Python

12/09/2023

****

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}

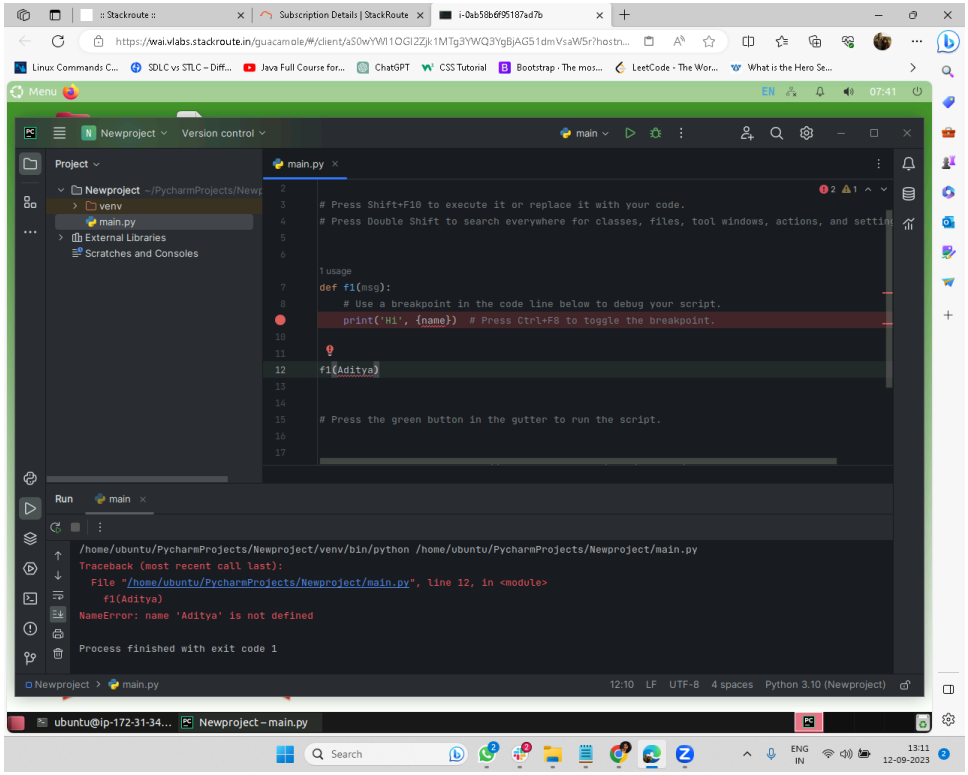
>>> team=dict(Virendra='3',SuryaKumar='9')

>>> 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 defind 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)

************************************************************

# task 5
scores = {"Astha": 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)

************************************

13/09/2023

*****************

*******************

#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),
]
```

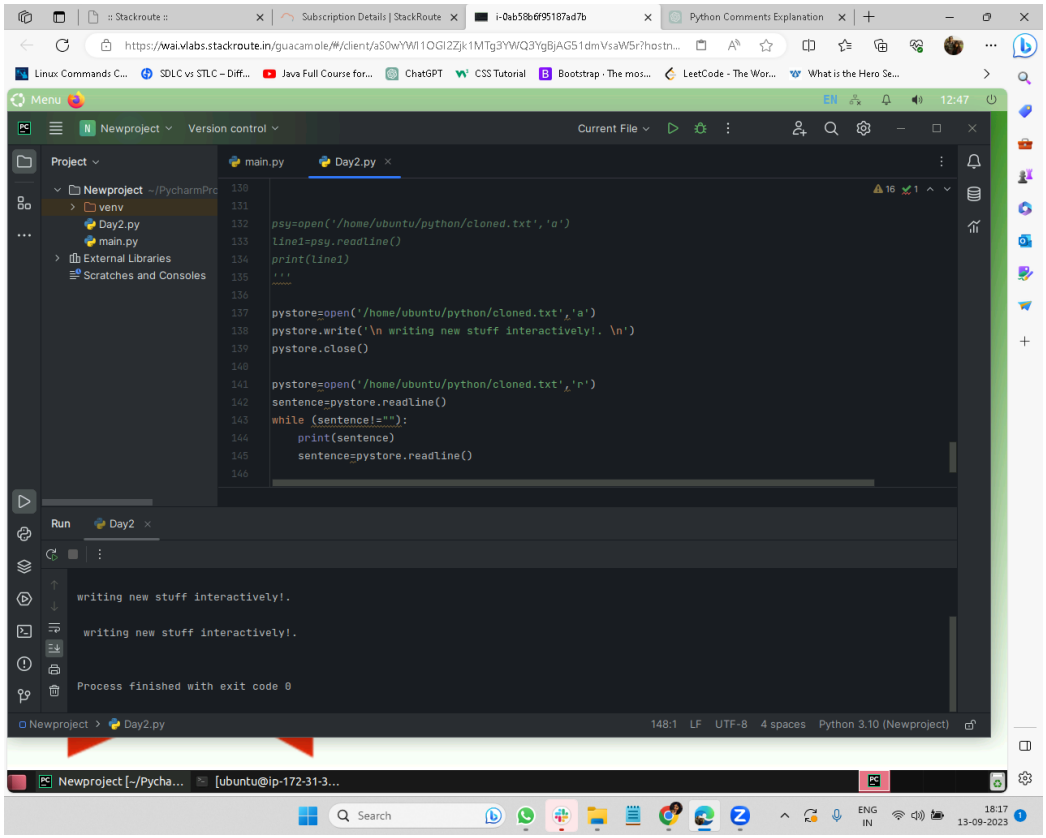
```
# Define functions for filtering
def distinction_class(score):
    return score > 80
def first_class(score):
    return 65 < score <= 80
def just_passed(score):
    return score <= 65
# Filter individuals based on the criteria
distinction_students = [name for name, score in students if distinction_class(score)]
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':
```

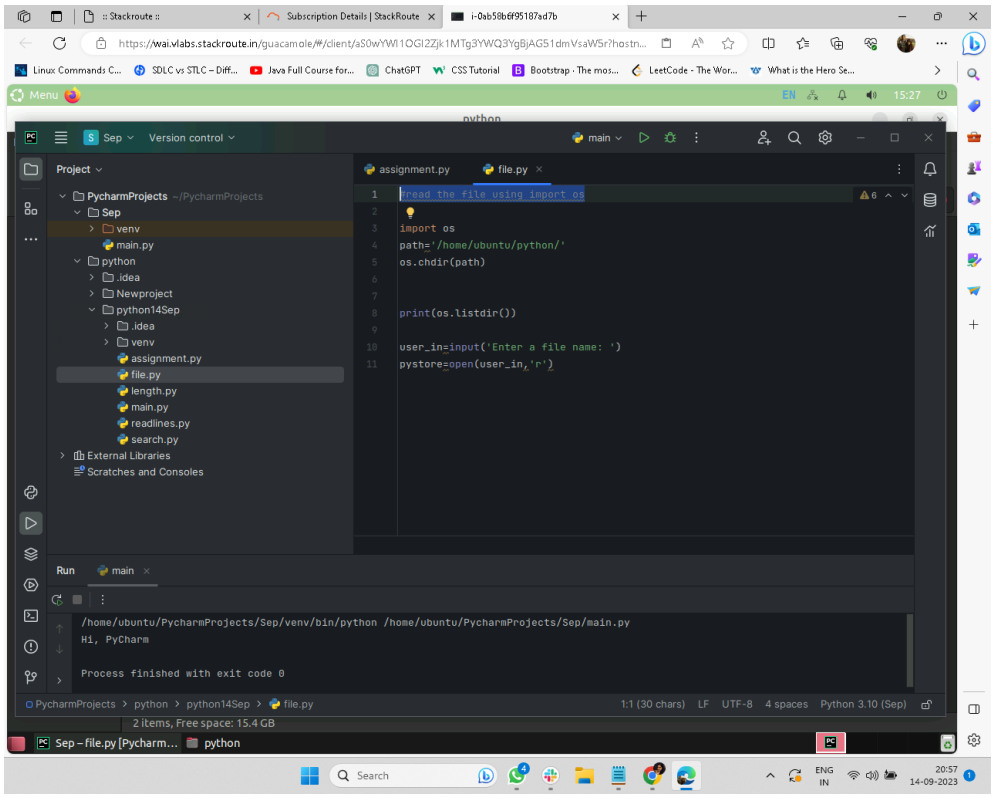
```
    result = val1 - val2
    operation = "subtraction"
elif choice == '3':
    result = val1 * val2
    operation = "multiplication"
elif choice == '4':
    if val2 != 0:
        result = val1 / val2
        operation = "division"
    else:
        result = "Division by zero is not allowed."
