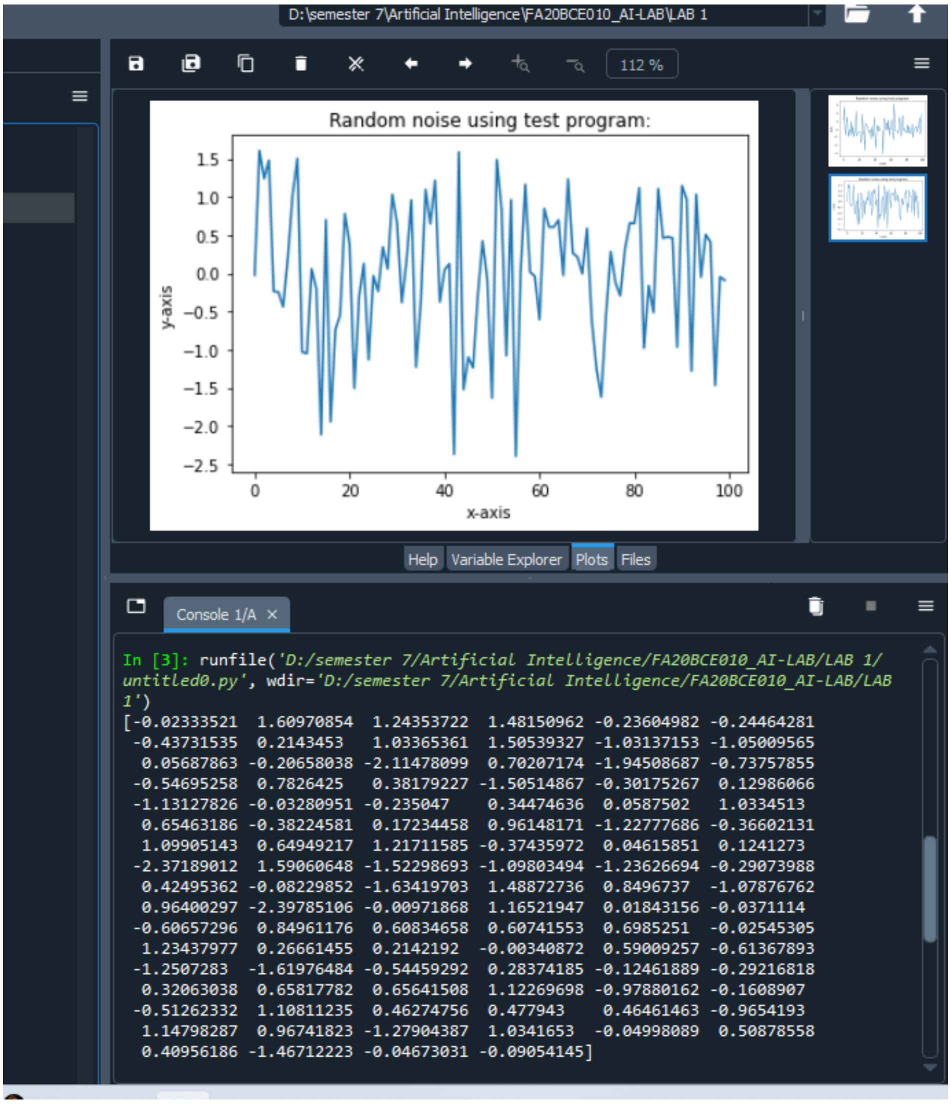
PRE LAB

LAB TASK 1:

```
import numpy as np
import matplotlib.pyplot as plt

values  = np.random.randn(100)
plt.plot(values)
plt.title('Random noise using test program:')
plt.xlabel("x-axis")
plt.ylabel("y-axis")

print(values)
plt.show()
```

