

jupyter Untitled2 Last Checkpoint: bir saat önce (autosaved)

File Edit View Insert Cell Kernel Widgets Help Trusted Python 3 Logout

```
In [5]: #variables and data types
name = 'x'
print(name)
x

In [8]: A = 'Python'
a = 'anaconda'

In [9]: print(a,A)
anaconda Python

In [10]: a = [1,2,3,4,5,6]

In [11]: a[2]
Out[11]: 3

In [12]: #set
a = {1,2,3,4,5,5}

In [13]: print(a)
{1, 2, 3, 4, 5}

In [14]: #tuple
b = (1,2,3,4,5)

In [15]: print(b)
(1, 2, 3, 4, 5)

In [16]: #dictionary
a = { 1: 'value', 2: 'value2' }

In [17]: print(a)
{1: 'value', 2: 'value2'}

In [18]: a = 10
b = 20
a > 8 and b > 20

Out[18]: False

In [19]: x = 10
y = 20

In [23]: if x == y:
    print("equal")
elif x > y:
    print("greater")
else:
    print("smaller")
smaller

In [27]: def funct(n):
    if n == 1:
        return n
    else:
        return n * funct(n-1)
funct(4)
Out[27]: 24

In [30]: for i in range(0,10):
    print(i)
0
1
2
3
4
5
6
7
8
9

In [32]: n = 5
while n > 0:
    if n == 4:
        break
    else:
        print(n)
        n = n - 1
5

In [33]: class parent():
    def func1(self):
        print('this is function 1')
class child(parent):
    def func2(self):
        print("this is function 2")
ob = child()
ob.func1()
this is function 1

In [35]: import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns

In [ ]: df = pd.read_csv
```

The screenshot shows the PyCharm IDE interface. At the top, the menu bar includes File, Edit, View, Navigate, Code, Refactor, Run, Tools, VCS, Window, Help, and pythonProject1 - main.py. The main editor window displays the file main.py with the following code:

```
1 #Name: Muratcan SARI sNO: 17070001028
2
3 print("Hello World")
```

The code editor has three status indicators in the top right corner: a yellow exclamation mark icon with '2', a green checkmark icon with '1', and a grey arrow icon.

In the bottom right corner of the editor, there are icons for running, stopping, and refreshing the application.

The bottom panel shows the 'Run' tool window. It lists the configuration 'main' with a green play button icon. The run log shows the command: C:\Users\Muratcan\pexamples\Scripts\python.exe C:/Users/Muratcan/PycharmProjects/pythonProject1/main.py. The output of the run is 'Hello World'. Below the output, it says 'Process finished with exit code 0'. On the far left of the bottom panel, there are icons for Structure, Find, and other navigation tools.

The screenshot shows the PyCharm IDE interface. The top menu bar includes File, Edit, View, Navigate, Code, Refactor, Run, Tools, VCS, Window, Help, and pythonProject1 - main.py. The title bar displays "pythonProject1 > main.py". The code editor window contains the following Python script:

```
1 #Name: Muratcan SARI sNO: 17070001028
2
3 print("Welcome to Guru99")
4 print(1 * "\n")
5 print("USA")
6 print(1 * "\n")
7 print("Canada")
8 print(1 * "\n")
9 print("Germany")
10 print(1 * "\n")
11 print("France")
12 print(1 * "\n")
13 print("Japan")
14 print("Welcome to", end=' ')
15 print("Guru99", end='!')
```

The status bar at the bottom right indicates "PyCharm 2021.2.2 available".

The screenshot shows the PyCharm IDE interface. The top menu bar includes File, Edit, View, Navigate, Code, Refactor, Run, Tools, VCS, Window, Help, and the current project name "pythonProject1 - main.py". The left sidebar has a "Project" view showing the file "main.py". The code editor window displays the following Python script:

```
#Name: Muratcan SARI sNO: 17070001028
a=100
print(a)

f=0
print(f)
f='guru99'
print(f)

a="Guru"
b = 99
print(a+str(b))
```

The status bar at the bottom indicates the run configuration "main" and the command "C:\Users\Muratcan\pexamples\Scripts\python.exe C:/Users/Muratcan/PycharmProjects/pythonProject1/main.py". The run output shows the following results:

```
100
0
guru99
Guru99
Process finished with exit code 0
```

A notification in the bottom right corner informs the user that "PyCharm 2021.2.2 available" and provides an "Update" link.

The screenshot shows the PyCharm IDE interface with the following details:

- File Menu:** File, Edit, View, Navigate, Code, Refactor, Run, Tools, VCS, Window, Help.
- Project:** pythonProject1 - main.py
- Code Editor:** The main window displays the file `main.py` with the following content:

```
1 #Name: Muratcan SARI sNO: 17070001028
2
3 # Declare a variable and initialize it
4 f = 101
5 print(f)
6 # Global vs. local variables in functions
7 def someFunction():
8     # global f
9     f = 'I am learning Python'
10    print(f)
11    someFunction()
12    print(f)
13
14 f = 101
15 print(f)
16 # Global vs.local variables in functions
17 def someFunction():
18     global f
19     print(f)
20     f = "changing global variable"
21     someFunction()
```
- Run Tab:** Shows the output of the run command:

```
Run: main x
C:\Users\Muratcan\pexamples\Scripts\python.exe C:/Users/Muratcan/PycharmProjects/pythonProject1/main.py
101
I am learning Python
101
101
101
changing global variable

Process finished with exit code 0
```
- Status Bar:** PyCharm 2021.2.2 available, Update...

The screenshot shows the PyCharm IDE interface. The top menu bar includes File, Edit, View, Navigate, Code, Refactor, Run, Tools, VCS, Window, Help, and pythonProject1 - main.py. The left sidebar has a Project view showing 'main.py' and a Structure view. The main code editor window displays the following Python code:

```
#Name: Muratcan SARI sNO: 17070001028
f = 11
print(f)
del f
print(f)
```

The code editor has status indicators at the top right: 2 errors, 3 warnings, and 1 fix. The bottom Run tab shows the command: C:\Users\Muratcan\pexamples\Scripts\python.exe C:/Users/Muratcan/PycharmProjects/pythonProject1/main.py. The Traceback output is:

```
Traceback (most recent call last):
  File "C:/Users/Muratcan/PycharmProjects/pythonProject1/main.py", line 5, in <module>
    11
        print(f)
      ^~~~~
      NameError: name 'f' is not defined
```

The message "Process finished with exit code 1" is displayed at the bottom. A notification in the bottom right corner says "PyCharm 2021.2.2 available".

The screenshot shows the PyCharm IDE interface. The top menu bar includes File, Edit, View, Navigate, Code, Refactor, Run, Tools, VCS, Window, Help, and pythonProject1 - main.py. The left sidebar has a Project view with 'main.py' selected. The main code editor window displays the following Python script:

```
1 #Name: Muratcan SARI sNO: 17070001028
2
3 tup1 = ('Robert', 'Carlos', '1965', 'Terminator 1995', 'Actor', 'Florida')
4 tup2 = (1, 2, 3, 4, 5, 6, 7)
5 print(tup1[0])
6 print(tup2[1:4])
7 # Tuples is similar to arrays in C programming
```

The status bar at the bottom shows the run configuration: Run: main ×, C:\Users\Muratcan\pexamples\Scripts\python.exe C:/Users/Muratcan/PycharmProjects/pythonProject1/main.py. The output pane shows the results of the run: Robert and (2, 3, 4). It also indicates 'Process finished with exit code 0'.

