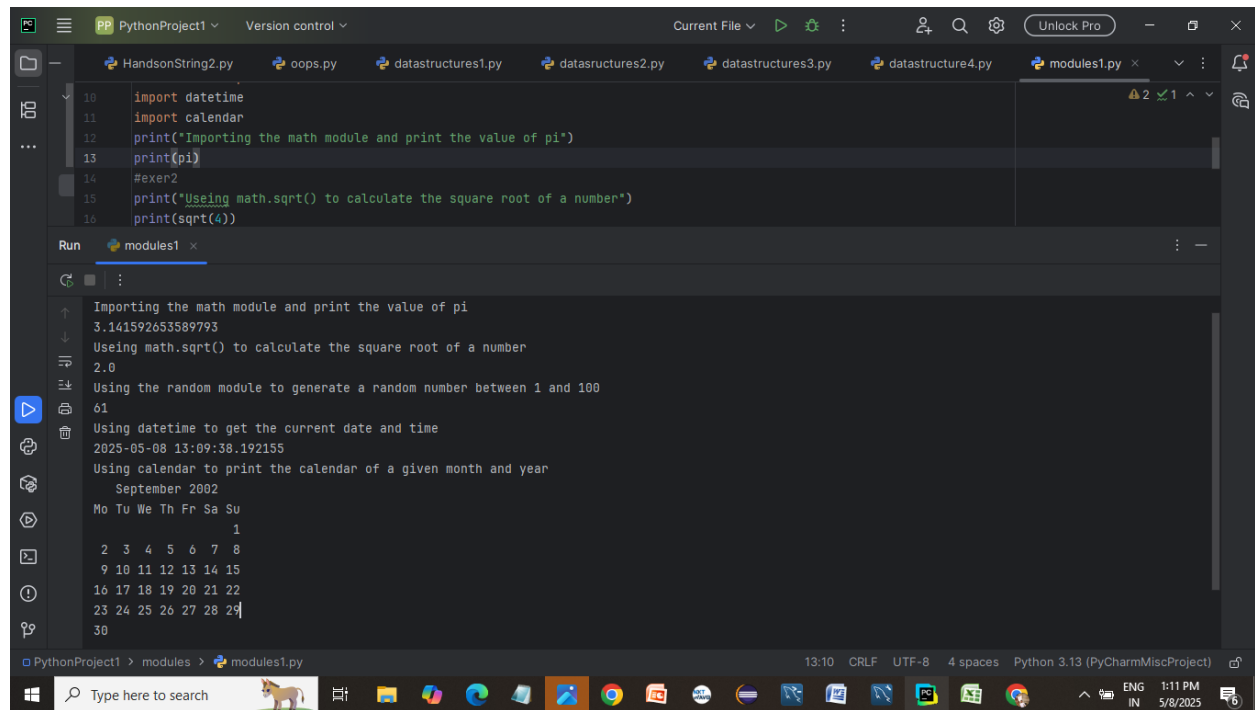


Hands-on modules

```
''' Exercise 1: Import the math module and print the value of pi
# Exercise 2: Use math.sqrt() to calculate the square root of a number
# Exercise 3: Use the random module to generate a random number between 1 and 100
# Exercise 4: Use datetime to get the current date and time
# Exercise 5: Use calendar to print the calendar of a given month and year'''

#exer1
from math import pi,sqrt
from random import randint
import datetime
import calendar
print("Importing the math module and print the value of pi")
print(pi)
#exer2
print("Useing math.sqrt() to calculate the square root of a number")
print(sqrt(4))
#exer3
print("Using the random module to generate a random number between 1 and 100")
print(randint(1,100))
#exer4
print("Using datetime to get the current date and time")
print(datetime.datetime.now())
#exer5
print("Using calendar to print the calendar of a given month and year")
print(calendar.month(2002,9))
```

Output)