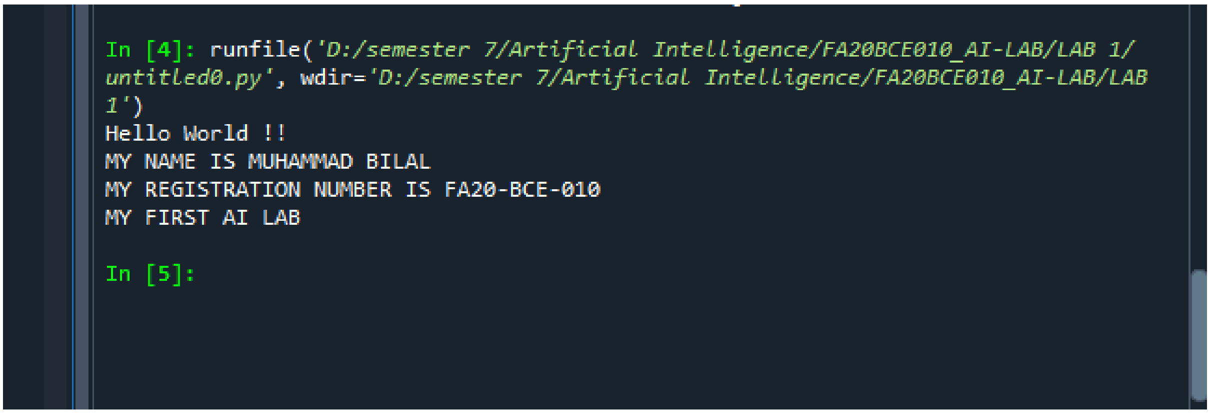


```
In [3]: runfile('D:/semester 7/Artificial Intelligence/FA20BCE010_AI-LAB/LAB 1/
untitled0.py', wdir='D:/semester 7/Artificial Intelligence/FA20BCE010_AI-LAB/LAB
1')
[-0.02333521  1.60970854  1.24353722  1.48150962 -0.23604982 -0.24464281
 -0.43731535  0.2143453   1.03365361  1.50539327 -1.03137153 -1.05009565
  0.05687863 -0.20658038 -2.11478099  0.70207174 -1.94508687 -0.73757855
 -0.54695258  0.7826425   0.38179227 -1.50514867 -0.30175267  0.12986066
 -1.13127826 -0.03280951 -0.235047    0.34474636  0.0587502   1.0334513
  0.65463186 -0.38224581  0.17234458  0.96148171 -1.22777686 -0.36602131
  1.09905143  0.64949217  1.21711585 -0.37435972  0.04615851  0.1241273
 -2.37189012  1.59060648 -1.52298693 -1.09803494 -1.23626694 -0.29073988
  0.42495362 -0.08229852 -1.63419703  1.48872736  0.8496737  -1.07876762
  0.96400297 -2.39785106 -0.00971868  1.16521947  0.01843156 -0.0371114
 -0.60657296  0.84961176  0.60834658  0.60741553  0.6985251  -0.02545305
  1.23437977  0.26661455  0.2142192  -0.00340872  0.59009257 -0.61367893
 -1.2507283  -1.61976484 -0.54459292  0.28374185 -0.12461889 -0.29216818
  0.32063038  0.65817782  0.65641508  1.12269698 -0.97880162 -0.1608907
 -0.51262332  1.10811235  0.46274756  0.477943    0.46461463 -0.9654193
  1.14798287  0.96741823 -1.27904387  1.0341653  -0.04998089  0.50878558
  0.40956186 -1.46712223 -0.04673031 -0.09054145]
```

Figure 1 ploting random numbers

LAB TASK 2:

```
print("Hello World !!")

print("MY NAME IS MUHAMMAD BILAL")

print("MY REGISTRATION NUMBER IS FA20-BCE-010")

print("MY FIRST AI LAB")
```