        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()
```

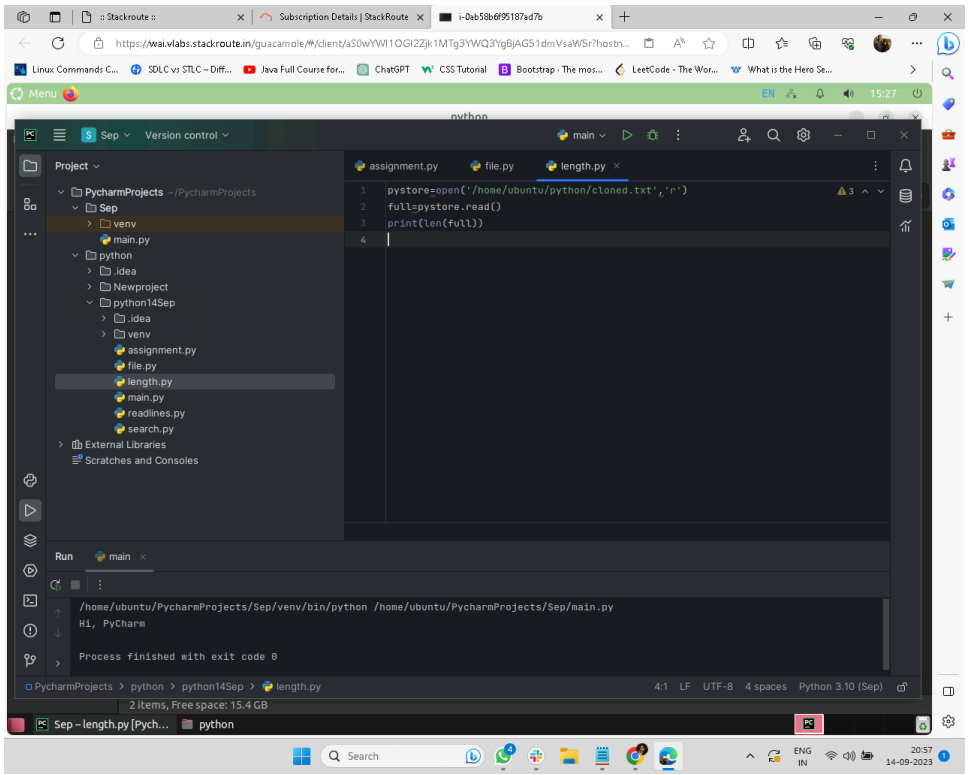

:: Stackroute ::
Subscription Details | StackRoute
i-0ab58b6f95187ad7b
Python Comments Explanation
https://wai.vlabs.stackroute.in/guacamole/#/client/aS0wYWI1OGI2Zjk1MTg3YW
Linux Commands C...
SDLC vs STLC – Diff...
Java Full Course for...
ChatGPT
CSS Tutorial
Bootstrap · The mos...
LeetCode - The Wor...
What is the Hero Se...
Menu
12:47
Newproject
Version control
Current File
Project
Newproject ~/PycharmProj
venv
Day2.py
main.py
External Libraries
Scratches and Consoles
main.py
Day2.py
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()
Run
Day2
writing new stuff interactively!.
