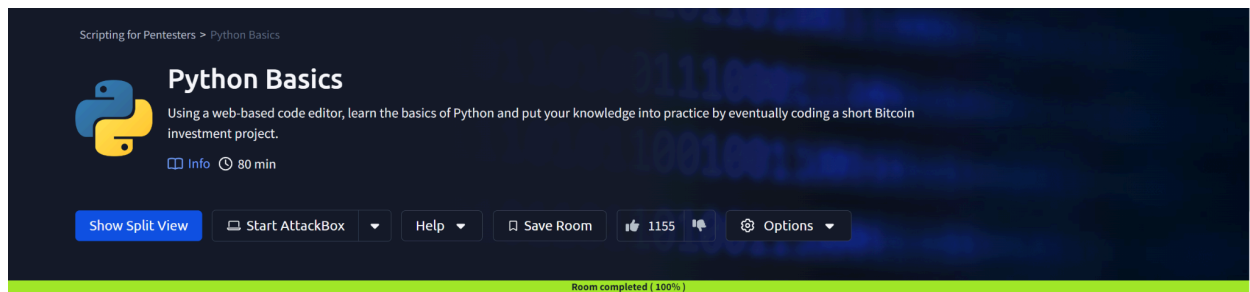


SCRIPTING FUNDAMENTALS

ASSIGNMENT REPORT



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1. INTRODUCTION

This module teaches the basics of Python scripting. Python is a programming language often used by security analysts to create tools or quick scripts that can aid in hacking. The modules cover the basic constructs of the Python language, including variables, loops, functions, conditional statements, and file handling.

2. ANSWERS TO QUESTIONS

Hello World

a. On the code editor, print "Hello World". What is the flag?

The screenshot shows the TryHackMe Python Basics room interface. On the left, a text box explains the `print()` statement and its syntax. Below it, a question asks for the flag to complete the exercise. The answer input field contains `THM(PRINT_STATEMENTS)`, which is marked as correct. On the right, a code editor shows a Python script with `print("Hello World")`. Below the editor, the output of the code is displayed as "Hello World".

Room completed (100%)

when we run this code, it will output the text **Hello World**. Let's break this down. In the example, line 1 is a comment, a line starting with a hashtag (#) symbol and is not run by the computer. A comment is written by the programmer (you) to help other people reading the code understand what is going on.

We can control what is output to the screen by using the `print()` statement. Anything inside of the parenthesis () will be output. However, because we are printing a string (more on data types later in this room), we have to put them inside of quotations ""

Please note, this room's examples are for Python3.

Answer the questions below

On the code editor, print "Hello World". What is the flag?

THM(PRINT_STATEMENTS) ✓ Correct Answer ? Hint

script.py flag.txt shipping.py bitcoin.py Run Code

```
1 # Write your python code here
2 print("Hello World")
3
4
5
6
7
8
9
10
11
```

Exercise Complete! The flag is: THM(PRINT_STATEMENTS)

Python code output

Hello World

b. In the code editor, print the result of 21 + 43. What is the flag?

The screenshot shows the TryHackMe Python Basics room interface. On the left, a text box explains comparison operators and provides a table of symbols and syntax. Below it, a question asks for the flag to complete the exercise. The answer input field contains `THM(ADDITION)`, which is marked as correct. On the right, a code editor shows a Python script with `print(21 + 43)`. Below the editor, the output of the code is displayed as "64".

Room completed (100%)

Now that we know basic mathematical operators, let's move on to comparison operators, these play a big part in Python and will be built upon when we look at **loops** and **if statements**. These operators are used to evaluate a program's condition at a particular state.

Symbol	Syntax
Greater than	>
Less than	<
Equal to	==
Not Equal to	!=
Greater than or equal to	>=
Less than or equal	<=

Answer the questions below

In the code editor, print the result of 21 + 43. What is the flag?

THM(ADDITION) ✓ Correct Answer ? Hint

script.py flag.txt shipping.py bitcoin.py Run Code

```
1 # Write your python code here
2 print(21 + 43)
3
4
5
6
7
8
9
10
11
```

Exercise Complete! The flag is: THM(ADDITION)

Python code output

64

c. Print the result of 142 - 52. What is the flag?

The screenshot shows the TryHackMe Python Basics room interface. The top navigation bar includes links to Crackmes, Gmail, YouTube, and Maps. The room progress is 100%. The left sidebar contains a table of operators: Not Equal to (!=), Greater than or equal to (>=), and Less than or equal to (<=). The main content area has three questions: 1. 'In the code editor, print the result of 21 + 43. What is the flag?' with the answer THM{ADDITION}. 2. 'Print the result of 142 - 52. What is the flag?' with the answer THM{SUBTRACT}. 3. 'Print the result of 10 * 342. What is the flag?'. The right sidebar shows a code editor with the Python code `print(142 - 52)` and a 'Run Code' button. The output shows the result 90.