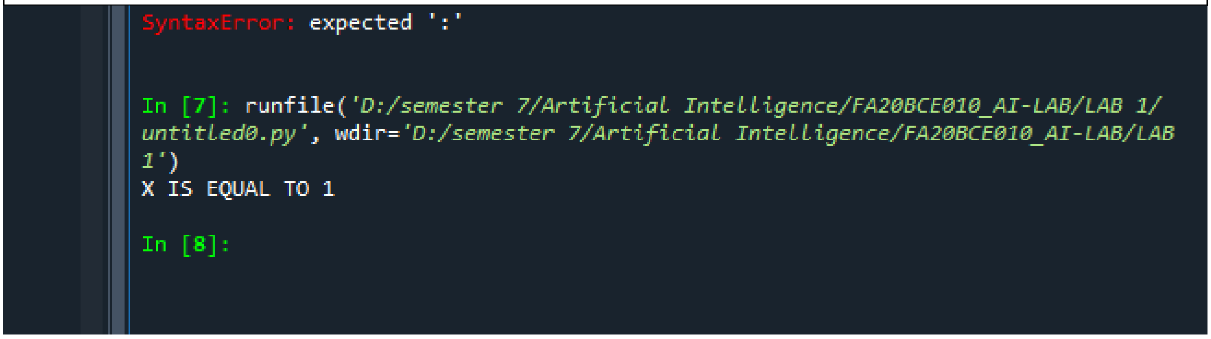


```
In [4]: runfile('D:/semester 7/Artificial Intelligence/FA20BCE010_AI-LAB/LAB 1/
untitled0.py', wdir='D:/semester 7/Artificial Intelligence/FA20BCE010_AI-LAB/LAB
1')
Hello World !!
MY NAME IS MUHAMMAD BILAL
MY REGISTRATION NUMBER IS FA20-BCE-010
MY FIRST AI LAB

In [5]:
```

Figure 2 simple print command

LAB TASK 3:

```
X= 1
if X==1 :
    print('X IS EQUAL TO 1')
```



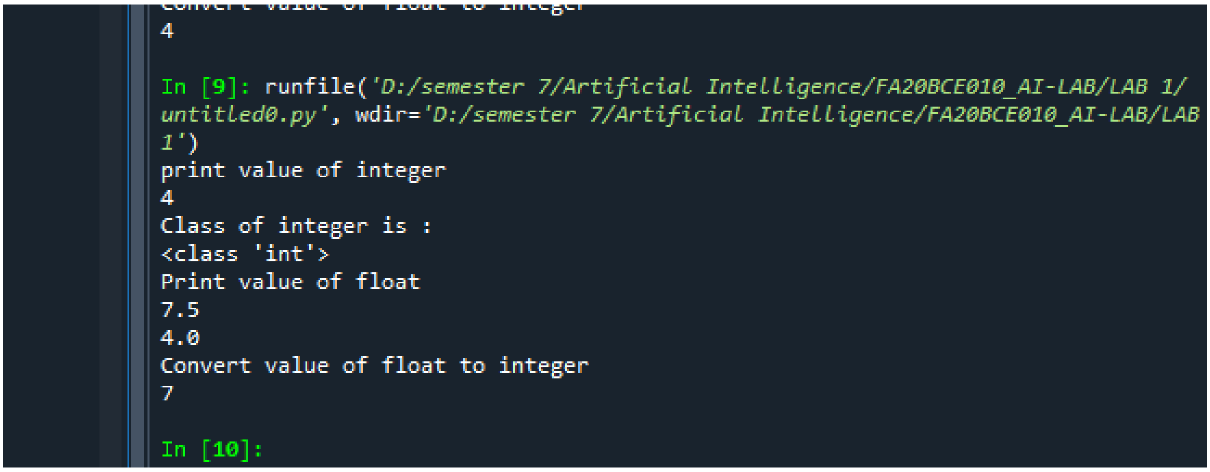
```
SyntaxError: expected ':'


In [7]: runfile('D:/semester 7/Artificial Intelligence/FA20BCE010_AI-LAB/LAB 1/
untitled0.py', wdir='D:/semester 7/Artificial Intelligence/FA20BCE010_AI-LAB/LAB
1')
X IS EQUAL TO 1

In [8]:
```

Figure 3 indentation and if statement

IN LAB

TASK 4: NUMBERS

```
print('print value of integer')
integer_us = 4;
print(integer_us)

print('Class of integer is :')
print(type(integer_us))

print('Print value of float ')
float_us = 7.5
print(float_us)

myfloat = float(integer_us)

print(myfloat)

print('Convert value of float to integer')

myint = int(float_us)

print(myint)
```



