**Lab**

**Create Package**

* On the window to the right, click on the **View** menu and select **Explorer** option, as shown in the image below.

Graphical user interface, application

Description automatically generated

* Your IDE now should look like the image below.

Graphical user interface

Description automatically generated

* On the window to the right, click on the **File** menu and select **New Folder** option, as shown in the image below.

Graphical user interface

Description automatically generated

* Enter **mymath** and click OK as shown in the image below.

Background pattern

Description automatically generated

**Create the first module**

* Create a python module named basic

Create a file named **basic.py**.

Copy and paste the below code into basic.py

**def** **square**(number):

"""

This function returns the square of a given number

"""

**return** number \*\* 2

**def** **double**(number):

"""

This function returns twice the value of a given number

"""

**return** number \* 2

**def** **add**(a, b):

"""

This function returns the sum of given numbers

"""

**return** a + b

You should see a screen like this now. Text

Description automatically generated

Save the file **basic.py**

**Create the second module**

* Create a module named stats

Create a file named **stats.py**.

Copy and paste the below code into stats.py

**def** **mean**(numbers):

"""

This function returns the mean of the given list of numbers

"""

**return** sum(numbers)/len(numbers)

**def** **median**(numbers):

"""

This function returns median of the given list of numbers

"""

numbers.sort()

**if** len(numbers) % 2 == 0:

median1 = numbers[len(numbers) // 2]

median2 = numbers[len(numbers) // 2 - 1]

mymedian = (median1 + median2) / 2

**else**:

mymedian = numbers[len(numbers) // 2]

**return** mymedian

You should see a screen like this now. Text

Description automatically generated

Save the file **stats.py**

**Create init.py**

* Create the file \_\_init\_\_.py

Copy and paste the below code into \_\_init\_\_.py

**from** . **import** basic

**from** . **import** stats

Save the file \_\_init\_\_.py

Now your directory structure should look like

mymath

mymath/**\_\_init\_\_**.py

mymath/basic.py

mymath/statistics.py

Graphical user interface, text, application

Description automatically generated

You are done creating a package

**Verify the package**

* On the window to the right, click on the **Terminal** menu and select **New Terminal** option, as shown in the image below.
* You will see a terminal open up on the bottom of the screen like the one in the image below.

Graphical user interface, text, website

Description automatically generated

* At the terminal type **python3** to invoke python interpreter.
* Once the python interpreter is loaded.
* At the python prompt type **import mymath**
* If the above command runs without errors, it is an indication that the mymath package is successfully loaded.
* At the python prompt type **mymath.basic.add(3,4)**
* You should see an output *7* on the screen.
* At the python prompt type **mymath.stats.mean([3,4,5])**
* You should see an output *4.0* on the screen.
* Type **exit()** to quit python interpreter.

Text

Description automatically generated

# Practice Exercise

### Create a new module named geometry and add to the mymath package.

* Create a module name geometry
* Add a function named area\_of\_rectangle that takes length and breadth as input and returns the area of a rectangle.
* Add a function named area\_of\_circle that takes radius as input and returns the area of a circle.
* Modify the \_\_init\_\_.py to include this module.
* Import and test the function area\_of\_circle from python terminal.

## Authors

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### Other Contributors

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## Change Log

| **Date (YYYY-MM-DD)** | **Version** | **Changed By** | **Change Description** |
| --- | --- | --- | --- |
| 2020-11-25 | 0.1 | Ramesh Sannareddy | Created initial version of the lab |

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