The screenshot shows the PyCharm IDE interface with a dark theme. The top menu bar includes File, Edit, View, Navigate, Code, Refactor, Run, Tools, VCS, Window, Help, and pythonProject1 - main.py. The left sidebar has a Project view showing 'main.py'. The main editor window contains the following Python code:

```
1 #Name: Muratcan SARI sNO: 17070001028
2
3 x = ("Guru99", 20, "Education")      # tuple packing
4 (company, emp, profile) = x          # tuple unpacking
5 print(company)
6 print(emp)
7 print(profile)
8
9 # its like x1=Guru99,x2=20,x3=Education and then switching values between x values with company,emp and profile so -> company=Guru99, emp= 20, profile = Education.
10 # We can use this method in python for replacing swap operation in C.(i guess.)
```

The bottom run tool window shows the output of the code execution:

```
Run: main ×
C:\Users\Muratcan\pexamples\Scripts\python.exe C:/Users/Muratcan/PycharmProjects/pythonProject1/main.py
Guru99
20
Education
Process finished with exit code 0
```

The screenshot shows the PyCharm IDE interface with the following details:

- Top Bar:** File, Edit, View, Navigate, Code, Refactor, Run, Tools, VCS, Window, Help, pythonProject1 - main.py
- Toolbar:** Includes icons for Run, Stop, Step, and others.
- Code Editor:** The file main.py contains Python code demonstrating if statements, tuples, and dictionaries. The code is as follows:

```
3  b=(1,4)
4  if (a>b):print("a is bigger")
5  else: print("b is bigger")
6
7  a=(5,6)
8  b=(5,4)
9  if (a>b):print("a is bigger")
10 else: print("b is bigger")
11
12 a=(5,6)
13 b=(6,4)
14 if (a>b):print("a is bigger")
15 else: print("b is bigger")
16
17 #Tuples and dictionary
18 a = {'x':100, 'y':200}
19 b = a.items()
20 print(b)
21
22 #Slicing of Tuple
23 x = ("a", "b", "c", "d", "e")
```

- Run Tab:** Shows the command run: C:\Users\Muratcan\pexamples\Scripts\python.exe C:/Users/Muratcan/PycharmProjects/pythonProject1/main.py and the resulting output:

```
a is bigger
a is bigger
b is bigger
dict_items([('x', 100), ('y', 200)])
('c', 'd')
```
- Bottom Status Bar:** PyCharm 2021.2.2 available, Update...

File Edit View Navigate Code Refactor Run Tools VCS Window Help pythonProject1 - main.py

pythonProject1 > main.py

Project main.py

```
1 #Name: Muratcan SARI sNO: 17070001028
2 Dict = {'Tim': 18, 'Charlie': 12, 'Tiffany': 22, 'Robert': 25}
3 print(Dict['Tiffany'])
4
5 Dict = {'Tim': 18, 'Charlie': 12, 'Tiffany': 22, 'Robert': 25}
6 Boys = {'Tim': 18, 'Charlie': 12, 'Robert': 25}
7 Girls = {'Tiffany': 22}
8 studentX=Boys.copy()
9 studentY=Girls.copy()
10 print(studentX)
11 print(studentY)
12
13 Dict = {'Tim': 18, 'Charlie': 12, 'Tiffany': 22, 'Robert': 25}
14 Dict.update({"Sarah": 9})
15 print(Dict)
16
17 Dict = {'Tim': 18, 'Charlie': 12, 'Tiffany': 22, 'Robert': 25}
18 del Dict['Charlie']
19 print(Dict)
20 #Dictionaries in Python is similar to Structures in C programming.
```

Run: main

C:\Users\Muratcan\pexamples\Scripts\python.exe C:/Users/Muratcan/PycharmProjects/pythonProject1/main.py

22

{'Tim': 18, 'Charlie': 12, 'Robert': 25}

{'Tiffany': 22}

{'Tim': 18, 'Charlie': 12, 'Tiffany': 22, 'Robert': 25, 'Sarah': 9}

{'Tim': 18, 'Tiffany': 22, 'Robert': 25}

Process finished with exit code 0

PyCharm 2021.2.2 available  
Update...

File Edit View Navigate Code Refactor Run Tools VCS Window Help pythonProject1 - main.py

pythonProject1 > main.py

Project main.py

```
1 #Name: Muratcan SARI sNO: 17070001028
2 Dict = {'Tim': 18, 'Charlie': 12, 'Tiffany': 22, 'Robert': 25}
3 print("Students Name: %s" % list(Dict.items()))
4
5 Dict = {'Tim': 18, 'Charlie': 12, 'Tiffany': 22, 'Robert': 25}
6 Boys = {'Tim': 18, 'Charlie': 12, 'Robert': 25}
7 Girls = {'Tiffany': 22}
8 for key in list(Boys.keys()):
9     if key in list(Dict.keys()):
10         print(True)
11     else:
12         print(False)
13
14 Dict = {'Tim': 18, 'Charlie': 12, 'Tiffany': 22, 'Robert': 25}
15 Boys = {'Tim': 18, 'Charlie': 12, 'Robert': 25}
16 Girls = {'Tiffany': 22}
17 Students = list(Dict.keys())
18 Students.sort() # program sorted by names so first charlie then robert then tiffany and tim, between them t and i are common so f<t so tiffany first.
19 for S in Students:
20     print(":".join((S, str(Dict[S]))))
21 #Dictionaries in Python is similar to Structures in C programming.
```

Run: main

C:\Users\Muratcan\pexamples\Scripts\python.exe C:/Users/Muratcan/PycharmProjects/pythonProject1/main.py

Students Name: [('Tim', 18), ('Charlie', 12), ('Tiffany', 22), ('Robert', 25)]

True

True

True

Charlie:12

Robert:25

Tiffany:22

Tim:18

PyCharm 2021.2.2 available  
Update...

The screenshot shows the PyCharm IDE interface with the following details:

- Top Bar:** File, Edit, View, Navigate, Code, Refactor, Run, Tools, VCS, Window, Help, pythonProject1 - main.py
- Project Bar:** pythonProject1 > main.py
- Code Editor:** The file main.py contains Python code demonstrating dictionary operations. The code is as follows:

```
#Name: Muratcan SARI sNO: 17070001928
Dict = {'Tim': 18, 'Charlie': 22, 'Tiffany': 25, 'Robert': 25}
print("Length : %d" % len(Dict)) #length is 4, there are 4 variables
Dict = {'Tim': 18, 'Charlie': 22, 'Tiffany': 25, 'Robert': 25}
print("variable Type: %s" % type(Dict))

my_dict1 = {"username": "XYZ", "email": "xyz@gmail.com", "location": "Mumbai"}

my_dict2 = {"firstName": "Nick", "lastName": "Price"}

my_dict1.update(my_dict2) #mydict2 merge into mydict1
print(my_dict1)
```

- Run Tool Window:** The Run tool window shows the output of the script:

```
Run: main ×
C:\Users\Muratcan\pexamples\Scripts\python.exe C:/Users/Muratcan/PycharmProjects/pythonProject1/main.py
Length : 4
variable Type: <class 'dict'>
{'username': 'XYZ', 'email': 'xyz@gmail.com', 'location': 'Mumbai', 'firstName': 'Nick', 'lastName': 'Price'}
Process finished with exit code 0
```

- Bottom Status Bar:** PyCharm 2021.2.2 available. Update.

File Edit View Navigate Code Refactor Run Tools VCS Window Help pythonProject1 - main.py

pythonProject1 > main.py

Project main.py

```
1 #Name: Muratcan SARI sNO: 17070001028
2 my_dict = {"Name": [], "Address": [], "Age": []}
3 # we are assigning values into variables.
4 my_dict["Name"].append("Guru")
5 my_dict["Address"].append("Mumbai")
6 my_dict["Age"].append(30)
7 print(my_dict)

8
9 my_dict = {"username": "XYZ", "email": "xyz@gmail.com", "location": "Mumbai"}
10 #we are accessing values.
11 print("username : ", my_dict['username'])
12 print("email : ", my_dict["email"])
13 print("location : ", my_dict["location"])
14 # now we will delete an element and as you can see my_dict cant be printed because it has been deleted.
15 my_dict = {"username": "XYZ", "email": "xyz@gmail.com", "location": "Mumbai"}
16 del my_dict['username'] # it will remove "username": "XYZ" from my_dict
17 print(my_dict)
18 my_dict.clear() # till will make the dictionary empty
19 print(my_dict)
20 del my_dict # this will delete the dictionary
21 print(my_dict)
```

Run: main ×

email : xyz@gmail.com  
location : Mumbai  
{'email': 'xyz@gmail.com', 'location': 'Mumbai'}  
{}  
Traceback (most recent call last):  
 File "C:\Users\Muratcan\PycharmProjects\pythonProject1\main.py", line 21, in <module>  
 print(my\_dict)  
NameError: name 'my\_dict' is not defined

Structure Favorites

PyCharm 2021.2.2 available  
Update...