Room completed (100%)

Not Equal to	!=
Greater than or equal to	>=
Less than or equal to	<=

Answer the questions below

In the code editor, print the result of 21 + 43. What is the flag?

THM{ADDITION} ✓ Correct Answer Hint

Print the result of 142 - 52. What is the flag?

THM{SUBTRACT} ✓ Correct Answer

Print the result of 10 * 342. What is the flag?

script.py flag.txt shipping.py bitcoin.py Run Code

```
1 # Write your python code here
2 print(142 - 52)
3
4
5
6
7
8
9
10
11
```

Exercise Complete! The flag is: THM{SUBTRACT}

Python code output

90

d. Print the result of 10 * 342. What is the flag?

The screenshot shows the TryHackMe Python Basics room interface. The top navigation bar includes links to Crackmes, Gmail, YouTube, and Maps. The room progress is 100%. The left sidebar contains a table of operators: Not Equal to (!=), Greater than or equal to (>=), and Less than or equal to (<=). The main content area has three questions: 1. 'In the code editor, print the result of 21 + 43. What is the flag?' with the answer THM{ADDITION}. 2. 'Print the result of 142 - 52. What is the flag?' with the answer THM{SUBTRACT}. 3. 'Print the result of 10 * 342. What is the flag?' with the answer THM{MULTIPLICATION_PYTHON}. The right sidebar shows a code editor with the Python code `print(10 * 342)` and a 'Run Code' button. The output shows the result 3420.

Room completed (100%)

Not Equal to	!=
Greater than or equal to	>=
Less than or equal to	<=

Answer the questions below

In the code editor, print the result of 21 + 43. What is the flag?

THM{ADDITION} ✓ Correct Answer Hint

Print the result of 142 - 52. What is the flag?

THM{SUBTRACT} ✓ Correct Answer

Print the result of 10 * 342. What is the flag?

THM{MULTIPLICATION_PYTHON} ✓ Correct Answer

script.py flag.txt shipping.py bitcoin.py Run Code

```
1 # Write your python code here
2 print(10 * 342)
3
4
5
6
7
8
9
10
11
```

Exercise Complete! The flag is: THM{MULTIPLICATION_PYTHON}

Python code output

3420

e. Print the result of 5 squared. What is the flag?

The screenshot shows the TryHackMe Python Basics room interface. The top navigation bar includes links to Crackmes, Gmail, YouTube, and Maps. The room progress is 33%. The left sidebar contains a table of operators: Not Equal to (!=), Greater than or equal to (>=), and Less than or equal to (<=). The main content area has four questions: 1. 'In the code editor, print the result of 21 + 43. What is the flag?' with the answer THM{ADDITION}. 2. 'Print the result of 142 - 52. What is the flag?' with the answer THM{SUBTRACT}. 3. 'Print the result of 10 * 342. What is the flag?' with the answer THM{MULTIPLICATION_PYTHON}. 4. 'Print the result of 5 squared. What is the flag?' with the answer THM{EXPONENT_POWER}. The right sidebar shows a code editor with the Python code `print(5**2)` and a 'Run Code' button. The output shows the result 25.

Room progress (33%)

In the code editor, print the result of 21 + 43. What is the flag?

THM{ADDITION} ✓ Correct Answer Hint

Print the result of 142 - 52. What is the flag?

THM{SUBTRACT} ✓ Correct Answer

Print the result of 10 * 342. What is the flag?

THM{MULTIPLICATION_PYTHON} ✓ Correct Answer

Print the result of 5 squared. What is the flag?

THM{EXPONENT_POWER} ✓ Correct Answer Hint

script.py flag.txt shipping.py bitcoin.py Run Code

```
1 # Write your python code here
2 print(5**2)
3
4
5
6
7
8
9
10
11
```

Exercise Complete! The flag is: THM{EXPONENT_POWER}

Python code output

25

Variables

- a. In the code editor, create a variable called height and set its initial value to 200.

Room progress (50%)

Answer the questions below

In the code editor, create a variable called height and set its initial value to 200.

No answer needed ✓ Correct Answer

On a new line, add 50 to the height variable.

No answer needed ✓ Correct Answer

On another new line, print out the value of height. What is the flag that appears?

THM[VARIABLE3S] ✓ Correct Answer

script.py flag.txt shipping.py bitcoin.py Run Code

```
1 # Write your python code here
2 height=200
3 height+=50
4 print(height)
5
6
7
8
9
10
11
```

Exercise Complete! The flag is: THM[VARIABLE3S]

Python code output

250

Shipping Project

In this exercise, we will code a small application that calculates and outputs the shipping cost for a customer based on how much they've spent.