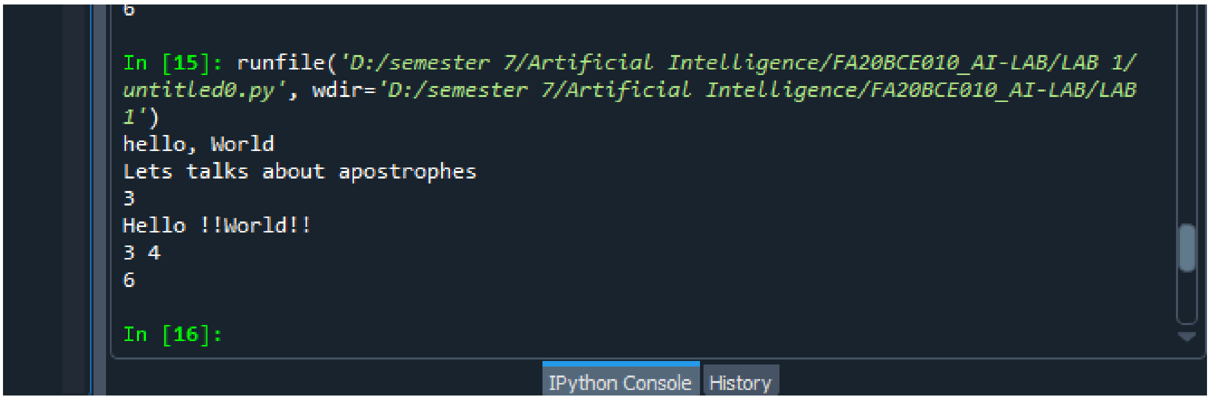
```
Convert value of float to integer
4

In [9]: runfile('D:/semester 7/Artificial Intelligence/FA20BCE010_AI-LAB/LAB 1/
untitled0.py', wdir='D:/semester 7/Artificial Intelligence/FA20BCE010_AI-LAB/LAB
1')
print value of integer
4
Class of integer is :
<class 'int'>
Print value of float
7.5
4.0
Convert value of float to integer
7

In [10]:
```

Figure 4 use of type keyword and conversion from int to float vice versa

TASK 4: STRINGS

```
mystring = 'hello, World'
print(mystring)

mystring = "Lets talks about apostrophes"
print(mystring)
```

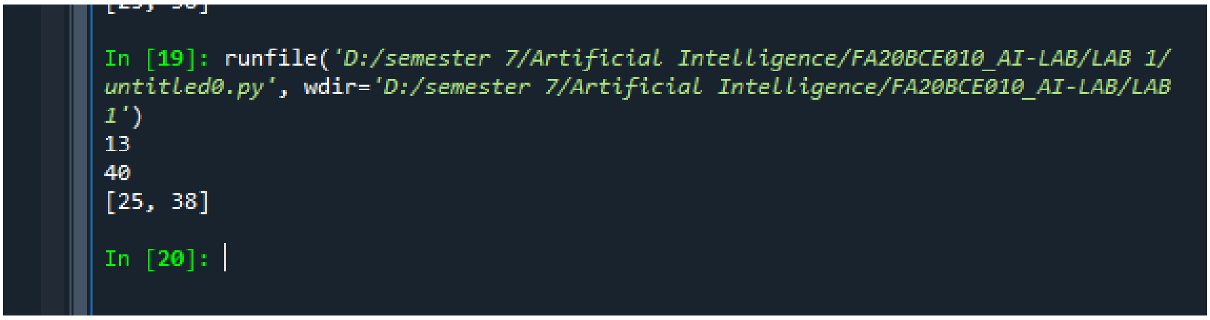
```
one = 1
two = 2
three = one + two;
print(three)

hello = 'Hello !!'
world = 'World!!'
helloWorld = hello + '' + world
print(helloWorld)

a, b = 3, 4
print(a,b)

print( one + two + three)
```



```
6

In [15]: runfile('D:/semester 7/Artificial Intelligence/FA20BCE010_AI-LAB/LAB 1/
untitled0.py', wdir='D:/semester 7/Artificial Intelligence/FA20BCE010_AI-LAB/LAB
1')
hello, World
Lets talks about apostrophes
3
Hello !!World!!
3 4
6

In [16]:
```