The screenshot shows the PyCharm IDE interface. The top bar includes File, Edit, View, Navigate, Code, Refactor, Run, Tools, VCS, Window, Help, and a project name pythonProject1 - main.py. The main area has a Project tab and a main.py file tab. The code editor contains the following Python script:

```
#Name: Muratcan SARI sNO: 17070001028
my_dict = {"username": "XYZ", "email": "xyz@gmail.com", "location": "Mumbai"}
my_dict.pop("username") # we are doing popping operation, push-pop operation is similar to stack data structure.
print(my_dict)

my_dict = {"username": "XYZ", "email": "xyz@gmail.com", "location": "Mumbai"}
my_dict['name'] = 'Nick' #we added new variable and its value.
print(my_dict)

my_dict = {"username": "XYZ", "email": "xyz@gmail.com", "location": "Mumbai"}
my_dict["username"] = "ABC" #we change username's value.
print(my_dict)

my_dict = {"username": "XYZ", "email": "xyz@gmail.com", "location": "Washington"}
my_dict1 = {"firstName": "Nick", "lastName": "Price"} # we added some new variables and values. then they became a subset of my_dict1
my_dict["name"] = my_dict1
print(my_dict)
```

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

```
C:\Users\Muratcan\pexamples\Scripts\python.exe C:/Users/Muratcan/PycharmProjects/pythonProject1/main.py
{'email': 'xyz@gmail.com', 'location': 'Mumbai'}
{'username': 'XYZ', 'email': 'xyz@gmail.com', 'location': 'Mumbai', 'name': 'Nick'}
{'username': 'ABC', 'email': 'xyz@gmail.com', 'location': 'Mumbai'}
{'username': 'XYZ', 'email': 'xyz@gmail.com', 'location': 'Washington', 'name': {'firstName': 'Nick', 'lastName': 'Price'}}

Process finished with exit code 0
```

A notification in the bottom right corner indicates "PyCharm 2021.2.2 available" with a "Update..." link.

File Edit View Navigate Code Refactor Run Tools VCS Window Help pythonProject1 - main.py

pythonProject1 > main.py

Project main.py

```
1 #Name: Muratcan SARI sNO: 17070001028
2 x = 4
3 y = 5
4 print(x + y)
5
6 x = 4
7 y = 5
8 print('x > y is', x>y)
9
10 num1 = 4
11 num2 = 5
12 print("Line 1 - Value of num1 : ", num1)
13 print("Line 2 - Value of num2 : ", num2)
14
15 a = True
16 b = False
17 print('a and b is', a and b)
18 print('a or b is', a or b)
19 print('not a is', not a)
```

Run: main

- ('x > y is', False)
- ('Line 1 - Value of num1 : ', 4)
- ('Line 2 - Value of num2 : ', 5)
- ('a and b is', False)
- ('a or b is', True)
- ('not a is', False)

Process finished with exit code 0

PyCharm 2021.2.2 available  
Update...

The screenshot shows the PyCharm IDE interface with a Python project named "pythonProject1". The current file is "main.py". The code in the editor is as follows:

```
#Name: Muratcan SARI sNO: 17070001028
x = 4
y = 8
list = [1, 2, 3, 4, 5];
if (x in list):
    print("Line 1 - x is available in the given list")
else:
    print("Line 1 - x is not available in the given list")
if (y not in list):
    print("Line 2 - y is not available in the given list")
else:
    print("Line 2 - y is available in the given list")

x = 20
y = 20
if (x is y):
    print("x & y SAME identity")
y = 30
if (x is not y):
    print("x & y have DIFFERENT identity")

else : if (x is not y)
```

The "Run" tool window at the bottom shows the output of the script:

```
Run: main
▶ 
('x > y is', False)
('Line 1 - Value of num1 : ', 4)
('Line 2 - Value of num2 : ', 5)
('a and b is', False)
('a or b is', True)
('not a is', False)

Process finished with exit code 0
```

A status bar at the bottom right indicates: "PyCharm 2021.2.2 available" and "Update...".

The screenshot shows the PyCharm IDE interface. The top bar includes the menu: File, Edit, View, Navigate, Code, Refactor, Run, Tools, VCS, Window, Help, and the project name pythonProject1 - main.py. The code editor displays a Python script named main.py with the following content:

```
#Name: Muratcan SARI sNO: 17070001028
import array
balance = array.array('i', [300, 200, 100])
print(balance[1])

import array as myarray
abc = myarray.array('d', [2.5, 4.9, 6.7])
print("Array first element is:" ,abc[0])
print("Array last element is:" ,abc[-1])

import array as myarray
abc= myarray.array('q',[3, 9, 6, 5, 20, 13, 19, 22, 30, 25])
print(abc[1:4])
print(abc[7:10])

import array
balance = array.array('i', [300, 200, 100])
balance.insert(2, 150) # we inserted 150 value inside the position 2, so its position became between 200 and 100
print(balance)
```

The bottom panel shows the 'Run' tab with the configuration: C:\Users\Muratcan\pexamples\Scripts\python.exe C:/Users/Muratcan/PycharmProjects/pythonProject1/main.py. The output window displays the following results:

```
200
Array first element is: 2.5
Array last element is: 6.7
array('q', [9, 6, 5])
array('q', [22, 30, 25])
array('i', [300, 200, 150, 100])

Process finished with exit code 0
```

A notification in the bottom right corner indicates "PyCharm 2021.2.2 available" with a "Update..." link.

File Edit View Navigate Code Refactor Run Tools VCS Window Help pythonProject1 - main.py

pythonProject1 > main.py

Project main.py

```
#Name: Muratcan SARI sNO: 17070001028
import array as myarr
a=myarr.array('b',[2,4,6,8,10,12,14,16,18,20])
a.insert(2,56)
print(a)

import array as myarr
a=myarr.array('b',[3,6,4,8,10,12,14,16,18,20])
a[0]=99
print(a)

import array as myarr
first = myarr.array('b', [4, 6, 8])
second = myarr.array('b', [9, 12, 15])
numbers = myarr.array('b')
numbers = first + second # we are adding 2 arrays.
print(numbers)
```

Run: main

C:\Users\Muratcan\pexamples\Scripts\python.exe C:/Users/Muratcan/PycharmProjects/pythonProject1/main.py

```
array('b', [2, 4, 56, 6, 8, 10, 12, 14, 16, 18, 20])
array('b', [99, 6, 4, 8, 10, 12, 14, 16, 18, 20])
array('b', [4, 6, 8, 9, 12, 15])
```

Process finished with exit code 0

The screenshot shows the PyCharm IDE interface with the following details:

- File Menu:** File, Edit, View, Navigate, Code, Refactor, Run, Tools, VCS, Window, Help.
- Project:** pythonProject1 - main.py
- Code Editor:** The main window displays the file `main.py` with the following content:

```
#Name: Muratcan SARI sNO: 17070001028
import array as myarr
first = myarr.array('b', [20, 25, 30])
first.pop(2) # we are popping 30 value.
print(first)

import array as myarr
no = myarr.array('b', [10, 4, 5, 5, 7])
del no[4] # we are deleting 7 value its similar to the pop operation but we should decide to choose which one for use for scenarios.
print(no)

import array as myarray
first = myarray.array('b', [2, 3, 4])
first.remove(3) # in here we are deleting but not for the position, for the value.
print(first)

import array as myarray
number = myarray.array('b', [2, 3, 4, 5, 6])
print(number.index(3)) # we are printing the index of 3 value.
```
- Run Tab:** Shows the command run: `C:\Users\Muratcan\pexamples\Scripts\python.exe C:/Users/Muratcan/PycharmProjects/pythonProject1/main.py`. The output pane shows:

```
array('b', [20, 25])
array('b', [10, 4, 5, 5])
array('b', [2, 4])
1

Process finished with exit code 0
```
- Bottom Status Bar:** PyCharm 2021.2.2 available

File Edit View Navigate Code Refactor Run Tools VCS Window Help pythonProject1 - main.py

pythonProject1 > main.py

Project: main.py

```
1 #Name: Muratcan SARI sNO: 17070001028
2
3
4 import array as myarray
5 number = myarray.array('b', [1, 2, 3])
6 number.reverse()
7 print(number)
8
9 import array
10 balance = array.array('i', [300, 200, 100])
11 for x in balance:
12     print(x)
13
14
15
```

Run: main

C:\Users\Muratcan\pexamples\Scripts\python.exe C:/Users/Muratcan/PycharmProjects/pythonProject1/main.py

array('b', [3, 2, 1])  
array('b', [3, 2, 1])  
300  
200  
100

Process finished with exit code 0

PyCharm 2021.2.2 available  
Update...

The screenshot shows the PyCharm IDE interface with a Python project named "pythonProject1". The main window displays the file "main.py" containing the following code:

```
#Name: Muratcan SARI sNO: 17070001028
def main():
    x, y = 2, 8
    if (x < y):
        st = "x is less than y"
    print(st)
if __name__ == "__main__":
    main()

def main():
    x, y = 8, 4
    if (x < y):
        st = "x is less than y"
    else:
        st = "x is greater than y"
    print(st)
if __name__ == "__main__":
    main()
```

The code uses two nested definitions of the `main` function. The first version compares `x` (2) and `y` (8), printing "x is less than y". The second version compares `x` (8) and `y` (4), printing "x is greater than y".