- a. Once you've written the application in the code editor's shipping.py tab, a flag will appear, which is the answer to this question.
- b. In shipping.py, on line 12 (when using the Code Editor's Hint), change the customer_basket_cost variable to 101 and re-run your code. You will get a flag (if the total cost is correct based on your code); the flag is the answer to this question.

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Room progress (61%)

Answer the questions below

In this exercise, we will code a small application that calculates and outputs the shipping cost for a customer based on how much they've spent.

In the code editor, click on the "shipping.py" tab and follow the instructions to complete this task.

No answer needed Complete

Once you've written the application in the code editor's shipping.py tab, a flag will appear, which is the answer to this question.

THM{IF_STATEMENT_SHIPPING} ✓ Correct Answer Hint

In shipping.py, on line 12 (when using the Code Editor's Hint), change the

script.py flag.txt shipping.py bitcoin.py Hint Run Code

```
15 # Write if statement here to calculate the total cost
16
17 if(customer_basket_cost > 100):
18     shipping = 0
19     totalcost = customer_basket_cost + shipping
20 else:
21     shipping = 1.2 * customer_basket_weight
22     totalcost = customer_basket_cost + shipping
23
24 print(totalcost)
25
```

Exercise Complete! The flag is: THM{IF_STATEMENT_SHIPPING}

Python code output

86.8

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Room progress (66%)

Answer the questions below

In this exercise, we will code a small application that calculates and outputs the shipping cost for a customer based on how much they've spent.

In the code editor, click on the "shipping.py" tab and follow the instructions to complete this task.

No answer needed Complete

Once you've written the application in the code editor's shipping.py tab, a flag will appear, which is the answer to this question.

THM{IF_STATEMENT_SHIPPING} ✓ Correct Answer Hint

In shipping.py, on line 12 (when using the Code Editor's Hint), change the **customer_basket_cost** variable to **101** and re-run your code. You will get a flag (if the total cost is correct based on your code); the flag is the answer to this question.

THM{MY_FIRST_APP} ✓ Correct Answer

script.py flag.txt shipping.py bitcoin.py Hint Run Code

```
9
10 """
11
12 customer_basket_cost = 101
13 customer_basket_weight = 44
14
15 # Write if statement here to calculate the total cost
16
17 if(customer_basket_cost > 100):
18     shipping = 0
19     totalcost = customer_basket_cost + shipping
```

Exercise Complete! The flag is: THM{MY_FIRST_APP}

Python code output

101

Loops

- On the code editor, click back on the "script.py" tab and code a loop that outputs every number from 0 to 50.

CSA2-2024: Assignment 1: Pyt TryHackMe | Python Basics

Room progress (77%)

In Python, we can also iterate through a range of numbers using the range function. Below is some example Python code that will print the numbers from 0 to 4. In programming, 0 is often the starting number, so counting to 5 is 0 to 4 (but has 5 numbers: 0, 1, 2, 3, and 4)

```
for i in range(5):
    print(i)
```

Answer the questions below

On the code editor, click back on the "script.py" tab and code a loop that outputs every number from 0 to 50.

THM{LOOPS_WHILE_FOR} ✓ Correct Answer Hint

script.py flag.txt shipping.py bitcoin.py Run Code

```
1 # Write your python code here
2 for i in range(51):
3     print(i)
4
5
6
7
8
9
10
11
```

Exercise Complete! The flag is: THM{LOOPS_WHILE_FOR}

Python code output

0
1

Bitcoin Project

- a. You've invested in Bitcoin and want to write a program that tells you when the value of Bitcoin falls below a particular value in dollars.

The screenshot shows the TryHackMe interface for the Bitcoin project. On the left, the task description states: "You've invested in Bitcoin and want to write a program that tells you when the value of Bitcoin falls below a particular value in dollars." It instructs the user to write a function called `bitcoinToUSD` with parameters `bitcoin_amount` and `bitcoin_value_usd`. The function should return `usd_value`, which is the bitcoin value in USD (calculated as `bitcoin_amount * bitcoin_value_usd`). The start of the function should look like this:

```
def bitcoinToUSD(bitcoin_amount, bitcoin_value_usd):
```

Below the code snippet, it says: "Once you've written the bitcoinToUSD function, use it to calculate the value of your Bitcoin in USD, and then create an if statement to determine if the value falls below \$30,000; if it does, output a message to alert you (via a print statement)." At the bottom, there is a text input field containing `THM{BITCOIN_INVESTOR}`, a green "Correct Answer" button, and an orange "Hint" button.