TASK 4: LISTS

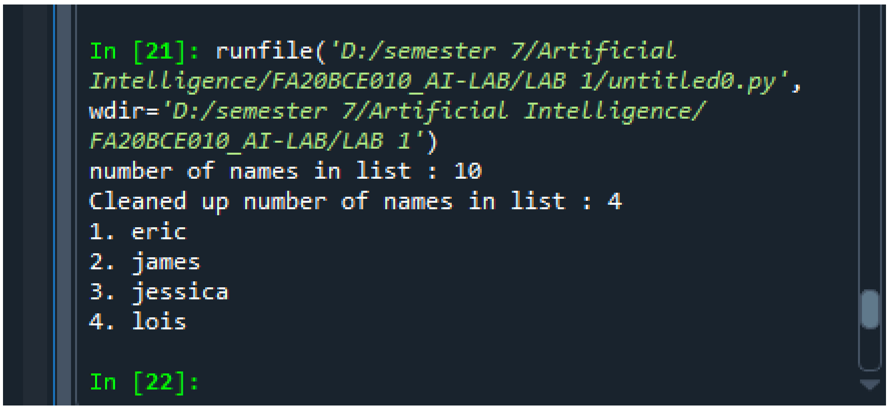
```
mylist  = []
mylist.append(13)
mylist.append(25)
mylist.append(38)
mylist.append(39)
mylist.append(40)
# first element of list
print(mylist[0])

# last element of list
print(mylist[-1])

# subset of list
print(mylist[1:3])
```



```
In [19]: runfile('D:/semester 7/Artificial Intelligence/FA20BCE010_AI-LAB/LAB 1/
untitled0.py', wdir='D:/semester 7/Artificial Intelligence/FA20BCE010_AI-LAB/LAB
1')
13
40
[25, 38]

In [20]: |
```

Figure 5 use of list and their ordered elements

```
names = ['james', 3423, 343, 443, 'eric' ,43,'jessica',
         54325322, 'lois ', 563]

print('number of names in list : {}'.format(len(names)))

new_names = []

for n in names:
    if isinstance(n, str):
        new_names.append(n)

new_names.sort()
print('Cleaned up number of names in list : {}' . format(len(new_names)))


for i , n in enumerate(new_names):
    print('{}. {}'.format(i+1, n))
```



```
In [21]: runfile('D:/semester 7/Artificial
Intelligence/FA20BCE010_AI-LAB/LAB 1/untitled0.py',
wdir='D:/semester 7/Artificial Intelligence/
FA20BCE010_AI-LAB/LAB 1')
number of names in list : 10
Cleaned up number of names in list : 4
1. eric
2. james
3. jessica
4. lois

In [22]:
```

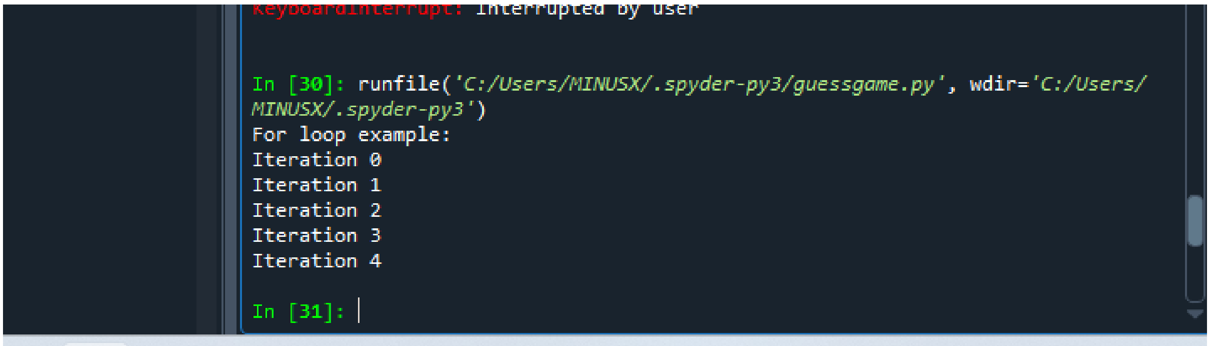
Figure 6 data handling or extracting from object with multiple type of elements