writing new stuff interactively!.
Process finished with exit code 0
Newproject > Day2.py
148:1 LF UTF-8 4 spaces Python 3.10 (Newproject)
Newproject [~/Pycha...
[ubuntu@ip-172-31-3...
Search
ENG
IN
18:17
13-09-2023

14/09/2023

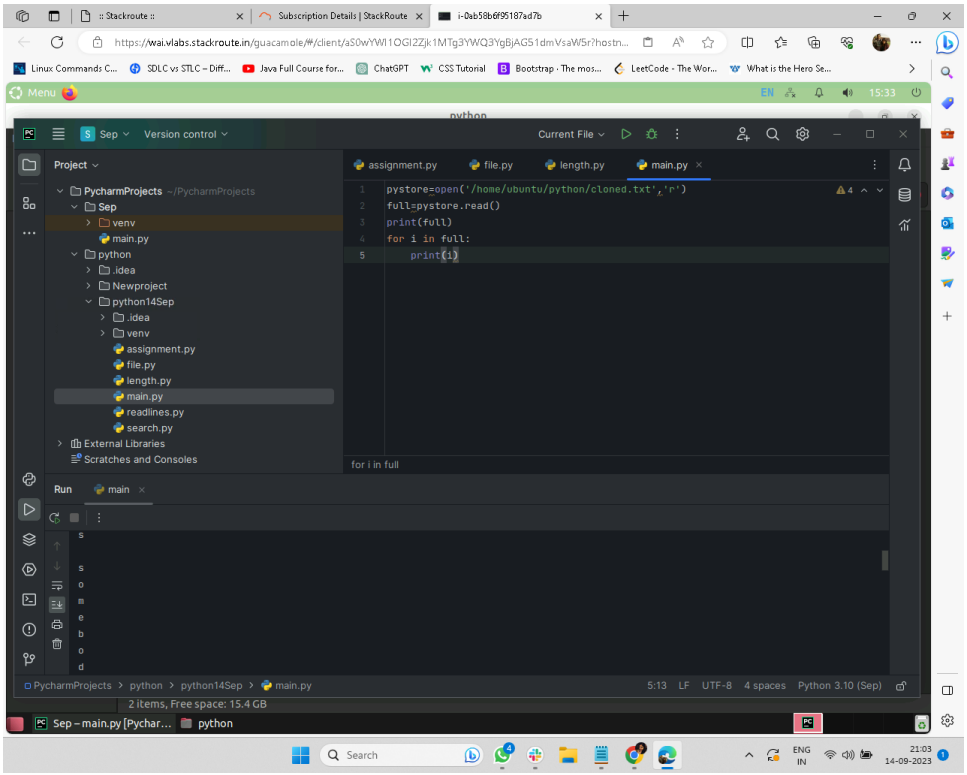
1. #read the file using import os:



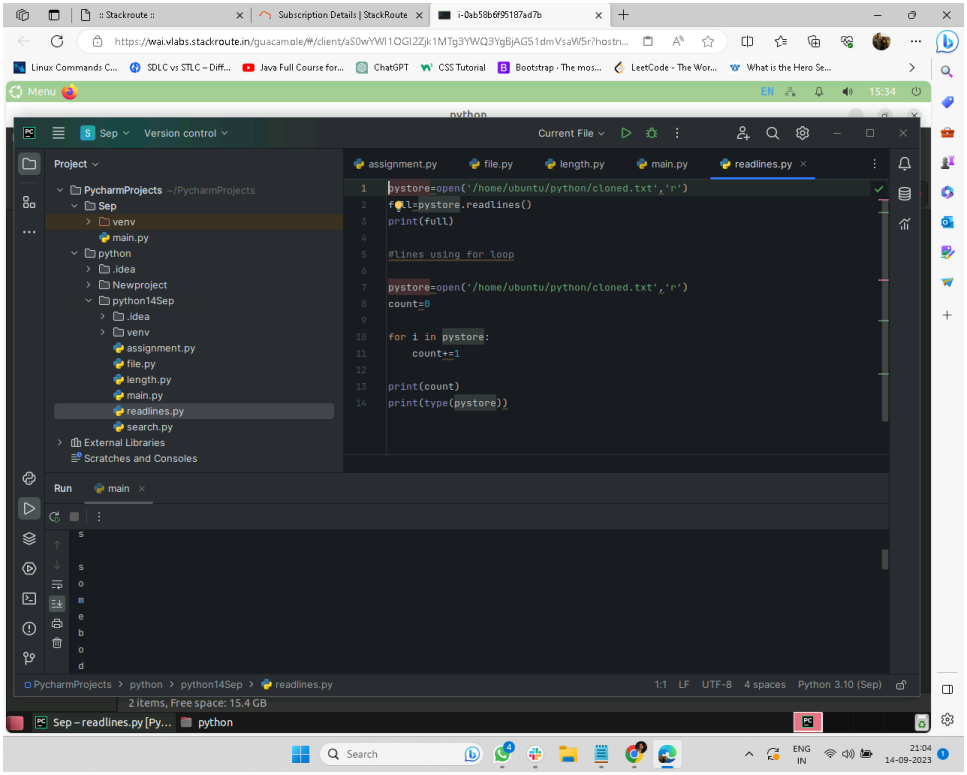
2. Length



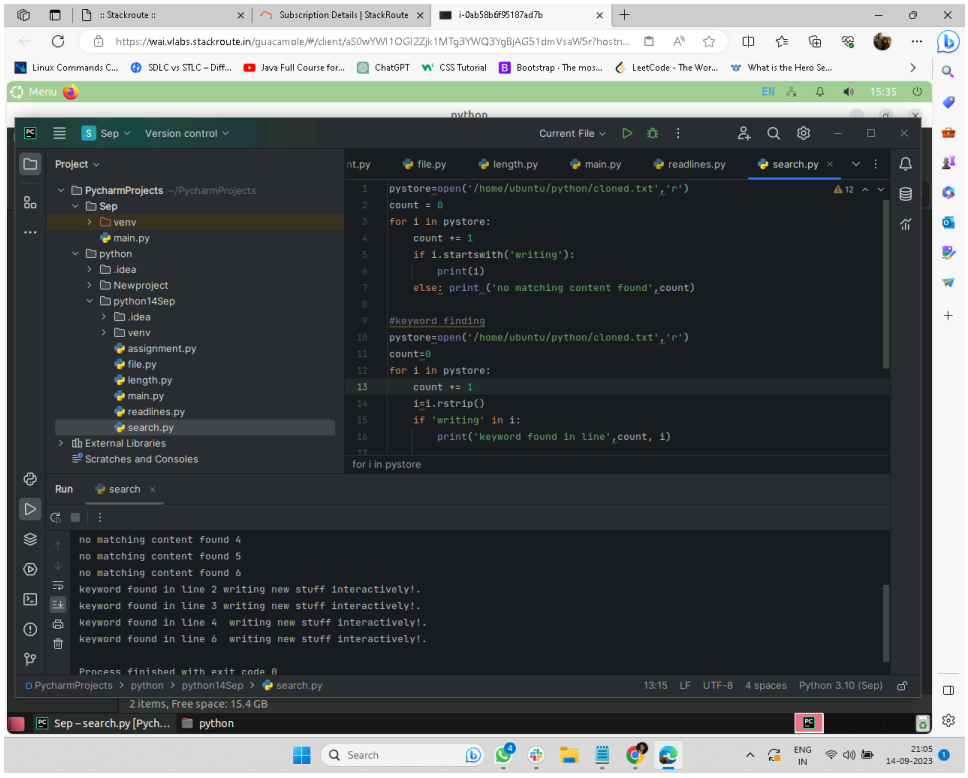
3. Read:



4. readlines:

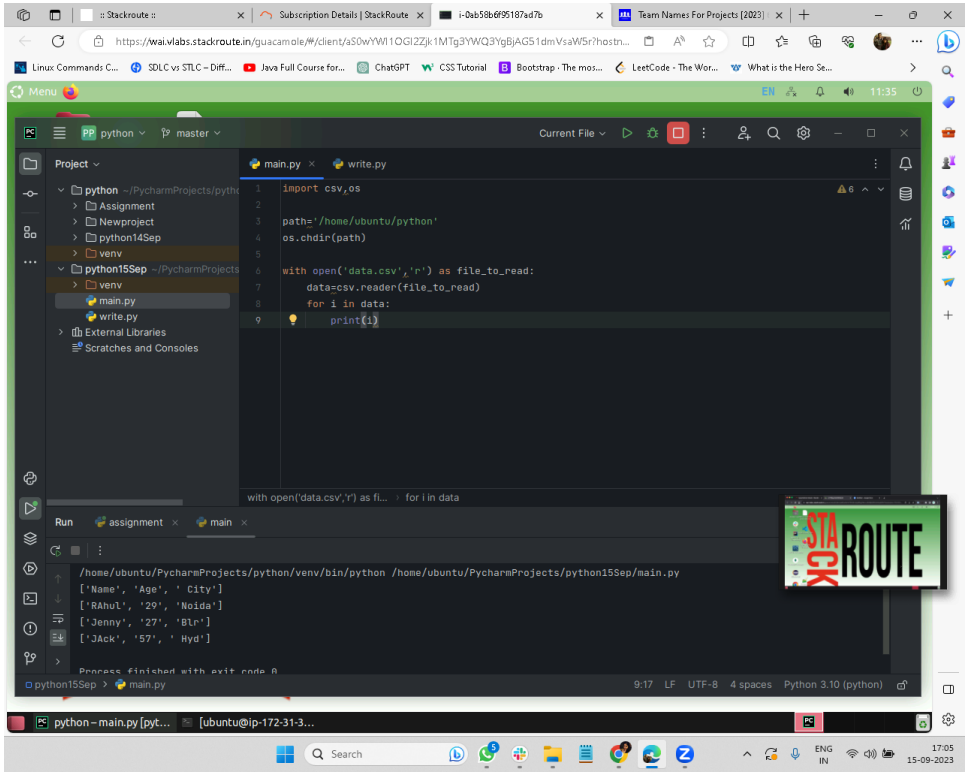


5. keyword finding:

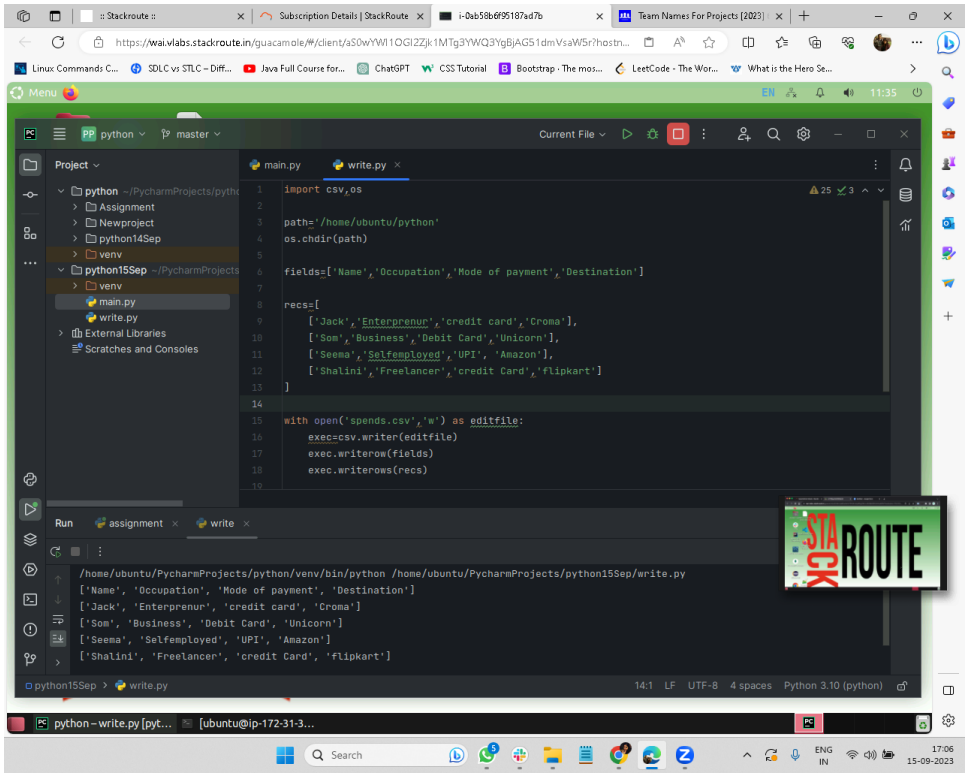


15/09/2023:

1. Read file

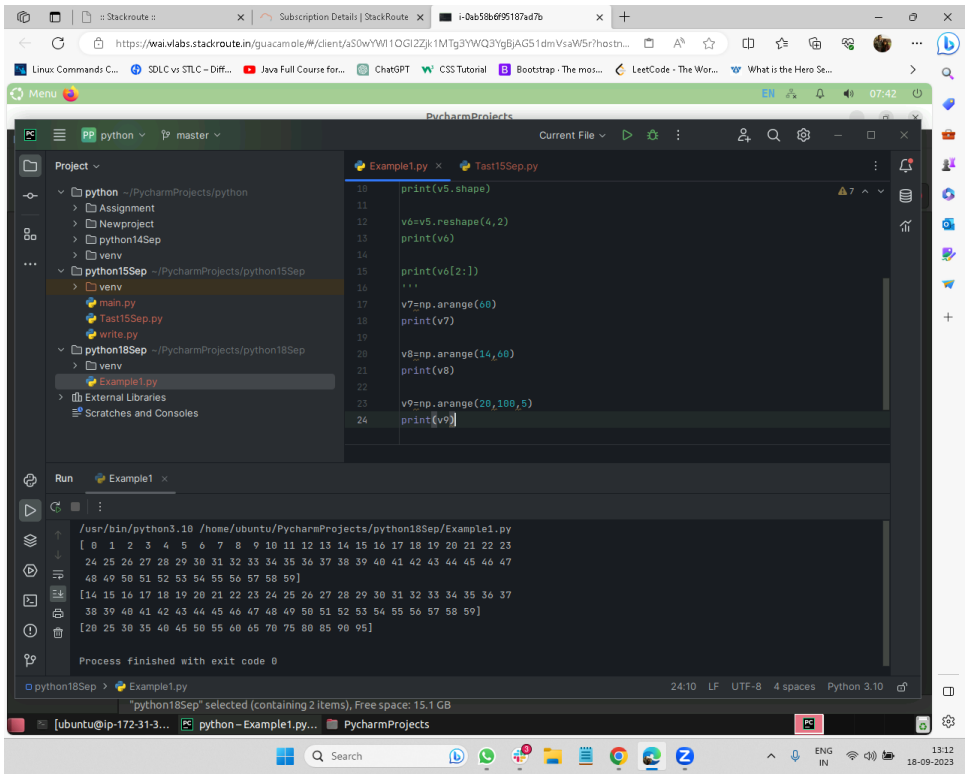


2. **Write file:**

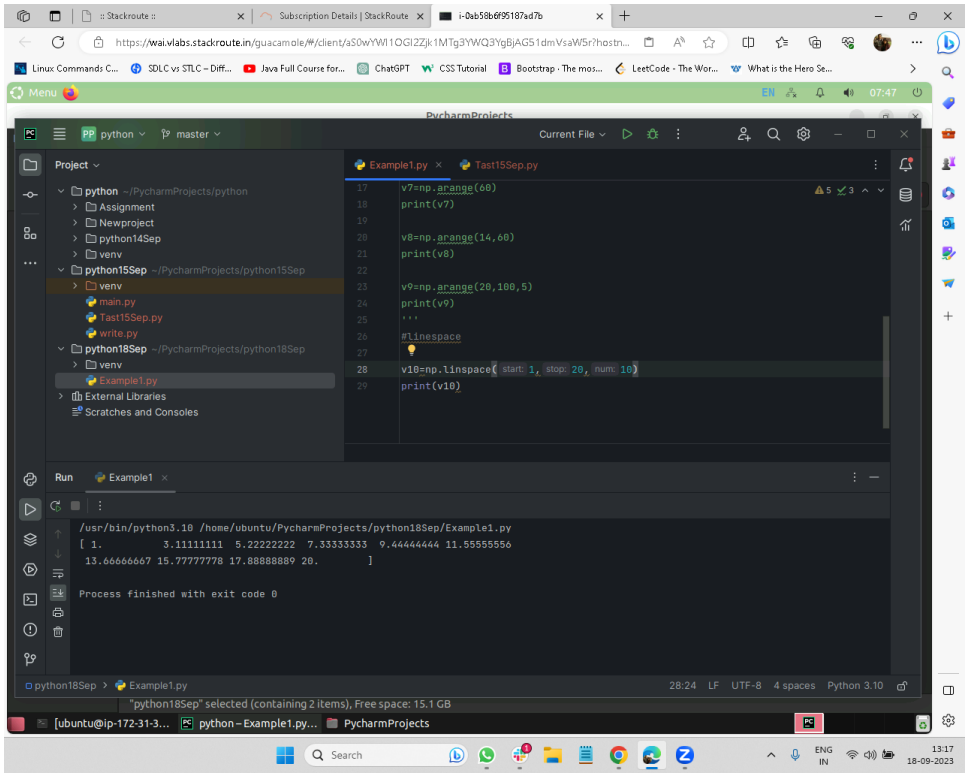


18/09/2023:

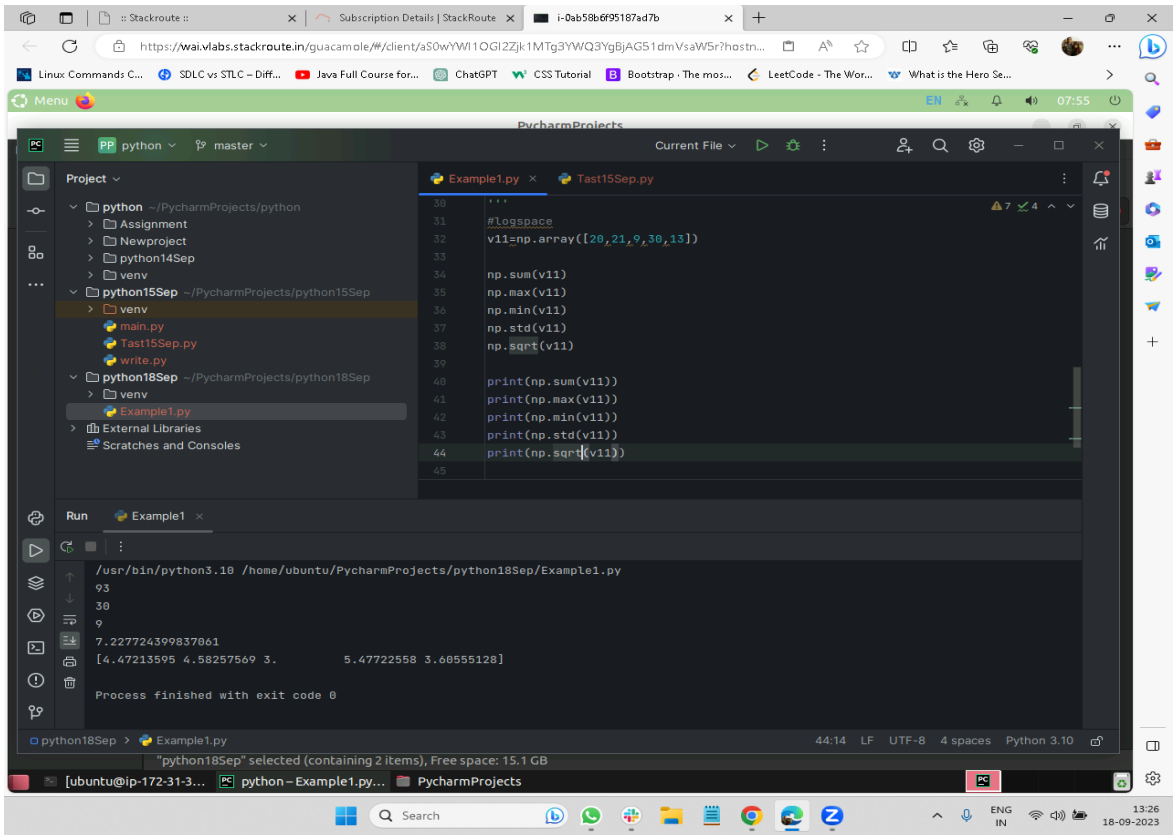
1.