In the bottom right corner of the code editor, there are status indicators: 1 warning (yellow triangle), 5 errors (red circles), and 1 error (green circle).

The "Run" tool bar at the bottom shows the command: C:\Users\Muratcan\pexamples\Scripts\python.exe C:/Users/Muratcan/PycharmProjects/pythonProject1/main.py. The output pane shows the results of the run:

```
x is less than y
x is greater than y
Process finished with exit code 0
```

File Edit View Navigate Code Refactor Run Tools VCS Window Help pythonProject1 - main.py

pythonProject1 > main.py

Project main.py

```
#Name: Muratcan SARI sNO: 17070001028
def main():
    x, y = 8, 8
    if (x < y):
        st = "x is less than y"
    else:
        st = "x is greater than y"
    print(st)

if __name__ == "__main__":
    main()

def main():
    x, y = 8, 8
    if (x < y):
        st = "x is less than y"
    else:
        st = "x is greater than y"
    print(st)

if __name__ == "__main__" > if __name__ == "__main__"
```

Run: main

C:\Users\Muratcan\pexamples\Scripts\python.exe C:/Users/Muratcan/PycharmProjects/pythonProject1/main.py

x is greater than y  
x is same as y

Process finished with exit code 0

PyCharm 2021.2.2 available

The screenshot shows the PyCharm IDE interface with a Python project named "pythonProject1". The current file is "main.py". The code implements a shipping cost calculator based on total value and destination country:

```
#Name: Muratcan SARI sNO: 17070001028
total = 100
country = "US"
country = "AU"
if country == "US":
    if total <= 50:
        print("Shipping Cost is $50")
    elif total <= 100:
        print("Shipping Cost is $25")
    elif total <= 150:
        print("Shipping Costs $5")
    else:
        print("FREE")
if country == "AU":
    if total <= 50:
        print("Shipping Cost is $100")
    else:
        print("FREE")
```

The code uses standard Python syntax with if-elif-else conditional statements and print() functions. The PyCharm interface includes a top menu bar, a toolbar with run, debug, and search icons, and several toolbars on the right side. The bottom panel displays the run configuration ("Run: main") and the terminal output, which shows the program's execution and the result "Shipping Cost is \$25".

The screenshot shows the PyCharm IDE interface with the following details:

- File Menu:** File, Edit, View, Navigate, Code, Refactor, Run, Tools, VCS, Window, Help.
- Project:** pythonProject1 - main.py
- Code Editor:** The file main.py contains the following Python code:

```
#Name: Muratcan SARI sNO: 17070001028
x=0
while(x <4):
    print(x)
    x = x+1

x=0
for x in range(2,7):
    print(x)
```
- Run Tab:** Shows the run configuration for "main". The command is C:\Users\Muratcan\pexamples\Scripts\python.exe C:/Users/Muratcan/PycharmProjects/pythonProject1/main.py. The output window displays the following results:

```
0
1
2
3
2
3
4
5
```
- Bottom Status Bar:** PyCharm 2021.2.2 available, Update...

File Edit View Navigate Code Refactor Run Tools VCS Window Help pythonProject1 - main.py

pythonProject1 > main.py

Project: main.py

```
1 #Name: Muratcan SARI sNO: 17070001028
2
3 Months = ["Jan", "Feb", "Mar", "April", "May", "June"]
4 for m in Months:
5     print(m)
6
7 for x in range(10,20):
8     if (x == 15): break
9     #if (x % 2 == 0) : continue
10    print(x)
```

for x in range (10,20)

Run: main

- ▶ main
- ▶ June
- ▶ 10
- ▶ 11
- ▶ 12
- ▶ 13
- ▶ 14

Favorites

Process finished with exit code 0

PyCharm 2021.2.2 available  
Update...

The screenshot shows the PyCharm IDE interface with a Python project named "pythonProject1". The current file is "main.py".

```
#Name: Muratcan SARI sNO: 17070001028
my_list = ['Siya', 'Tiya', 'Guru', 'Daksh', 'Riya', 'Guru']
for i in range(len(my_list)):
    print(my_list[i])
    if my_list[i] == 'Guru':
        print('Found the name Guru')
        break
print('After break| statement')

print('Loop is Terminated')
```

The "Run" tab shows the execution results:

```
for i in range(len(my_list)) > if my_list[i] == 'Guru'
  Siya
  Tiya
  Guru
  Found the name Guru
  Loop is Terminated

Process finished with exit code 0
```

A status bar at the bottom right indicates: "PyCharm 2021.2.2 available" and "Update".

File Edit View Navigate Code Refactor Run Tools VCS Window Help pythonProject1 - main.py

pythonProject1 > main.py

Project main.py

```
1 #Name: Muratcan SARI sNO: 17070001028
2
3 for i in range(4):
4     for j in range(4):
5         if j==2:
6             break
7         print("The number is ", i,j)
8
9 for i in range(10):
10    if i == 7:
11        continue
12    print("The Number is : ", i)
```

Run: main

```
for i in range(10)
The Number is : 1
The Number is : 2
The Number is : 3
The Number is : 4
The Number is : 5
The Number is : 6
The Number is : 8
The Number is : 9

Process finished with exit code 0
```

PyCharm 2021.2.2 available  
Update...

File Edit View Navigate Code Refactor Run Tools VCS Window Help pythonProject1 - main.py

pythonProject1 > main.py

Project: main.py

```
#Name: Muratcan SARI sNO: 17070001028

1 i = 0
2
3 while i <= 10:
4     if i == 7:
5         i += 1
6         continue
7     print("The Number is : ", i)
8     i += 1
9
10
11
12 for i in range(4):
13     for j in range(4):
14         if j==2:
15             continue
16         print("The number is ", i,j)
```

Run: main

```
The number is 1 0
The number is 2 0
The number is 2 1
The number is 2 3
The number is 3 0
The number is 3 1
The number is 3 3
```

Process finished with exit code 0

PyCharm 2021.2.2 available  
Update...

The screenshot shows the PyCharm IDE interface with a Python project named "pythonProject1". The main window displays the code editor for "main.py" with the following content:

```
#Name: Muratcan SARI sNO: 17070001028
def my_func():
    print('pass inside function')
    pass
my_func()

class My_Class:
    print("Inside My_Class")
pass

a=1
if a==1:
    print('pass executed')
    pass
```

The code includes a comment at the top and several print statements. The first print statement is commented out with a hash symbol. The second print statement is inside a function. The third print statement is inside a class definition. The fourth print statement is inside an if block. The fifth print statement is also inside an if block but is commented out.

In the bottom right corner of the code editor, there is a status bar showing code quality metrics: ▲ 4 ✘ 1 ▼.

The "Run" tab in the bottom left shows the command run: C:\Users\Muratcan\pexamples\Scripts\python.exe C:/Users/Muratcan/PycharmProjects/pythonProject1/main.py. The output pane displays the following results:

```
pass inside function
Inside My_Class
pass executed
```

Below the output, a message states "Process finished with exit code 0".

A notification in the bottom right corner informs the user that "PyCharm 2021.2.2 available".

The screenshot shows the PyCharm IDE interface with a dark theme. The top menu bar includes File, Edit, View, Navigate, Code, Refactor, Run, Tools, VCS, Window, Help, and pythonProject1 - main.py. The main editor window displays the following Python code:

```
#Name: Muratcan SARI sNO: 17070001028
class myClass():
    def method1(self):
        print("Guru99")
class childClass(myClass):
    def method2(self):
        print("childClass method2")
def main():
    c2 = childClass()
    c2.method1()
if __name__ == "__main__":
    main()
# Python is an Object Oriented Programming Language so it has class like Java.
```

The status bar at the bottom indicates the run configuration: main, C:\Users\Muratcan\pexamples\Scripts\python.exe C:/Users/Muratcan/PycharmProjects/pythonProject1/main.py. The output pane shows the execution results:

```
pass inside function
Inside My_Class
pass executed
Process finished with exit code 0
```

A notification in the bottom right corner informs the user that "PyCharm 2021.2.2 available" and provides a link to "Update...".