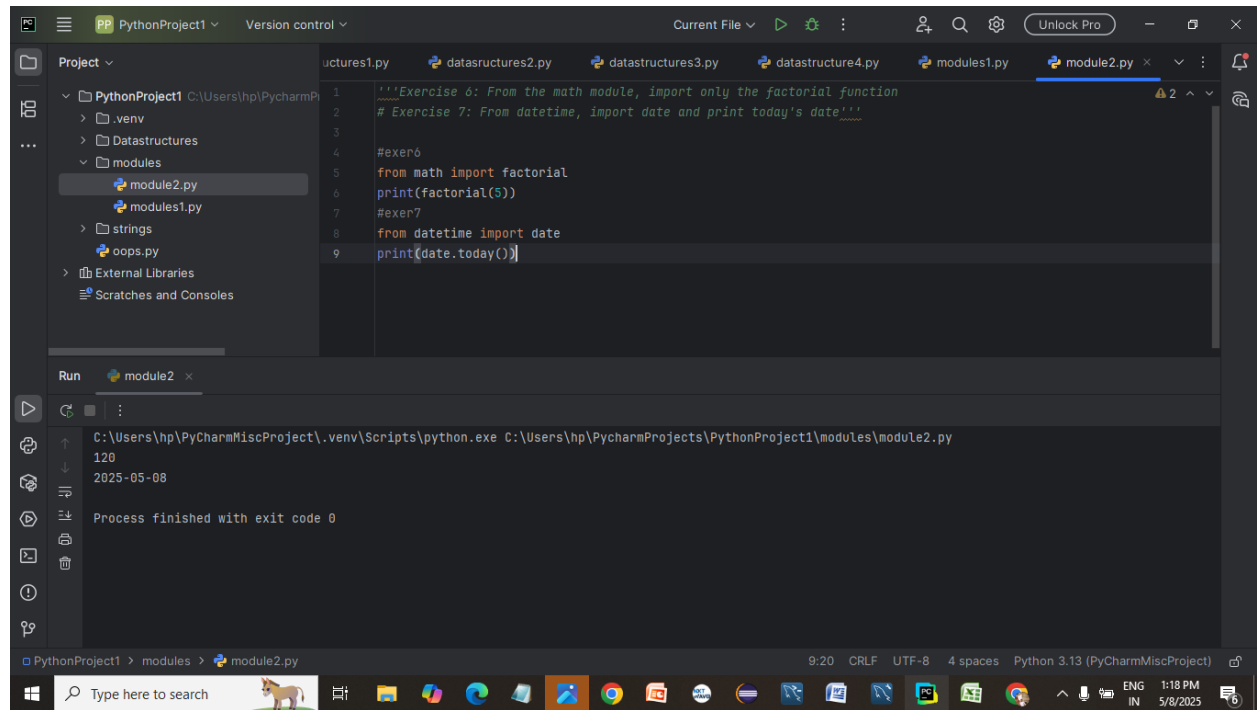
```
PythonProject1
HandsonString2.py
oops.py
datastructures1.py
datastructures2.py
datastructures3.py
datastructure4.py
modules1.py x
10 import datetime
11 import calendar
12 print("Importing the math module and print the value of pi")
13 print(pi)
14 #exer2
15 print("Useing math.sqrt() to calculate the square root of a number")
16 print(sqrt(4))

Run modules1 x
Importing the math module and print the value of pi
3.141592653589793
Useing math.sqrt() to calculate the square root of a number
2.0
Using the random module to generate a random number between 1 and 100
61
Using datetime to get the current date and time
2025-05-08 13:09:38.192155
Using calendar to print the calendar of a given month and year
September 2002
Mo Tu We Th Fr Sa Su
      1
2 3 4 5 6 7 8
9 10 11 12 13 14 15
16 17 18 19 20 21 22
23 24 25 26 27 28 29
30
```

```
'''Exercise 6: From the math module, import only the factorial function
# Exercise 7: From datetime, import date and print today's date'''

#exer6
from math import factorial
print(factorial(5))
#exer7
from datetime import date
print(date.today())
```