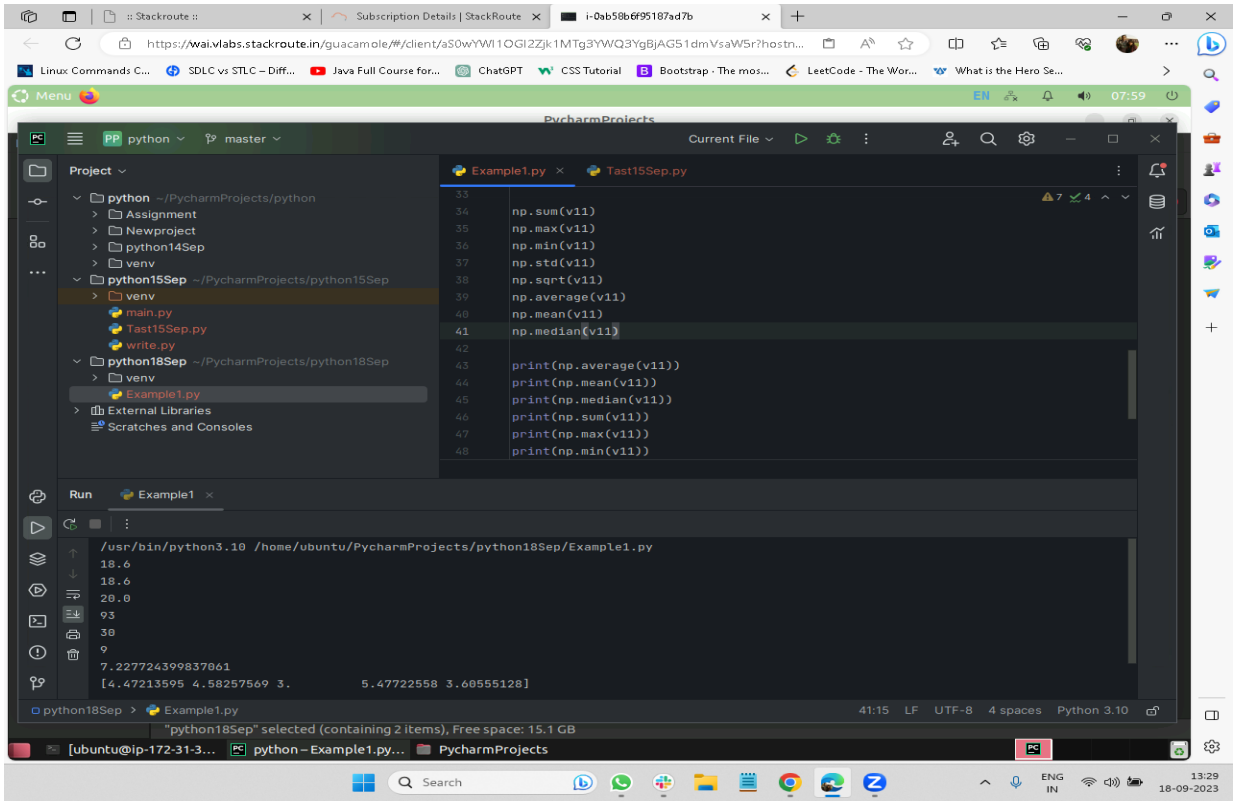
2. Line space



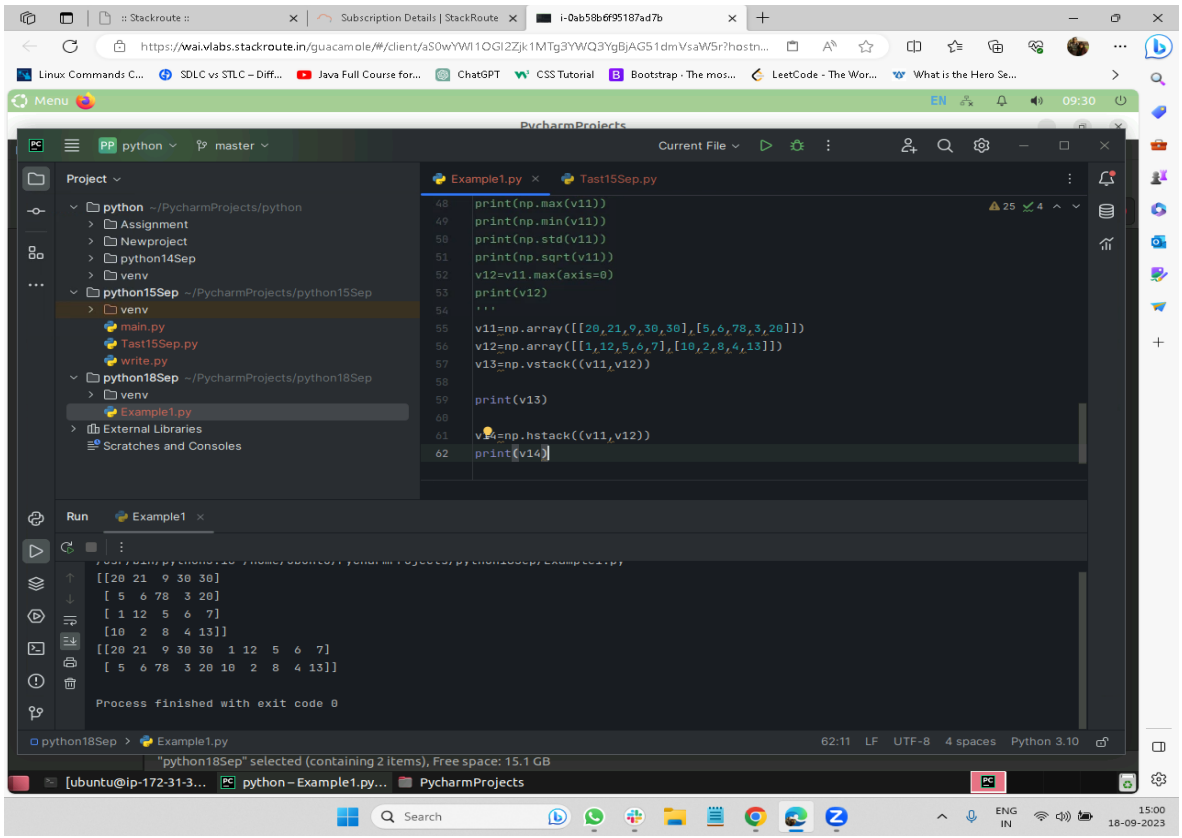
3.Logspace

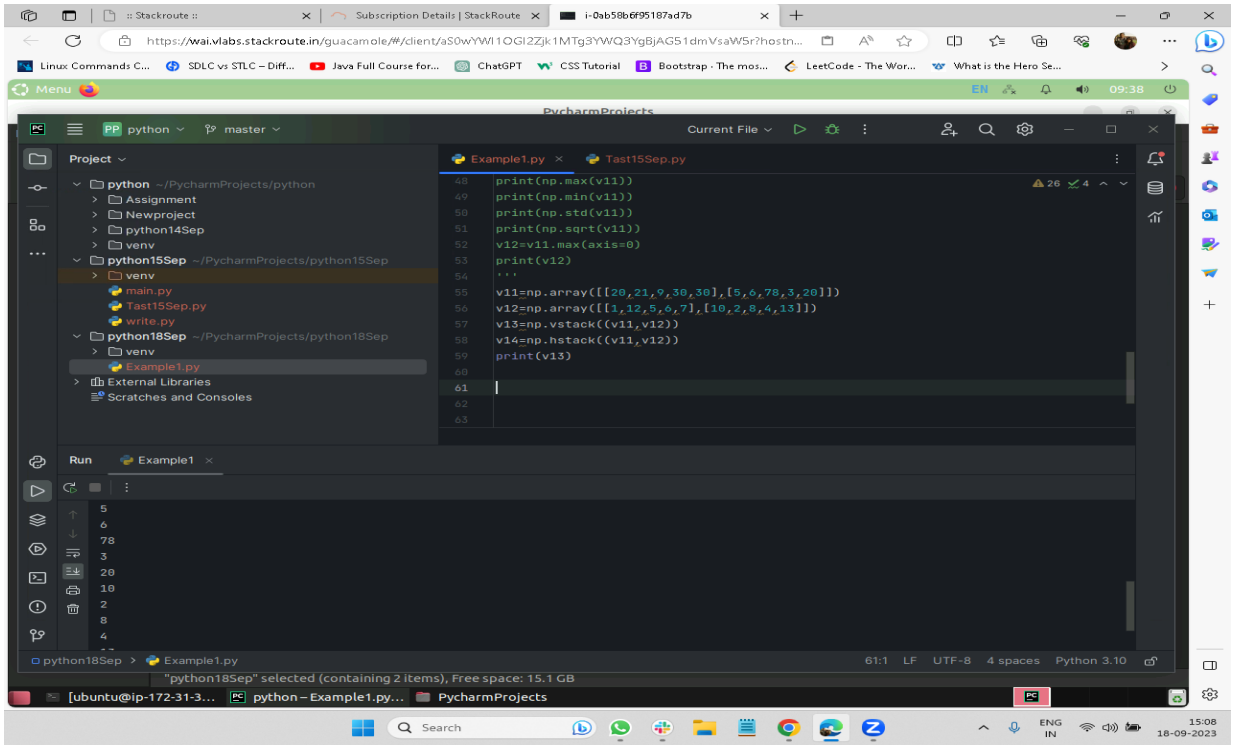

#logspace
v11=np.array([20,21,9,30,13])
np.sum(v11)
np.max(v11)
np.min(v11)
np.std(v11)
np.sqrt(v11)
print(np.sum(v11))
print(np.max(v11))
print(np.min(v11))
print(np.std(v11))
print(np.sqrt(v11))
/usr/bin/python3.10 /home/ubuntu/PycharmProjects/python18Sep/Example1.py
93
30
9
7.227724399837061
[4.47213595 4.58257569 3. 5.47722558 3.60555128]
Process finished with exit code 0

4.