File Edit View Navigate Code Refactor Run Tools VCS Window Help pythonProject1 - main.py

pythonProject1 > main.py

Project main.py

```
1 #Name: Muratcan SARI sNO: 17070001028
2
3 class myClass():
4     def method1(self):
5         print("Guru99")
6
7     def method2(self, someString):
8         print("Software Testing:" + someString)
9
10
11 def main():
12     c = myClass()
13     c.method1()
14     c.method2(" Testing is fun")
15
16
17 if __name__ == "__main__":
18     main()
19
20 else:
21     class myClass():
22         def method1(self):
```

Run: main

C:\Users\Muratcan\pexamples\Scripts\python.exe C:/Users/Muratcan/PycharmProjects/pythonProject1/main.py

Guru99

Software Testing: Testing is fun

Guru99

Process finished with exit code 0

PyCharm 2021.2.2 available

File Edit View Navigate Code Refactor Run Tools VCS Window Help pythonProject1 - main.py

pythonProject1 > main.py

Project main.py

```
1 #Name: Muratcan SARI sNO: 17070001028
2 var1 = "Guru99"
3 var2 = "Software Testing"
4 print("var1[0]:" ,var1[0])
5 print("var2[1:5]:" ,var2[1:5])
6
7 x = "Hello World!"
8 print(x[:6])
9 print(x[0:6] + "Guru99")
10
11 oldstring = 'I like Guru99'
12 newstring = oldstring.replace('like', 'love')
13 print(newstring)
14
15 string="python at guru99"
16 print(string.upper())
17
18 word="guru99 career guru99"
19 print(word.split(' '))
20
```

Run: main ×

var1[0]: G
var2[1:5]: oftw
Hello
Hello Guru99
I love Guru99
PYTHON AT GURU99
['guru99', 'career', 'guru99']

Process finished with exit code 0

PyCharm 2021.2.2 available  
Update...

The screenshot shows the PyCharm IDE interface. The top menu bar includes File, Edit, View, Navigate, Code, Refactor, Run, Tools, VCS, Window, Help, and pythonProject1 - main.py. The left sidebar has a Project view with a main.py file selected. The main code editor area contains the following Python script:

```
6 after_strip = str1.strip()
7
8 str1 = "Welcome to Guru99!"
9 after_strip = str1.strip()
10 print(after_strip)
11
12 str2 = "Welcome to Guru99!"
13 after_strip1 = str2.strip()
14 print(after_strip1)
15
16 str1 = "****Welcome to Guru99!****"
17 after_strip = str1.strip("*")
18 print(after_strip)
19
20 str2 = "Welcome to Guru99!"
21 after_strip1 = str2.strip("99!")
22 print(after_strip1)
23 str3 = "Welcome to Guru99!"
24 after_strip3 = str3.strip("to")
25 print(after_strip3)
```

The bottom panel shows the Run tool window with the configuration "main" and the command "C:\Users\Muratcan\pexamples\Scripts\python.exe C:/Users/Muratcan/PycharmProjects/pythonProject1/main.py". The output pane displays the following results:

```
Welcome to Guru99!
Welcome to Guru99!
Welcome to Guru99!
Welcome to Guru
Welcome to Guru99!
```

At the bottom, it says "Process finished with exit code 0". A notification in the bottom right corner indicates "PyCharm 2021.2.2 available" with a "Update..." link.

The screenshot shows the PyCharm IDE interface. The top menu bar includes File, Edit, View, Navigate, Code, Refactor, Run, Tools, VCS, Window, Help, and pythonProject1 - main.py. The left sidebar has a 'Project' tab selected, showing a file tree with 'main.py'. The main code editor window displays the following Python script:

```
#Name: Muratcan SARI sNO: 17070001028
str1 = "Hello World"
str_count1 = str1.count('o')
print("The count of 'o' is", str_count1)

str_count2 = str1.count('o', 0, 5)
print("The count of 'o' using start/end is", str_count2)

str1 = "Welcome to Guru99 Tutorials!"
str_count1 = str1.count('u')
print("The count of 'u' is", str_count1)

str_count2 = str1.count('u', 6, 15)
print("The count of 'u' using start/end is", str_count2)

str1 = "Welcome to Guru99 - Free Training Tutorials and Videos for IT Courses"
str_count1 = str1.count('to')
print("The count of 'to' is", str_count1)
str_count2 = str1.count('to', 6, 15)
print("The count of 'to' using start/end is", str_count2)
```

The 'Run' tool window at the bottom shows the output of the script execution:

```
Run: main ×
C:\Users\Muratcan\pexamples\Scripts\python.exe C:/Users/Muratcan/PycharmProjects/pythonProject1/main.py
The count of 'o' is 2
The count of 'o' using start/end is 1
The count of 'u' is 3
The count of 'u' using start/end is 2
The count of 'to' is 2
The count of 'to' using start/end is 1

Process finished with exit code 0
```

A notification in the bottom right corner indicates "PyCharm 2021.2.2 available" with a "Update..." link.

File Edit View Navigate Code Refactor Run Tools VCS Window Help pythonProject1 - main.py

pythonProject1 > main.py

Project main.py

```
#Name: Muratcan SARI sNO: 17070001028
class MyClass:
    msg1="Guru"
    msg2="Tutorials"
print("Welcome to {c.msg1}99 {c.msg2}!".format(c=MyClass()))
my_dict = {'msg1': "Welcome", 'msg2': 'Guru99'}
print("{m[msg1]} to {m[msg2]} Tutorials!".format(m=my_dict))

print("I have {:5} dogs and {:5} cat".format(2,1))
print("I have {0:5} dogs and {1:5} cat".format(2,1))
|
```

Run: main

C:\Users\Muratcan\pexamples\Scripts\python.exe C:/Users/Muratcan/PycharmProjects/pythonProject1/main.py

The count of 'o' is 2  
The count of 'o' using start/end is 1  
The count of 'u' is 3  
The count of 'u' using start/end is 2  
The count of 'to' is 2  
The count of 'to' using start/end is 1

Process finished with exit code 0

PyCharm 2021.2.2 available  
[Update...](#)

The screenshot shows the PyCharm IDE interface. At the top, the menu bar includes File, Edit, View, Navigate, Code, Refactor, Run, Tools, VCS, Window, Help, and the current project name "pythonProject1 - main.py". Below the menu is a toolbar with icons for Run, Stop, and other functions. The main area is divided into two panes: the left pane shows the "Project" structure with "main.py" selected, and the right pane displays the code content.

**Code Content (main.py):**

```
1 #Name: Muratcan SARI sNO: 17070001028
2 str1 = "Welcome to Guru99 Python Tutorials"
3 print("The length of the string is : ", len(str1))
4
5 list1 = ["Tim", "Charlie", "Tiffany", "Robert"]
6 print("The length of the list is ", len(list1))
7
8 Tup = ('Jan', 'feb', 'march')
9 print("The length of the tuple is ", len(Tup))
10
11 Dict = {'Tim': 18, 'Charlie': 12, 'Tiffany': 22, 'Robert': 25}
12 print("The length of the Dictionary is ", len(Dict))
13
```

**Run Tab Output:**

```
Run: main ×
C:\Users\Muratcan\pexamples\Scripts\python.exe C:/Users/Muratcan/PycharmProjects/pythonProject1/main.py
The length of the string is : 35
The length of the list is 4
The length of the tuple is 3
The length of the Dictionary is 4
Process finished with exit code 0
```

In the bottom right corner, there is a message: "PyCharm 2021.2.2 available".

The screenshot shows the PyCharm IDE interface with the following details:

- Top Bar:** File, Edit, View, Navigate, Code, Refactor, Run, Tools, VCS, Window, Help, pythonProject1 - main.py
- Project Bar:** pythonProject1 > main.py
- Code Editor:** The file main.py contains Python code demonstrating string search methods. The code is as follows:

```
mystring = "Meet Guru99 Tutorials Site.Best site for Python Tutorials!"
print("The position of Tutorials is at:", mystring.find("Tutorials"))

mystring = "Meet Guru99 Tutorials Site.Best site for Python Tutorials!"
print("The position of Tutorials is at:", mystring.find("Tutorials", 20))

mystring = "Meet Guru99 Tutorials Site.Best site for Python Tutorials!"
print("The position of Tutorials is at:", mystring.find("Tutorials", 5, 30))

mystring = "Meet Guru99 Tutorials Site.Best site for Python Tutorials!"
print("The position of Best site is at:", mystring.find("Best site", 5, 40))
print("The position of Guru99 is at:", mystring.find("Guru99", 20))

mystring = "Meet Guru99 Tutorials Site.Best site for Python Tutorials!"
print("The position of Tutorials using find() : ", mystring.find("Tutorials"))
print("The position of Tutorials using rfind() : ", mystring.rfind("Tutorials"))

mystring = "Meet Guru99 Tutorials Site.Best site for Python Tutorials!"
print("The position of Tutorials using find() : ", mystring.find("Tutorials"))
print("The position of Tutorials using index() : ", mystring.index("Tutorials"))
```

- Run Tab:** Shows the output of the run command, which includes the results of the print statements from the code.
- Bottom Status Bar:** PyCharm 2021.2.2 available, Update...

