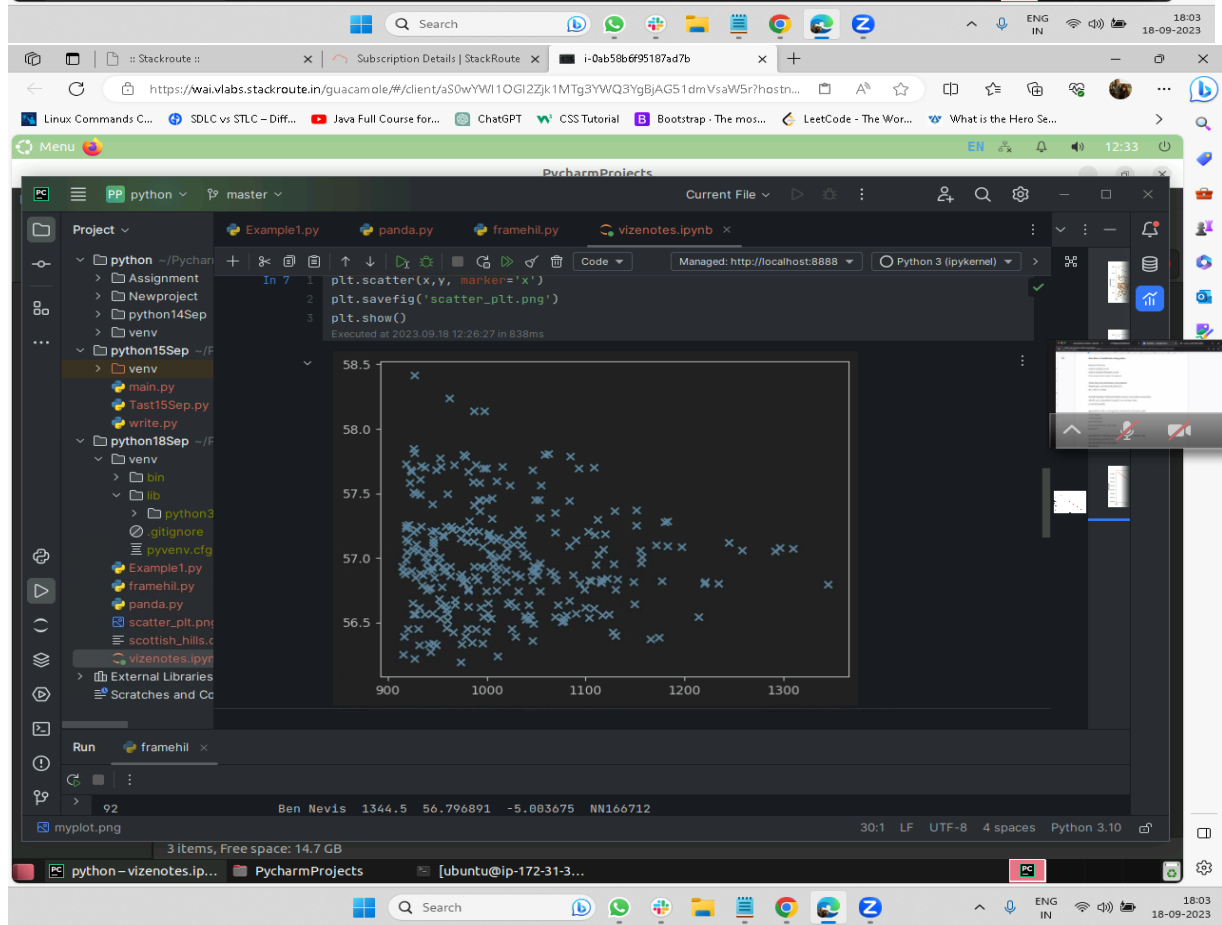
```
In 6: 1 x=fh.Height
      2 y=fh.Latitude
      3 plt.scatter(x,y)
      4 plt.savefig('scatter_plt.png')
      5 plt.show()
      Executed at 2023.09.18 12:24:59 in 488ms
```

The output shows a scatter plot of Height vs. Latitude. The y-axis (Latitude) ranges from 58.0 to 58.5. The x-axis (Height) ranges from 1250 to 1350. The plot shows a positive correlation between height and latitude.