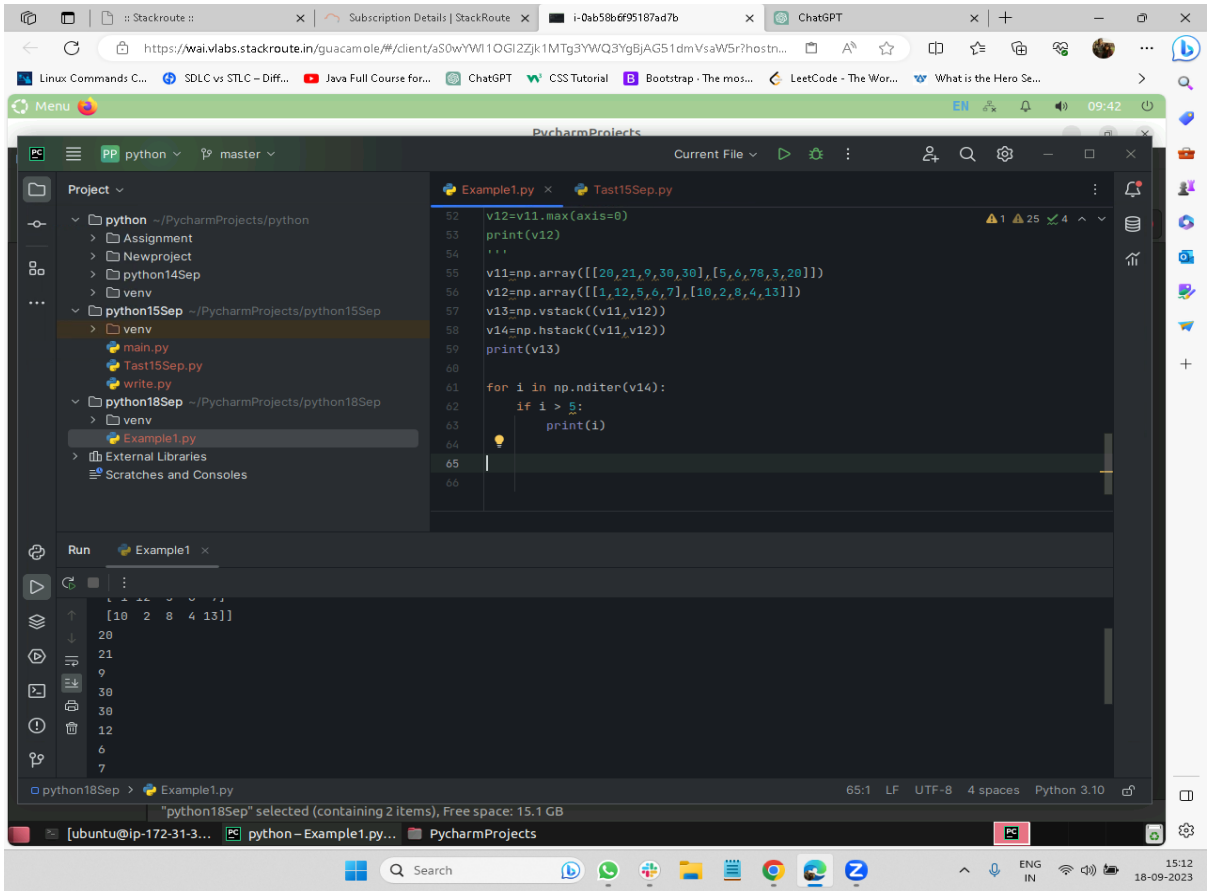

np.sum(v11)
np.max(v11)
np.min(v11)
np.std(v11)
np.sqrt(v11)
np.average(v11)
np.mean(v11)
np.median(v11)
print(np.average(v11))
print(np.mean(v11))
print(np.median(v11))
print(np.sum(v11))
print(np.max(v11))
print(np.min(v11))
/usr/bin/python3.10 /home/ubuntu/PycharmProjects/python18Sep/Example1.py
18.6
18.6
20.0
93
30
9
7.227724399837061
[4.47213595 4.58257569 3. 5.47722558 3.60555128]

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

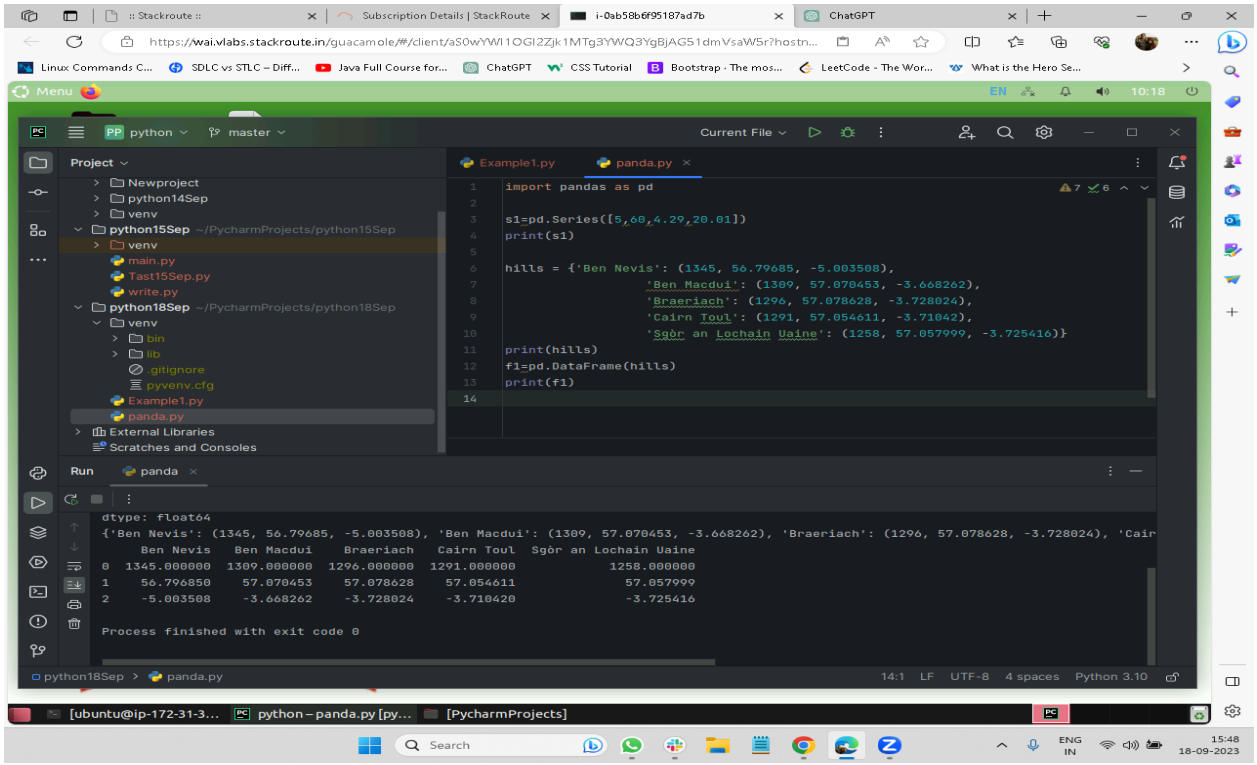




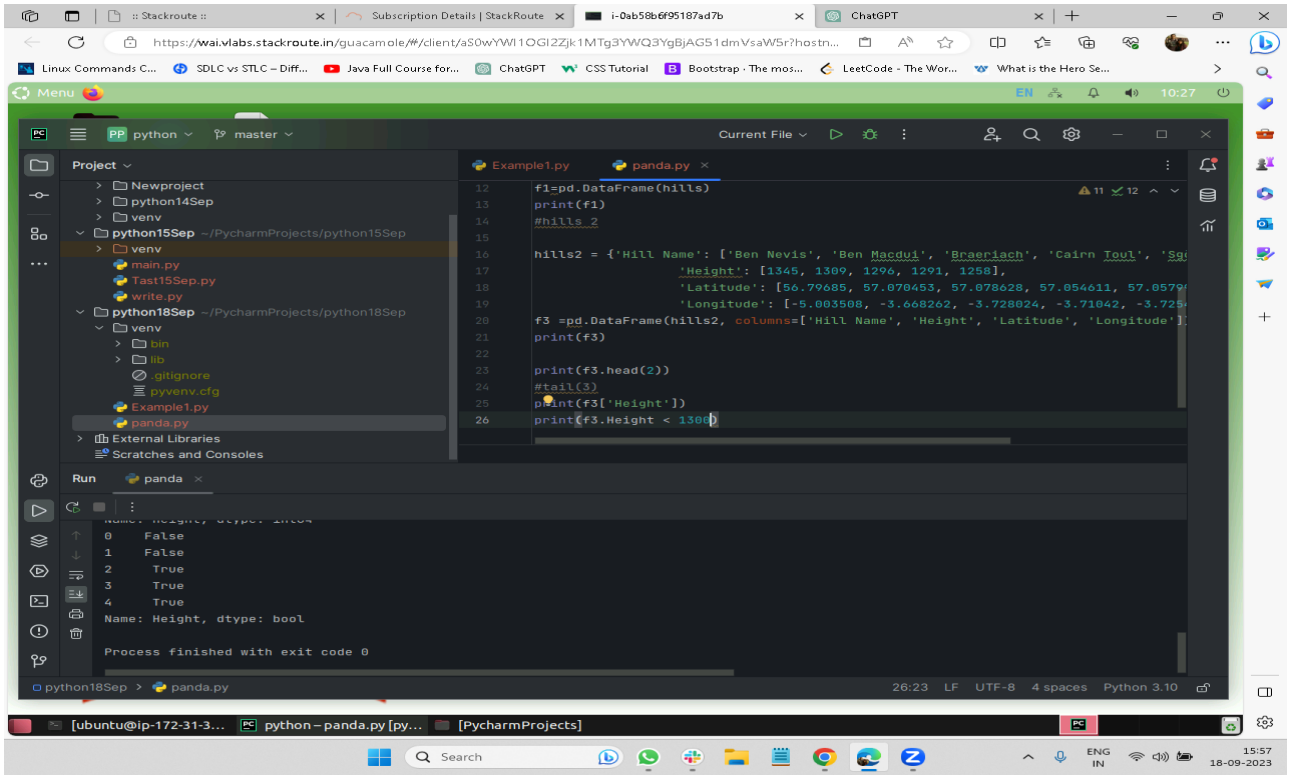
6.