The screenshot shows the PyCharm IDE interface with the following details:

- File Menu:** File, Edit, View, Navigate, Code, Refactor, Run, Tools, VCS, Window, Help.
- Project Bar:** pythonProject1 > main.py
- Code Editor:** The main.py file contains the following Python code:

```
#Name: Muratcan SARI sNO: 17070001028
def main():
    print("hello world!")
if __name__ == "__main__":
    main()
print("Guru99")
print("Value in built variable name is: __name__")
```
- Run Tab:** Shows the output of the run command: C:\Users\Muratcan\pexamples\Scripts\python.exe C:/Users/Muratcan/PycharmProjects/pythonProject1/main.py. The output is:

```
hello world!
Guru99
Value in built variable name is: __main__
Process finished with exit code 0
```

File Edit View Navigate Code Refactor Run Tools VCS Window Help pythonProject1 - main.py

pythonProject1 > main.py

Project: main.py

```
1 #Name: Muratcan SARI sNo: 17070001028
2 import random
3 def truncate(num):
4     return int(num * 1000) / 1000
5
6 arr = [random.uniform(0.01, 0.05) for _ in range(1000000)]
7 sum_num = 0
8 sum_truncate = 0
9 for i in arr:
10     sum_num = sum_num + i
11     sum_truncate = truncate(sum_truncate + i)
12
13 print("Testing by using truncating upto 3 decimal places")
14 print("The original sum is = ", sum_num)
15 print("The total using truncate = ", sum_truncate)
16 print("The difference from original - truncate = ", sum_num - sum_truncate)
17 print("\n\n")
18 print("Testing by using round() upto 3 decimal places")
19 sum_num1 = 0
20 sum_truncate1 = 0
21 for i in arr:
22     for i in arr:
```

Run: main

Structure

Favorites

```
Testing by using round() upto 3 decimal places
The original sum is = 30010.20766013114
The total using round = 30010.202
The difference from original - round = 0.005660131137119606

Process finished with exit code 0
```

PyCharm 2021.2.2 available  
Update...

The screenshot shows the PyCharm IDE interface with the following details:

- Top Bar:** File, Edit, View, Navigate, Code, Refactor, Run, Tools, VCS, Window, Help, pythonProject1 - main.py
- Project Bar:** pythonProject1 > main.py
- Code Editor:** The file main.py contains Python code. The code prints rounded values of four floats and two integers. It includes comments at the top and prints the rounded values of float\_num1, float\_num2, float\_num3, and float\_num4 both with and without specifying the number of decimal places.
- Run Tab:** Shows the output of the run command. The output is:

```
The rounded value without num_of_decimals is : 11
The rounded value without num_of_decimals is : 10
The rounded value with num_of_decimals as 2 is : 10.35
The rounded value with num_of_decimals as 2 is : 10.34
The value after rounding is -3
The value after rounding is -2

Process finished with exit code 0
```
- Bottom Right:** A notification for PyCharm 2021.2.2 available with an Update... button.

File Edit View Navigate Code Refactor Run Tools VCS Window Help pythonProject1 - main.py

pythonProject1 > main.py

Project main.py

```
1 #Name: Muratcan SARI sNO: 17070001028
2
3
4 import array as myarray
5 number = myarray.array('b', [1, 2, 3])
6 number.reverse()
7 print(number)
8
9 import array
10 balance = array.array('i', [300, 200, 100])
11 for x in balance:
12     print(x)
13
14
15
```

Run: main

C:\Users\Muratcan\pexamples\Scripts\python.exe C:/Users/Muratcan/PycharmProjects/pythonProject1/main.py

array('b', [3, 2, 1])  
array('b', [3, 2, 1])  
300  
200  
100

Process finished with exit code 0

PyCharm 2021.2.2 available

The screenshot shows the PyCharm IDE interface with a Python project named "pythonProject1". The main editor window displays "main.py" containing code that demonstrates various rounding methods for the `Decimal` class from the `decimal` module. The code defines a variable `round\_num` and then calculates seven different rounded values using various rounding modes: CEILING, DOWN, FLOOR, HALF\_DOWN, HALF\_EVEN, HALF\_UP, and UP. The output of the code is shown in the "Run" tool window, where each method is printed along with its result. The PyCharm status bar at the bottom right indicates that "PyCharm 2021.2.2 available" and provides an "Update..." link.

```
#Name: Muratcan SARI sNO: 17070001028
import decimal
round_num = 15.456
final_val = round(round_num, 2)
final_val1 = decimal.Decimal(round_num).quantize(decimal.Decimal('0.00'), rounding=decimal.ROUND_CEILING)
final_val2 = decimal.Decimal(round_num).quantize(decimal.Decimal('0.00'), rounding=decimal.ROUND_DOWN)
final_val3 = decimal.Decimal(round_num).quantize(decimal.Decimal('0.00'), rounding=decimal.ROUND_FLOOR)
final_val4 = decimal.Decimal(round_num).quantize(decimal.Decimal('0.00'), rounding=decimal.ROUND_HALF_DOWN)
final_val5 = decimal.Decimal(round_num).quantize(decimal.Decimal('0.00'), rounding=decimal.ROUND_HALF_EVEN)
final_val6 = decimal.Decimal(round_num).quantize(decimal.Decimal('0.00'), rounding=decimal.ROUND_HALF_UP)
final_val7 = decimal.Decimal(round_num).quantize(decimal.Decimal('0.00'), rounding=decimal.ROUND_UP)
print("Using round()", final_val)
print("Using Decimal - ROUND_CEILING ", final_val1)
print("Using Decimal - ROUND_DOWN ", final_val2)
print("Using Decimal - ROUND_FLOOR ", final_val3)
print("Using Decimal - ROUND_HALF_DOWN ", final_val4)
print("Using Decimal - ROUND_HALF_EVEN ", final_val5)
print("Using Decimal - ROUND_HALF_UP ", final_val6)
print("Using Decimal - ROUND_UP ", final_val7)
```

Run: main ×

C:\Users\Muratcan\pexamples\Scripts\python.exe C:/Users/Muratcan/PycharmProjects/pythonProject1/main.py

Using round() 15.46

Using Decimal - ROUND\_CEILING 15.46

Using Decimal - ROUND\_DOWN 15.45

Using Decimal - ROUND\_FLOOR 15.45

Using Decimal - ROUND\_HALF\_DOWN 15.46

Using Decimal - ROUND\_HALF\_EVEN 15.46

Using Decimal - ROUND\_HALF\_UP 15.46

Using Decimal - ROUND\_UP 15.46

PyCharm 2021.2.2 available  
Update...

File Edit View Navigate Code Refactor Run Tools VCS Window Help pythonProject1 - main.py

pythonProject1 > main.py

Project main.py

```
1 #Name: Muratcan SARI sNO: 17070001028
2 def square(n):
3     return n*n
4 my_list = [2, 3, 4, 5, 6, 7, 8, 9]
5 updated_list = map(square, my_list)
6 print(updated_list)
7 print(list(updated_list))
8
9 my_list = [2.6743, 3.63526, 4.2325, 5.9687967, 6.3265, 7.6988, 8.232, 9.6907]
10 updated_list = map(round, my_list)
11 print(updated_list)
12 print(list(updated_list))
13
14 def myMapFunc(s):
15     return s.upper()
16 my_str = "welcome to guru99 tutorials!"
17 updated_list = map(myMapFunc, my_str)
18 print(updated_list)
19 for i in updated_list:
20     print(i, end="")
21
for i in updated_list
```

Run: main

- C:\Users\Muratcan\pexamples\Scripts\python.exe C:/Users/Muratcan/PycharmProjects/pythonProject1/main.py

<map object at 0x000001F7F1EF6FA0>  
[4, 9, 16, 25, 36, 49, 64, 81]  
<map object at 0x000001F7F1EF6EB0>  
[3, 4, 4, 6, 6, 8, 8, 10]  
<map object at 0x000001F7F1EF6FD0>  
WELCOME TO GURU99 TUTORIALS!  
Process finished with exit code 0

PyCharm 2021.2.2 available  
Update

The screenshot shows the PyCharm IDE interface with the following details:

- File Menu:** File, Edit, View, Navigate, Code, Refactor, Run, Tools, VCS, Window, Help.
- Project:** pythonProject1 > main.py
- Code Editor:** The main window displays the content of `main.py`. The code defines three functions: `myMapFunc` for lists, tuples, and sets, each returning a modified version of the input sequence.
- Run Tab:** Shows the output of running the script. It prints three map objects and their corresponding lists:
  - <map object at 0x000002827D8E6FA0>  
[20, 30, 40, 50, 60, 70, 80, 90]
  - <map object at 0x000002827D8E6E20>  
['PHP', 'JAVA', 'PYTHON', 'C++', 'C']
  - <map object at 0x000002827D8E6FA0>  
[20, 30, 40, 50, 60, 70, 80, 90]
- Bottom Status Bar:** PyCharm 2021.2.2 available, Update... button.

```
#Name: Muratcan SARI sNO: 17070001028
def myMapFunc(n):
    return n*10

my_list = [2, 3, 4, 5, 6, 7, 8, 9]

updated_list = map(myMapFunc, my_list)
print(updated_list)
print(list(updated_list))

def myMapFunc(n):
    return n.upper()
my_tuple = ('php', 'java', 'python', 'c++', 'c')
updated_list = map(myMapFunc, my_tuple)
print(updated_list)
print(list(updated_list))

def myMapFunc(n):
    return n*10
my_set = {2, 3, 4, 5, 6, 7, 8, 9}
finalitems = map(myMapFunc, my_set)
```

File Edit View Navigate Code Refactor Run Tools VCS Window Help pythonProject1 - main.py

pythonProject1 > main.py

Project main.py

```
#Name: Muratcan SARI sNO: 17070001028
def myMapFunc(list1, list2):
    return list1+list2
my_list1 = [2, 3, 4, 5, 6, 7, 8, 9]
my_list2 = [4, 8, 12, 16, 20, 24, 28]
updated_list = map(myMapFunc, my_list1, my_list2)
print(updated_list)
print(list(updated_list))

def myMapFunc(list1, tuple1):
    return list1+"_"+tuple1
my_list = ['a', 'b', 'c', 'd', 'e']
my_tuple = ('PHP', 'Java', 'Python', 'C++', 'C')
updated_list = map(myMapFunc, my_list, my_tuple)
print(updated_list)
print(list(updated_list))
```

Run: main

C:\Users\Muratcan\pexamples\Scripts\python.exe C:/Users/Muratcan/PycharmProjects/pythonProject1/main.py

<map object at 0x000001795A576F70>

[6, 11, 16, 21, 26, 31, 36]

<map object at 0x000001795A576E20>

['a\_PHP', 'b\_Java', 'c\_Python', 'd\_C++', 'e\_C']

Process finished with exit code 0

PyCharm 2021.2.2 available

The screenshot shows the PyCharm IDE interface. The top menu bar includes File, Edit, View, Navigate, Code, Refactor, Run, Tools, VCS, Window, Help, and pythonProject1 - main.py. The left sidebar has a Project view with 'main.py' selected. The main code editor window displays the following Python script:

```
1 #Name: Muratcan SARI sNO: 17070001028
2 ##timeID should be repeated, its not clear!
3
4 import timeit
5 print("The time taken is ", timeit.timeit(stmt='a=10;b=10;sum=a+b'))
6
7 import timeit
8 import_module = "import random"
9 testcode = ''
10 def test():
11     return random.randint(10, 100)
12 ...
13 print(timeit.timeit(stmt=testcode, setup=import_module))
14
```

The bottom panel shows the Run tool window with the following output:

```
Run: main x
C:\Users\Muratcan\pexamples\Scripts\python.exe C:/Users/Muratcan/PycharmProjects/pythonProject1/main.py
The time taken is  0.11824840000000003
0.2047384999999993

Process finished with exit code 0
```

A status bar at the bottom right indicates "PyCharm 2021.2.2 available" with a "Update..." link.

The screenshot shows the PyCharm IDE interface with the following details:

- File Menu:** File, Edit, View, Navigate, Code, Refactor, Run, Tools, VCS, Window, Help.
- Project:** pythonProject1 - main.py
- Code Editor:** The main editor window displays the following Python code:

```
1 #Name: Muratcan SARI sNO: 17070001028
2 def testyield():
3     yield "bla bla bla"
4     output = testyield()
5     print(output)
6
7 def testyield():
8     yield "bla bla bla 2"
9
10 output = testyield()
11 for i in output:
12     print(i)
13     def generator():
14         yield "H"
15         yield "E"
16         yield "L"
17         yield "L"
18         yield "O"
19     test = generator()
20     for i in test:
21         print(i)
22
23 for i in output
```
- Run Tab:** Shows the run configuration for "main". The output pane displays the following:

```
C:\Users\Muratcan\pexamples\Scripts\python.exe C:/Users/Muratcan/PycharmProjects/pythonProject1/main.py
<generator object testyield at 0x0000024F4F23BCF0>
bla bla bla 2
H
E
L
L
O
```
- Bottom Status Bar:** PyCharm 2021.2.2 available, Update...

The screenshot shows the PyCharm IDE interface with a dark theme. The top menu bar includes File, Edit, View, Navigate, Code, Refactor, Run, Tools, VCS, Window, Help, and pythonProject1 - main.py. The left sidebar has a Project view showing 'main.py' and a Structure view. The main code editor window displays the following Python script:

```
#Name: Muratcan SARI sNO: 17070001028
def normal_test():
    return "Hello World"
def generator_test():
    yield "Hello World"

print(normal_test())
print(generator_test())
def even_numbers(n):
    for x in range(n):
        if (x%2==0):
            yield x
num = even_numbers(10)
for i in num:
    print(i)
```

The Run tab at the bottom shows the output of running 'main.py':

```
C:\Users\Muratcan\pexamples\Scripts\python.exe C:/Users/Muratcan/PycharmProjects/pythonProject1/main.py
Hello World
<generator object generator_test at 0x000001C454BEBCF0>
0
2
4
6
8
```

A notification in the bottom right corner indicates 'PyCharm 2021.2.2 available' with a 'Update...' button.

The screenshot shows the PyCharm IDE interface with a dark theme. The top menu bar includes File, Edit, View, Navigate, Code, Refactor, Run, Tools, VCS, Window, Help, and pythonProject1 - main.py. The left sidebar has a Project view showing 'main.py' and a Favorites section. The main code editor window displays the following Python script:

```
1 # Name: Muratcan SARI sNO: 17070001028
2 # generators for one-time use and fibonacci example should be repeated in the future.
3 def even_numbers(n):
4     for x in range(n):
5         if (x%2==0):
6             yield x
7 num = even_numbers(10)
8 for i in num:
9     print(i)
10 print("\n")
11 print("calling again: ", list(num))
12
13 def getFibonacciSeries(num):
14     c1, c2 = 0, 1
15     count = 0
16     while count < num:
17         yield c1
18         c3 = c1 + c2
19         c1 = c2
20         c2 = c3
21         count += 1
```

The Run tab at the bottom shows the output of the 'main' run configuration:

```
Run: main ×
2
4
6
8
calling again: []
<generator object getFibonacciSeries at 0x0000021540A8BC10>
0
```

A status bar at the bottom right indicates "PyCharm 2021.2.2 available" with a "Update..." link.

The screenshot shows the PyCharm IDE interface. The top menu bar includes File, Edit, View, Navigate, Code, Refactor, Run, Tools, VCS, Window, Help, and pythonProject1 - main.py. The left sidebar has a Project view showing 'main.py' and a Structure view. The main code editor window displays the following Python script:

```
1 #Name: Muratcan SARI sNO: 17070001028
2 #its the queue data structure
3 import queue
4 q1 = queue.Queue(5)
5 q1.put(1)
6 q1.put(2)
7 q1.put(3)
8 q1.put(4)
9 q1.put(5)
10 print(q1.full())
11
12 import queue
13 q1 = queue.Queue()
14 q1.put(10)
15 item1 = q1.get()
16 print('The item removed from the queue is ', item1)
17
18 import queue
19 q1 = queue.LifoQueue()
20 q1.put(10)
21 item1 = q1.get()
```

The Run tab at the bottom shows the command: C:/Users/Muratcan/pexamples/Scripts/python.exe C:/Users/Muratcan/PycharmProjects/pythonProject1/main.py. The output pane displays:

```
Run: main ×
C:/Users/Muratcan/pexamples/Scripts/python.exe C:/Users/Muratcan/PycharmProjects/pythonProject1/main.py
True
The item removed from the queue is  10
The item removed from the LIFO queue is  10
Process finished with exit code 0
```

A status bar at the bottom right indicates "PyCharm 2021.2.2 available" with a "Update..." link.