On the right, the code editor shows the following Python code:

```
17
18 # 1) write a function to calculate bitcoin to usd
19 def bitcoinToUSD(bitcoin_amount, bitcoin_value_usd):
20     usd_value = bitcoin_amount * bitcoin_value_usd
21     return usd_value
22
23 investment_in_usd = bitcoinToUSD(investment_in_bitcoin, bitcoin_to_usd)
24 if investment_in_usd <= 30000:
25     print("Investment below $30,000! SELL!")
26 else:
27     print("Investment above $30,000")
```

Below the code editor, it says "Exercise Complete! The flag is: THM{BITCOIN_INVESTOR}" and "Python code output: Investment above \$30,000".

File Read

- a. In the code editor, write Python code to read the flag.txt file. What is the flag in this file?

The screenshot shows the TryHackMe interface for the File Read project. On the left, the task description states: "In the code editor, write Python code to read the flag.txt file. What is the flag in this file?" It provides a code snippet for creating and writing to a file:

```
f.close()

f = open("demofile2.txt", "w") # Creating and writing to a new file
f.write("demofile2 file created, with this content in!")
f.close()
```

Below the code snippet, it says: "Notice we use the close() method after writing to a file; this closes the file so no more writing to the file (within the program) can occur." At the bottom, there is a text input field containing `THM{FILE_R3AD}`, a green "Correct Answer" button, and an orange "Hint" button.

On the right, the code editor shows the following Python code:

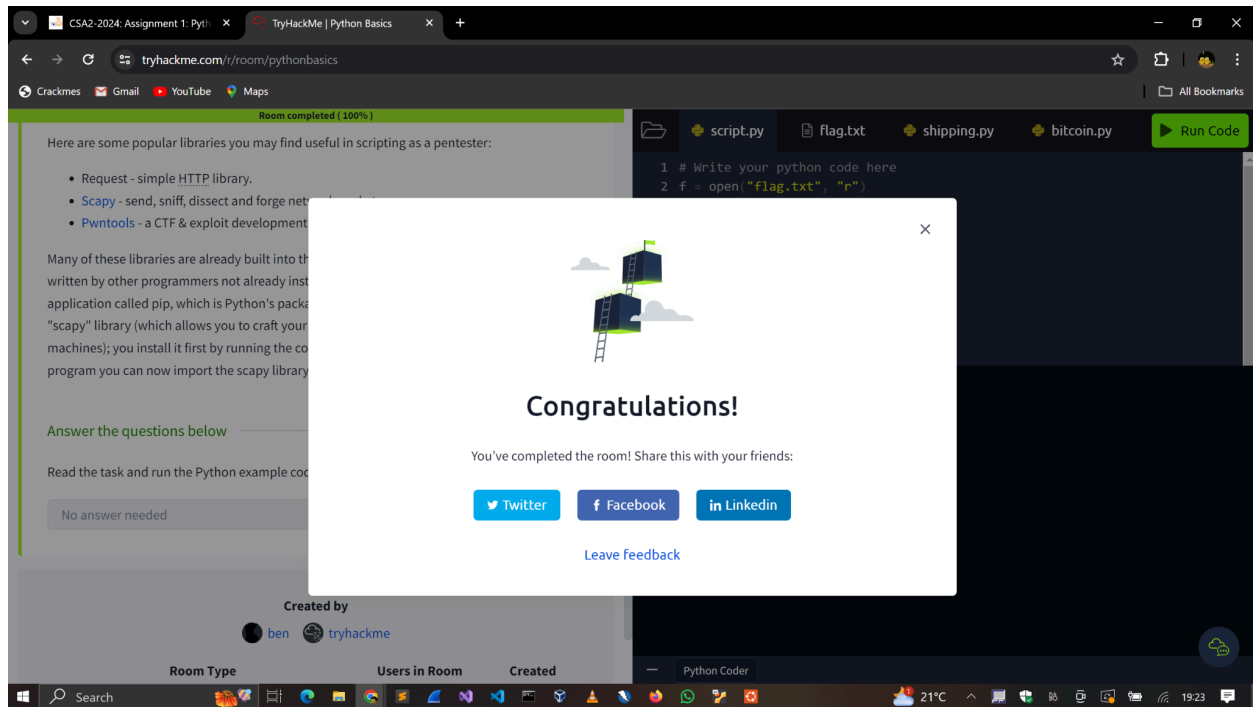
```
1 # Write your python code here
2 f = open("flag.txt", "r")
3 print(f.read())
4
5
6
7
8
9
10
11
```

Below the code editor, it says "Python code output: THM{FILE_R3AD}".

3. MODULE COMPLETION

Below is the link to my THM profile that displays rooms completed, including this room, is Python Basics.

<https://tryhackme.com/p/c1ph3rbnuk>



4. CONCLUSION

The assignment was very insightful. I learned the basics of scripting in Python, from conditional statements like **if__else** and control statements like **loops** to **functions**. I also learned how to handle files through opening, reading and writing into them. Lastly, I learned about libraries in Python and how to import them. I look forward to practising this knowledge by automating some of the processes along my journey as a security analyst.