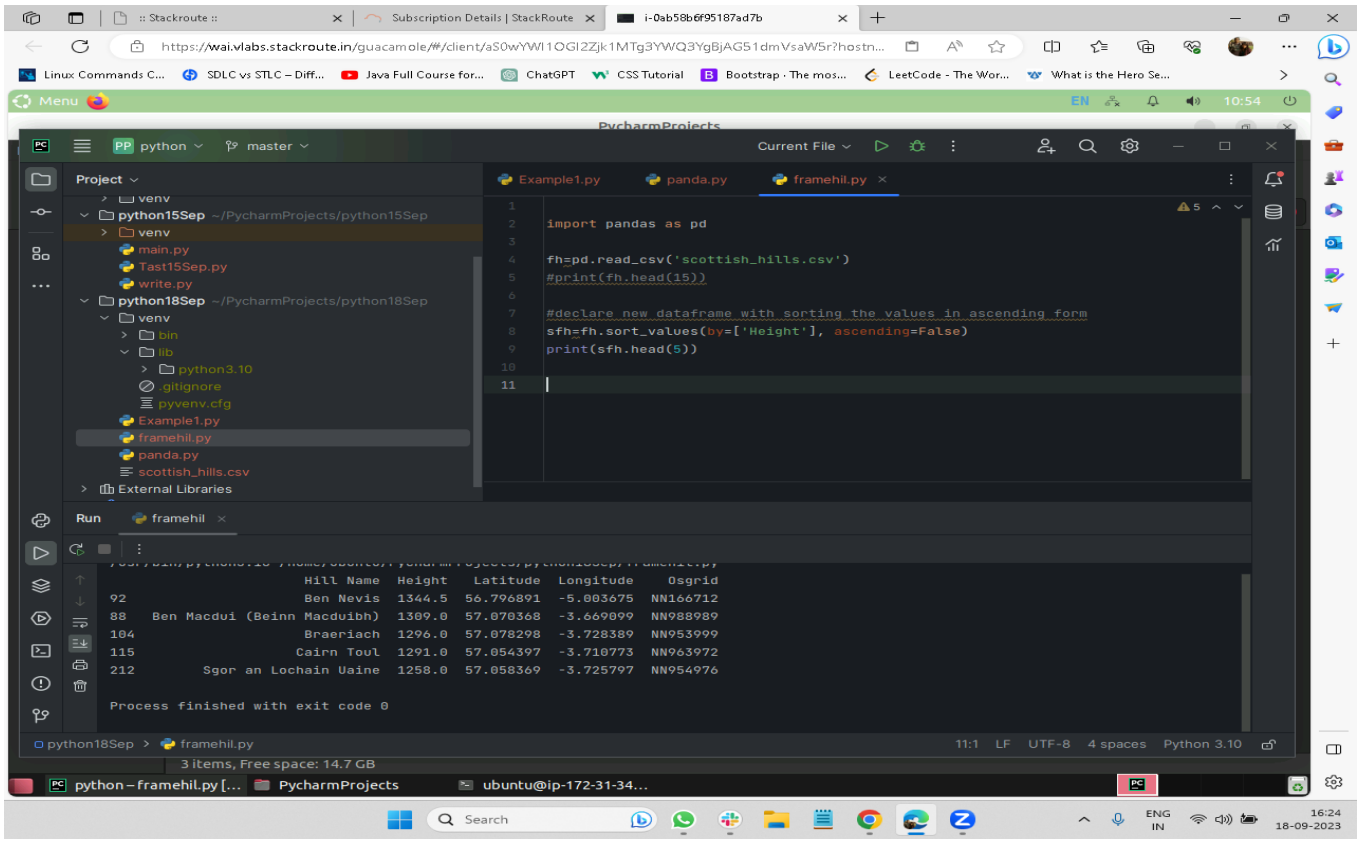
7: Pandas



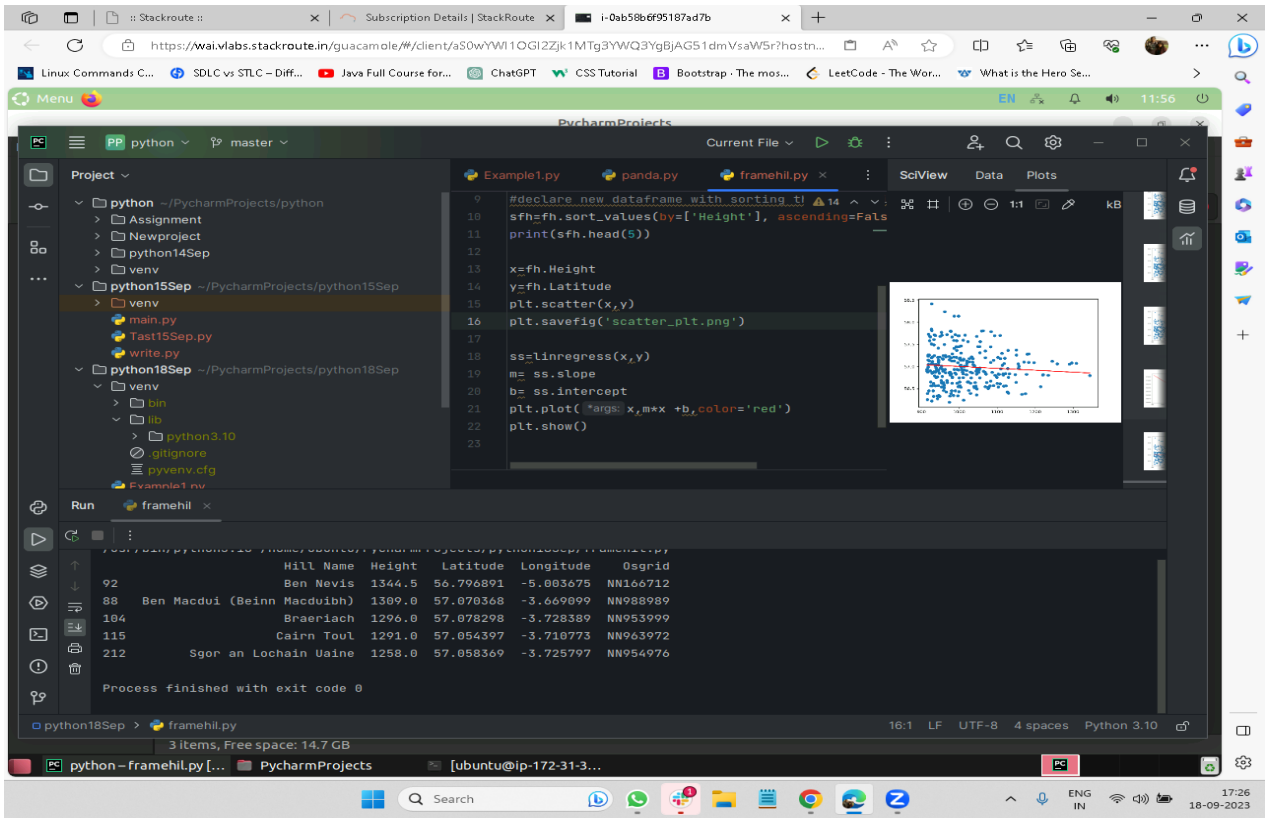
8. Pandas


f1=pd.DataFrame(hills)
print(f1)
#hills 2
hills2 = {'Hill Name': ['Ben Nevis', 'Ben Macdui', 'Braeriach', 'Cairn Toul', 'Sg
'Height': [1345, 1309, 1296, 1291, 1258],
'Latitude': [56.79685, 57.070453, 57.078628, 57.054611, 57.0579
'Longitude': [-5.003508, -3.668262, -3.728024, -3.71042, -3.725
f3 =pd.DataFrame(hills2, columns=['Hill Name', 'Height', 'Latitude', 'Longitude']
print(f3)
print(f3.head(2))
#tail(3)
print(f3['Height'])
print(f3.Height < 1300)
0 False
1 False
2 True
3 True
4 True
Name: Height, dtype: bool
Process finished with exit code 0

9.