The screenshot shows the PyCharm IDE interface with a Python project named "pythonProject1". The current file is "main.py". The code implements a bubble sort algorithm on a queue (list) of integers.

```
#Name: Muratcan SARI sNO: 17070001028
import queue
q1 = queue.Queue()
q1.put(11)
q1.put(5)
q1.put(4)
q1.put(21)
q1.put(3)
q1.put(10)

n = q1.qsize()
for i in range(n):
    x = q1.get()
    for j in range(n-1):
        y = q1.get()
        if x > y:
            q1.put(y)
        else:
            q1.put(x)
        x = y
    q1.put(x)

while (q1.empty() == False)
```

The "Run" tab shows the output of the script:

```
C:\Users\Muratcan\pexamples\Scripts\python.exe C:/Users/Muratcan/PycharmProjects/pythonProject1/main.py
3 4 5 10 11 21
Process finished with exit code 0
```

A notification at the bottom right indicates "PyCharm 2021.2.2 available" with a "Update..." link.

File Edit View Navigate Code Refactor Run Tools VCS Window Help pythonProject1 - main.py

pythonProject1 > main.py

Project main.py

```
#Name: Muratcan SARI sNO: 17070001028
import queue
q1 = queue.Queue()

q1.put(11)
q1.put(5)
q1.put(4)
q1.put(21)
q1.put(3)
q1.put(10)

def reverseQueue (q1src, q2dest) :
    buffer = q1src.get()
    if (q1src.empty() == False) :
        reverseQueue(q1src, q2dest)
        q2dest.put(buffer)
    return q2dest

q2dest = queue.Queue()
qReversed = reverseQueue(q1, q2dest)

reverseQueue()
```

Run: main

C:\Users\Muratcan\pexamples\Scripts\python.exe C:/Users/Muratcan/PycharmProjects/pythonProject1/main.py

10 3 21 4 5 11

Process finished with exit code 0

File Edit View Navigate Code Refactor Run Tools VCS Window Help pythonProject1 - main.py

pythonProject1 > main.py

Project: main.py

```
1 #Name: Muratcan SARI sNo: 17070001028
2 from collections import Counter
3 counter1 = Counter({'x': 4, 'y': 2, 'z': -2})
4 counter2 = Counter({'x1': -12, 'y': 5, 'z': 4})
5 counter3 = counter1 + counter2 # only the values that are positive will be returned.
6 print(counter3)
7
8 counter4 = counter1 - counter2
9 print(counter4)
10
11 counter5 = counter1 & counter2
12 print(counter5)
13
14 counter6 = counter1 | counter2
15 print(counter6)
```

Run: main

C:\Users\Muratcan\pexamples\Scripts\python.exe C:/Users/Muratcan/PycharmProjects/pythonProject1/main.py

```
Counter({'y': 7, 'x': 4, 'z': 2})
Counter({'x1': 12, 'x': 4})
Counter({'y': 2})
Counter({'y': 5, 'x': 4, 'z': 4})
```

Process finished with exit code 0

PyCharm 2021.2.2 available  
Update...

File Edit View Navigate Code Refactor Run Tools VCS Window Help pythonProject1 - main.py

pythonProject1 > main.py

Project main.py

```
1 #Name: Muratcan SARI sNO: 17070001028
2 from collections import Counter
3 counter1 = Counter({'x': 5, 'y': 12, 'z': -2, 'x1': 0})
4 common_element = counter1.most_common(2)
5 print(common_element)
6 common_element1 = counter1.most_common()
7 print(common_element1)
8
9 from collections import Counter
10 counter1 = Counter({'x': 5, 'y': 12, 'z': -2, 'x1': 0})
11 counter2 = Counter({'x': 2, 'y': 5})
12 counter1.subtract(counter2)
13 print(counter1)
14
15 from collections import Counter
16 counter1 = Counter({'x': 5, 'y': 12, 'z': -2, 'x1': 0})
17 counter2 = Counter({'x': 2, 'y': 5})
18 counter1.update(counter2)
19 print(counter1)
```

Run: main

C:\Users\Muratcan\pexamples\Scripts\python.exe C:/Users/Muratcan/PycharmProjects/pythonProject1/main.py

[('y', 12), ('x', 5)]  
[('y', 12), ('x', 5), ('x1', 0), ('z', -2)]  
Counter({'y': 7, 'x': 3, 'x1': 0, 'z': -2})  
Counter({'y': 17, 'x': 7, 'x1': 0, 'z': -2})

Process finished with exit code 0

PyCharm 2021.2.2 available

The screenshot shows the PyCharm IDE interface. The top bar includes the menu: File, Edit, View, Navigate, Code, Refactor, Run, Tools, VCS, Window, Help, and the current project name "pythonProject1 - main.py". The status bar at the bottom right indicates "PyCharm 2021.2.2 available".

**Code Editor:**

```
#Name: Muratcan SARI sNO: 17070001028
mylist = ['A', 'B', 'C', 'D']
e_list = enumerate(mylist, 2)
print(list(e_list))

mylist = ['A', 'B', 'C', 'D']

for i in enumerate(mylist):
    print(i)
    print("\n")

print("Using startIndex as 10")

for i in enumerate(mylist, 10):
    print(i)
    print("\n")
```

**Run Tool Window:**

Run: main

Index	Value
10	'A'
11	'B'
12	'C'

File Edit View Navigate Code Refactor Run Tools VCS Window Help pythonProject1 - main.py

pythonProject1 > main.py

Project main.py

```
1 #Name: Muratcan SARI sNO: 17070001028
2
3 # this topic is similar to Operating System system call wait function.
4 import time
5 print("bla bla bla")
6 time.sleep(5)
7 print("message will be print after 5 seconds")
8
9 import time
10 print('Code Execution Started')
11 def display():
12     print('i like metallica')
13     time.sleep(5)
14     display()
15     print('execution delayed')
16
17 import time
18 my_message = "xyz"
19 for i in my_message:
20     print(i)
21     time.sleep(1)
```

Run: main

```
C:\Users\Muratcan\pexamples\Scripts\python.exe C:/Users/Muratcan/PycharmProjects/pythonProject1/main.py
bla bla bla
message will be print after 5 seconds
Code Execution Started
i like metallica
```

PyCharm 2021.2.2 available

File Edit View Navigate Code Refactor Run Tools VCS Window Help pythonProject1 - main.py

pythonProject1 > main.py

Project main.py

```
1 #Name: Muratcan SARI sNO: 17070001028
2 str_list = "dadfasfas"
3 age = 50
4 pi = 3.14
5 c_num = 3j+10
6 my_list = ["A", "B", "C", "D"]
7 my_tuple = ("A", "B", "C", "D")
8 my_dict = {"A": "a", "B": "b", "C": "c", "D": "d"}
9 my_set = {'A', 'B', 'C', 'D'}
10 print("The type is : ", type(str_list))
11 print("The type is : ", type(age))
12 print("The type is : ", type(pi))
13 print("The type is : ", type(c_num))
14 print("The type is : ", type(my_list))
15 print("The type is : ", type(my_tuple))
16 print("The type is : ", type(my_dict))
17 print("The type is : ", type(my_set))
```

Run: main ×

The type is : <class 'float'>
The type is : <class 'complex'>
The type is : <class 'list'>
The type is : <class 'tuple'>
The type is : <class 'dict'>
The type is : <class 'set'>

Process finished with exit code 0

PyCharm 2021.2.2 available  
Update...

File Edit View Navigate Code Refactor Run Tools VCS Window Help pythonProject1 - main.py

pythonProject1 > main.py

Project: main.py

```
1 #Name: Muratcan SARI sNO: 17070001028
2 def main():
3     f= open("guru99.txt","w+")
4     #f=open("guru99.txt","a+")
5     for i in range(10):
6         f.write("This is line %d\r\n" % (i+1))
7     f.close()
8     #Open the file back and read the contents
9     #f=open("guru99.txt", "r")
10    #if f.mode == 'r':
11    #    contents =f.read()
12    #    print (contents)
13    #or, readlines reads the individual line into a list
14    #fl =f.readlines()
15    #for x in fl:
16    #    print(x)
17    if __name__ == "__main__":
18        main()

if __name__ == "__main__":

```

Run: main ×

C:\Users\Muratcan\pexamples\Scripts\python.exe C:/Users/Muratcan/PycharmProjects/pythonProject1/main.py

Process finished with exit code 0

Favorites Structure

i PyCharm 2021.2.2 available  
Update...