POST LAB

TASK 1: FOR LOOP

```
# For loop example
```

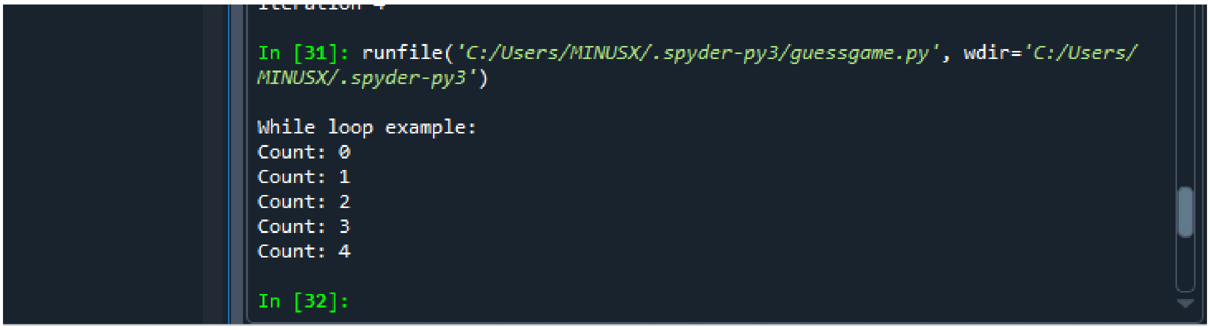
```
print("For loop example:")
for i in range(5):
    print("Iteration", i)
```



```
KeyboardInterrupt: Interrupted by user


In [30]: runfile('C:/Users/MINUSX/.spyder-py3/guessgame.py', wdir='C:/Users/
MINUSX/.spyder-py3')
For loop example:
Iteration 0
Iteration 1
Iteration 2
Iteration 3
Iteration 4

In [31]: |
```

TASK 1: WHILE LOOP

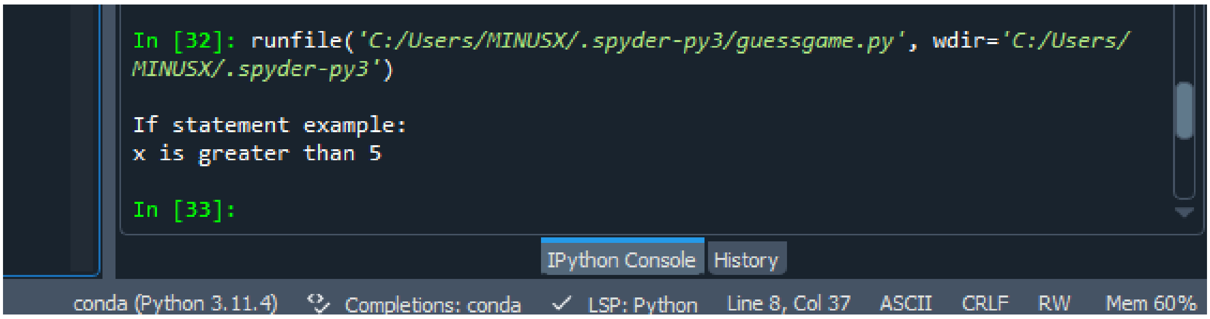
```
# While loop example
print("\nWhile loop example:")
count = 0
while count < 5:
    print("Count:", count)
    count += 1
```



```
Iteration 4

In [31]: runfile('C:/Users/MINUSX/.spyder-py3/guessgame.py', wdir='C:/Users/
MINUSX/.spyder-py3')

While loop example:
Count: 0
Count: 1
Count: 2
Count: 3
Count: 4

In [32]:
```

TASK 1: IF SYNTAX

```
# If statement example
print("\nIf statement example:")
x = 10
if x > 5:
    print("x is greater than 5")
else:
    print("x is not greater than 5")
```



```
In [32]: runfile('C:/Users/MINUSX/.spyder-py3/guessgame.py', wdir='C:/Users/
MINUSX/.spyder-py3')

If statement example:
x is greater than 5

In [33]:
```