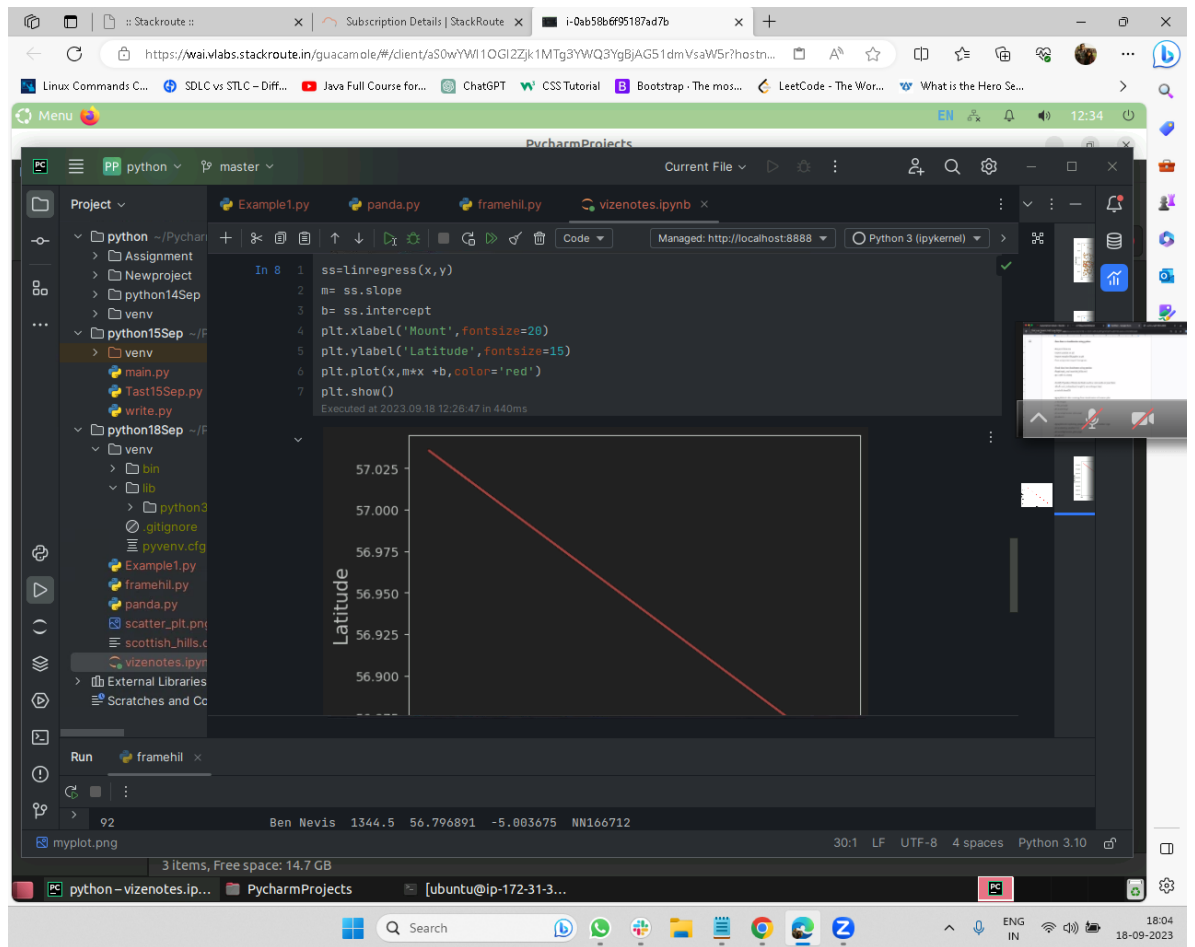




3.



4.



5.