LAB – 12
Modules and packages

OBJECTIVE

Getting familiar with the environment for using modules and packages.

EXERCISE:

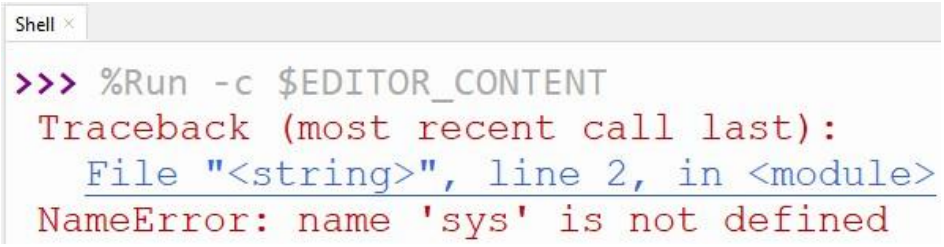
A. Point out the errors, if any, and paste the output also in the following Python programs.

Code 1:

import sys as s print(sys.executable)

print(sys.getwindowsversion())

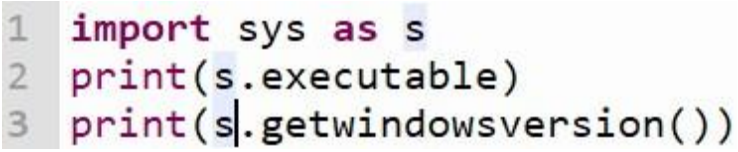
Output:



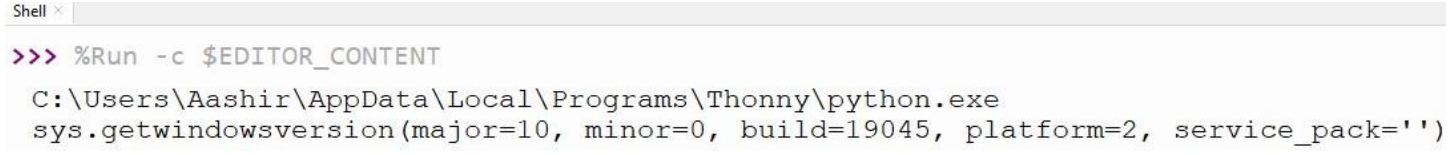
•Explanation:

In this program, the programmer made a minor mistake where he imported the system module as 's' and later called it by 'sys' . Just call it by the assigned name while importing.

Fix Code:



Output:



Code 2:

import datetime from

datetime import date

import times

 # Returns the number of seconds print(time.time())

 # Converts a number of seconds to a date object

print(datetime.datetime.now()) Output:

```
Shell
>>> %Run -c $EDITOR_CONTENT
  Traceback (most recent call last):
    File "<string>", line 3, in <module>
  ModuleNotFoundError: No module named 'times'
```

•Explanation:

The imported module "times" should be written as "time" and also there's no need of second line.

Fix Code:

```
1 import datetime
2 import time
3 # Returns the number of seconds
4 print(time.time())
5 # Converts a number of seconds to a date object
6 print(datetime.datetime.now())
```

Output:

```
Shell
>>> %Run -c $EDITOR_CONTENT
  1768309727.3137603
  2026-01-13 18:08:47.313760
```

Code 3:

From math import math

 # using square root(sqrt) function contained

print(Math.sqrt(25)) print(Math.pi)

 # 2 radians = 114.59 degreees

print(Math.degrees(2)) Output:

```
Shell ×
>>> %Run -c $EDITOR_CONTENT
  Traceback (most recent call last):
    File "<string>", line 1
      From math import math
           ^^^^
  SyntaxError: invalid syntax
```

•Explanation:

You can't import a module from a module so the whole module should be imported. Also, the math function used in print function should be lowercased.

Fix code:

```
1 import math
2 # using square root(sqrt) function contained
3 print(math.sqrt(25) )
4 print(math.pi)
5 # 2 radians = 114.59 degreees
6 print(math.degrees(2))
```

Output:

```
Shell ×
>>> %Run -c $EDITOR_C
  5.0
  3.141592653589793
  114.59155902616465
```

B. What would be the output of the following programs:

Code 1: import

calendar yy =

2017 mm = 11

 # display the calendar

print(calendar.month(yy, mm)) Output:

Code 2: import sys

print(sys.argv) for i in

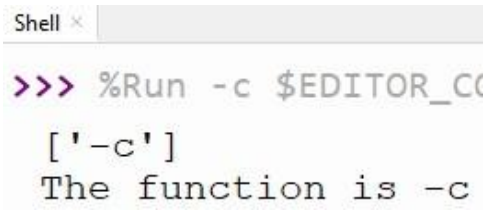
range(len(sys.argv)): if

i==0:

print("The function is",sys.argv[0])

else:

print("Argument:",sys.argv[i]) Output:



Code 3:

import numpy as np #

Creating array object

arr = np.array([[1, 2, 3],

[4, 2, 5]])

 # Printing array dimensions (axes) print("No.

of dimensions: ", arr.ndim)

 # Printing shape of array print("Shape

of array: ", arr.shape)

 # Printing size (total number of elements) of array

print("Size of array: ", arr.size) Output:

```
Shell ×
>>> %Run -c $EDITOR_CONTEN
  No. of dimensions:  2
  Shape of array:  (2, 3)
  Size of array:  6
```

C. Write Python programs for the following:

1. Write a NumPy program to create a 1D array of 10 zeros, 10 ones, 10 fives Code:

```
1 import numpy as np
2 arr = np.array([0]*10 + [1]*10 + [5]*10)
3 print(arr)
```

Output:

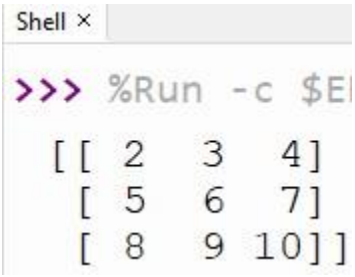
```
Shell ×
>>> %Run -c $EDITOR_CONTENT
  [0 0 0 0 0 0 0 0 0 0 1 1 1 1 1 1 1 1 1 1 5 5 5 5 5 5 5 5 5 5]
```

2. Write a NumPy program to create a 3x3 matrix with values ranging from 2 to 10.

Code:

```
1 import numpy as np
2 ran=range(2,10)
3 print(np.arange(2,11).reshape(3,3))
```

Output:


Shell ×
>>> %Run -c $E
[[2 3 4]
[5 6 7]
[8 9 10]]