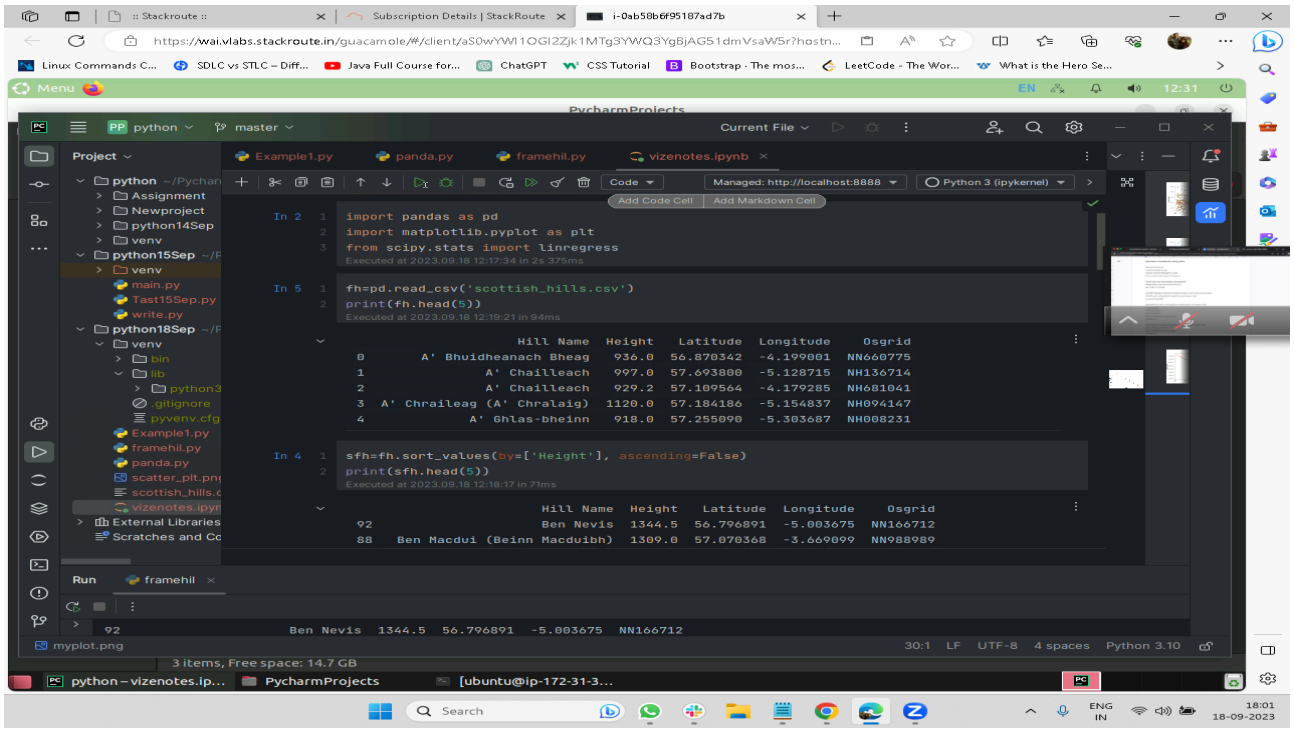

import pandas as pd
fh=pd.read_csv('scottish_hills.csv')
#print(fh.head(15))
#declare new dataframe with sorting the values in ascending form
sfh=fh.sort_values(by=['Height'], ascending=False)
print(sfh.head(5))
Hill Name Height Latitude Longitude Osgrid
92 Ben Nevis 1344.5 56.796891 -5.003675 NN166712
88 Ben Macdui (Beinn Macduibh) 1309.0 57.070368 -3.669099 NN988989
104 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
Process finished with exit code 0

10.

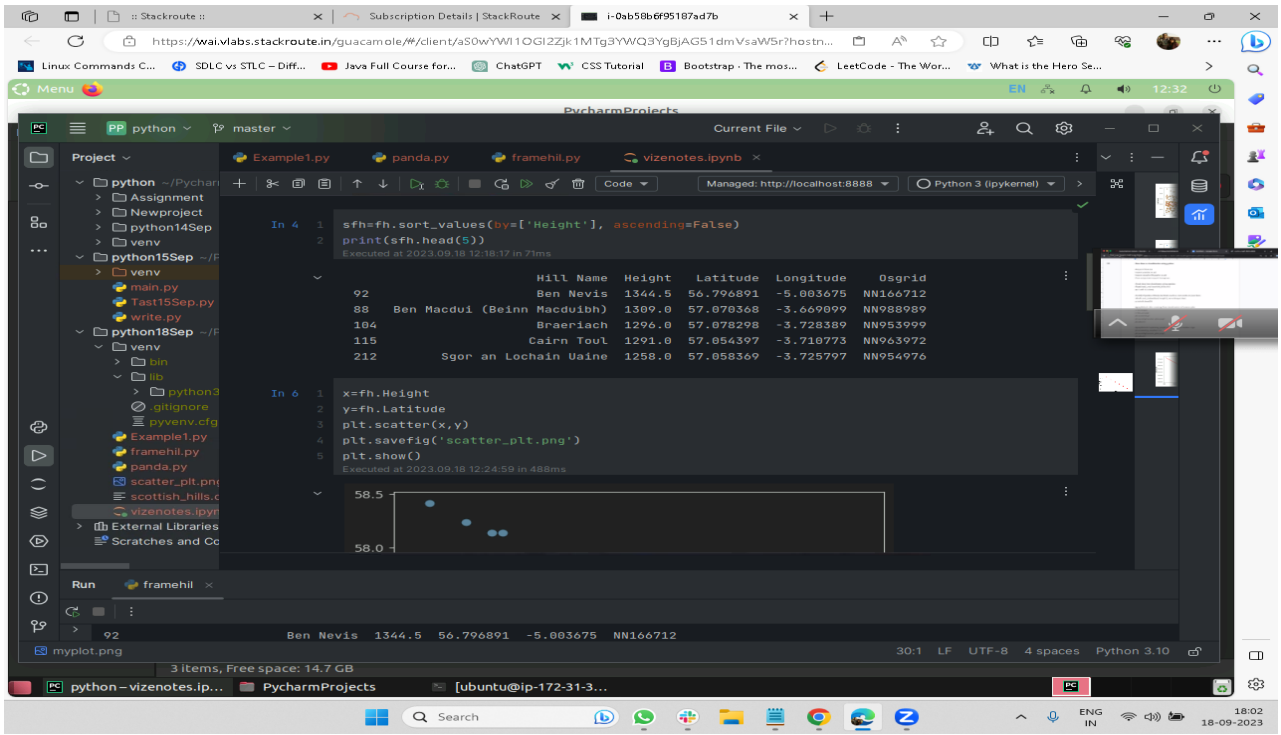

#declare new dataframe with sorting tl
sfh=fh.sort_values(by=['Height'], ascending=Fals
print(sfh.head(5))
x=fh.Height
y=fh.Latitude
plt.scatter(x,y)
plt.savefig('scatter_plt.png')
ss=linregress(x,y)
m= ss.slope
b= ss.intercept
plt.plot(*args: x,m*x +b,color='red')
plt.show()
Hill Name Height Latitude Longitude Osgrid
92 Ben Nevis 1344.5 56.796891 -5.003675 NN166712
88 Ben Macdui (Beinn Macduibh) 1309.0 57.070368 -3.669099 NN988989
104 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
Process finished with exit code 0

Vizenotes: Jupyter

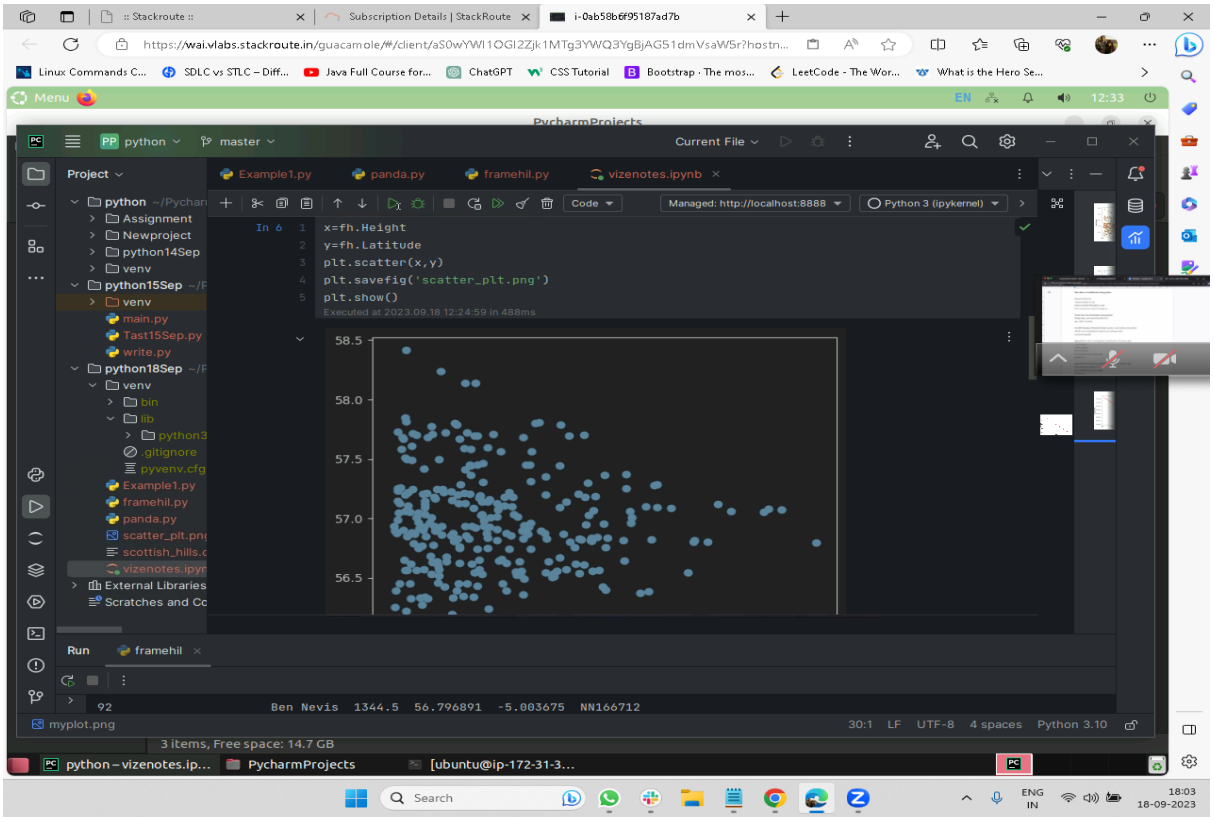
1.