Output



The screenshot shows the PyCharm IDE interface. The top toolbar includes buttons for running and debugging. The left sidebar shows the project structure with 'module2.py' selected. The main editor window displays the Python code. The bottom Run console shows the execution output:

```
C:\Users\hp\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\hp\PyCharmProjects\PythonProject1\modules\module2.py
120
2025-05-08
Process finished with exit code 0
```

The status bar at the bottom indicates the file encoding is UTF-8, the line ending is CRLF, and the Python version is 3.13 (PyCharmMiscProject).

```
''' Exercise 8: Create a Python file called `my_utils.py` with a function
add(a, b)
# Exercise 9: Import `add` from `my_utils` in another script and use it
# Exercise 10: Add another function to `my_utils.py` (e.g., is_even) and use
it in your main file'''

#exer8
def add(a,b):
    return a+b
def is_even(n):
    if n%2==0:
        return True
    else:
        return False
```

File : my_utils.py

```
import my_utils
print(my_utils.add(4,5))
print(my_utils.is_even(15))
print(my_utils.is_even(16))
```

File: main.py

Output 0

The screenshot shows the PyCharm IDE interface. The top toolbar includes icons for file operations, running, and debugging. The left sidebar shows the project structure with folders for 'venv', 'Datastructures', and 'modules'. The 'modules' folder is expanded, showing 'main.py', 'module2.py', and 'modules1.py'. The main editor window displays the code from 'main.py':

```
1 import my_utils
2 print(my_utils.add(4,5))
3 print(my_utils.is_even(15))
4 print(my_utils.is_even(16))
```

Below the editor, the 'Run' window is open, showing the command used to execute the script:
 `C:\Users\hp\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\hp\PyCharmProjects\PythonProject1\modules\main.py`
 The output of the script is displayed in the Run window:
 `9
False
True
Process finished with exit code 0`
 The bottom status bar indicates the file encoding is UTF-8, the line length is 4 spaces, and the Python version is 3.13 (PyCharmMiscProject). The Windows taskbar at the bottom shows the time as 1:24 PM on 5/8/2025.

```

'''Exercise 11: Use the os module to print the current working directory
# Exercise 12: Use the sys module to print command-line arguments
# Exercise 13: Use time.sleep() to delay execution for 3 seconds
# Exercise 14: Use dir() on the math module to list all available functions
# Exercise 15: Use help() on a specific function like random.randint'''
#exer11
import os
print(os.getcwd())
#exer12
import sys
print("command line args: ",sys.argv)
#exer13
import time
print("going to sleep")
time.sleep(10)
print("slept for 10 secs")
#exer14
import math
print(dir(math))
#exer15
import random
help(random.randint)

```

Output

The screenshot shows the PyCharm IDE interface. The top toolbar includes buttons for running and debugging. The 'Run' button (a green play icon) is highlighted. Below the toolbar, the 'Run' console is open, showing the execution of 'module3.py'. The console output is as follows:

```

C:\Users\hp\PyCharmMiscProject\.venv\Scripts\python.exe C:\Users\hp\PycharmProjects\PythonProject1\modules\module3.py
C:\Users\hp\PycharmProjects\PythonProject1\modules
command line args: ['C:\Users\hp\PycharmProjects\PythonProject1\modules\module3.py']
going to sleep
slept for 10 secs
['__doc__', '__loader__', '__name__', '__package__', '__spec__', 'acos', 'acosh', 'asin', 'asinh', 'atan', 'atan2', 'atanh', 'cbrt', 'ceil', 'comb', 'copy
Help on method randint in module random:

randint(a, b) method of random.Random instance
    Return random integer in range [a, b], including both end points.

Process finished with exit code 0

```

The bottom status bar of the IDE shows the file path 'PythonProject1 > modules > module3.py', the time '3:59', and the encoding 'CRLF UTF-8 4 spaces Python 3.13 (PyCharmMiscProject)'.