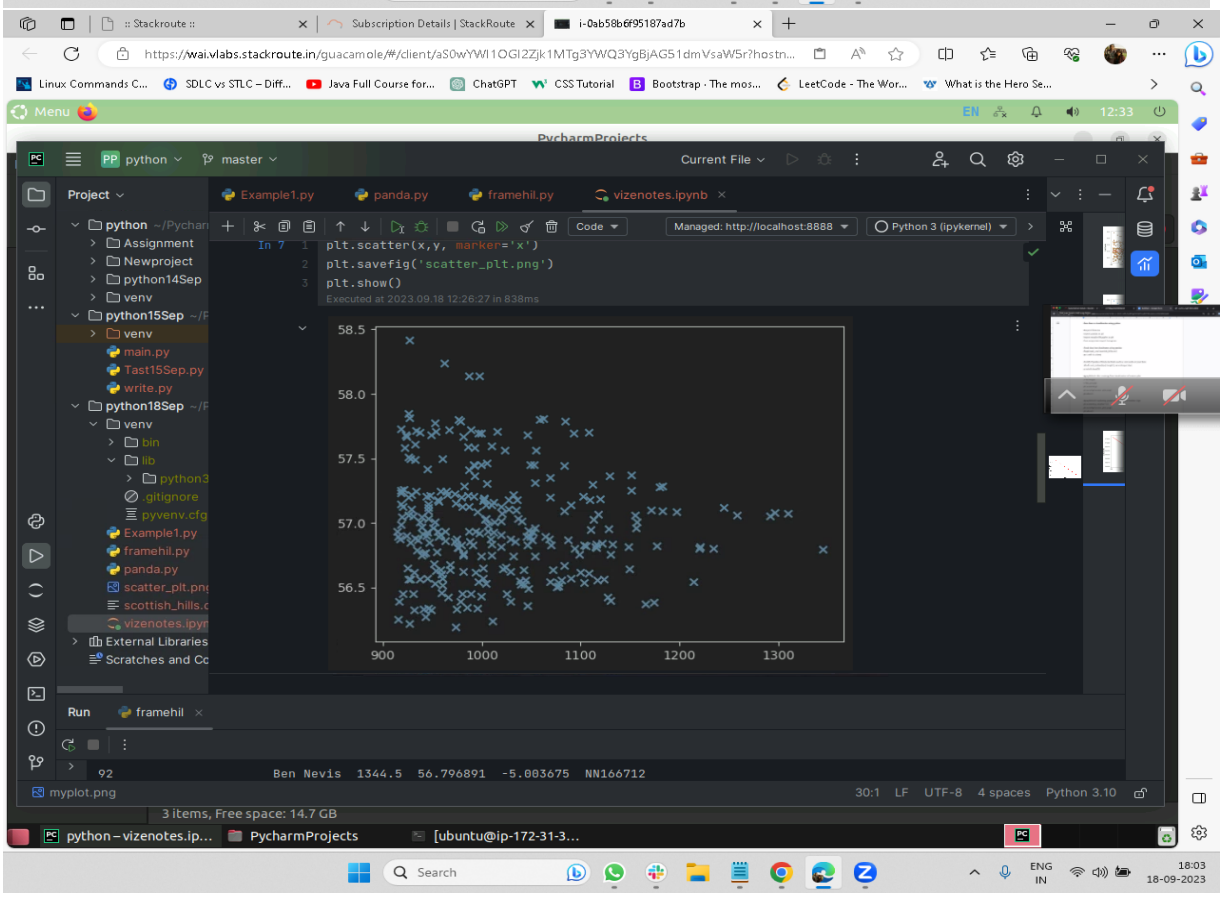
2.

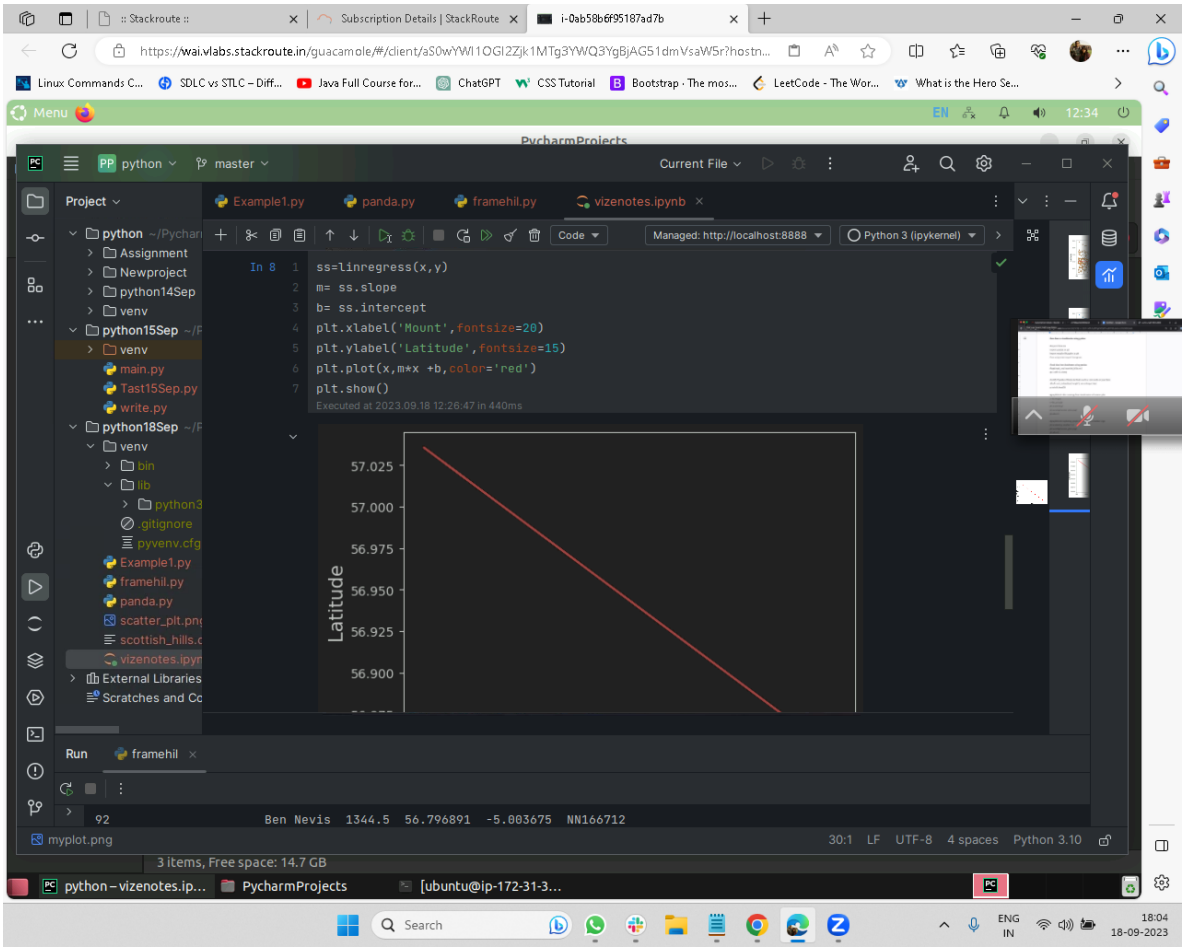


3.


x=fh.Height
y=fh.Latitude
plt.scatter(x,y)
plt.savefig('scatter_plt.png')
plt.show()
58.5
58.0
57.5
57.0
56.5
92 Ben Nevis 1344.5 56.796891 -5.003675 NN166712

4.


plt.scatter(x,y, marker='x')
plt.savefig('scatter_plt.png')
plt.show()
58.5
58.0
57.5
57.0
56.5
900
1000
1100
1200
1300
92 Ben Nevis 1344.5 56.796891 -5.003675 NN166712

5. 
Example1.py
panda.py
framehil.py
vizenotes.ipynb
ss=linregress(x,y)
m= ss.slope
b= ss.intercept
plt.xlabel('Mount',fontsize=20)
plt.ylabel('Latitude',fontsize=15)
plt.plot(x,m*x +b,color='red')
plt.show()
Latitude
57.025
57.000
56.975
56.950
56.925
56.900
92 Ben Nevis 1344.5 56.796891 -5.003675 NN166712