Python Scripting (Basic)

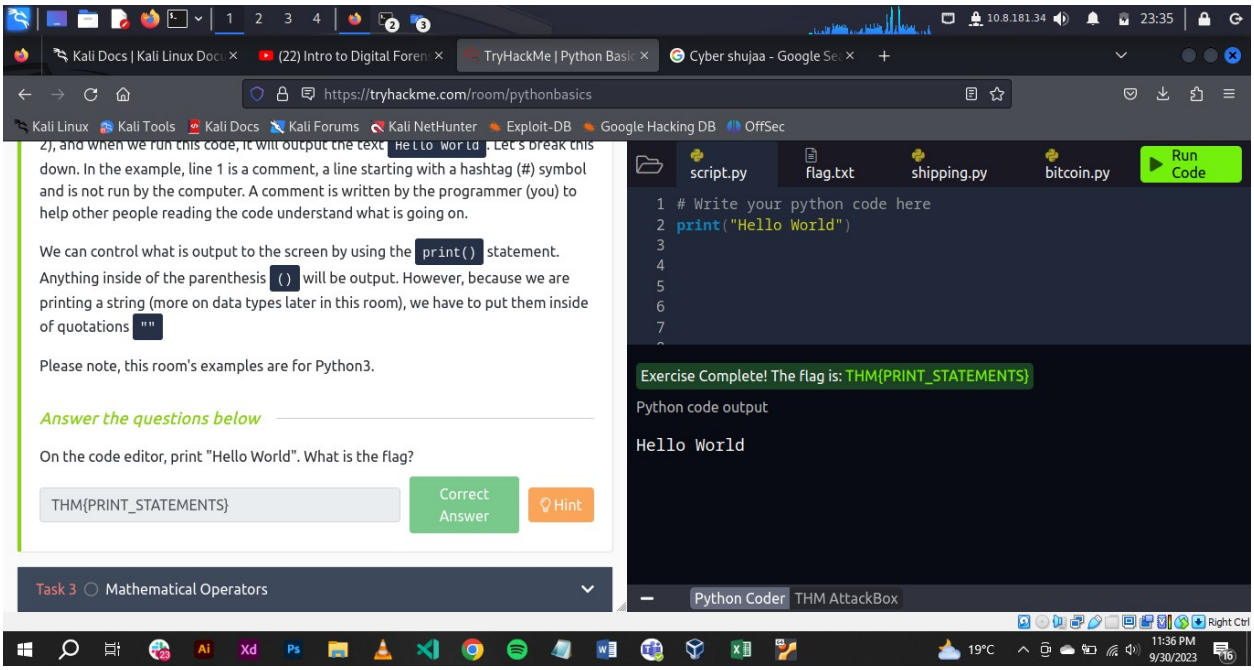
Introduction

For the learner to be equipped well in security analysis role, they need to have a hands-on Python experience and in this module we shall cover several tasks including variables, Loops, functions, Data Structures, if statements, files and how to install Python – for beginners.

Activities

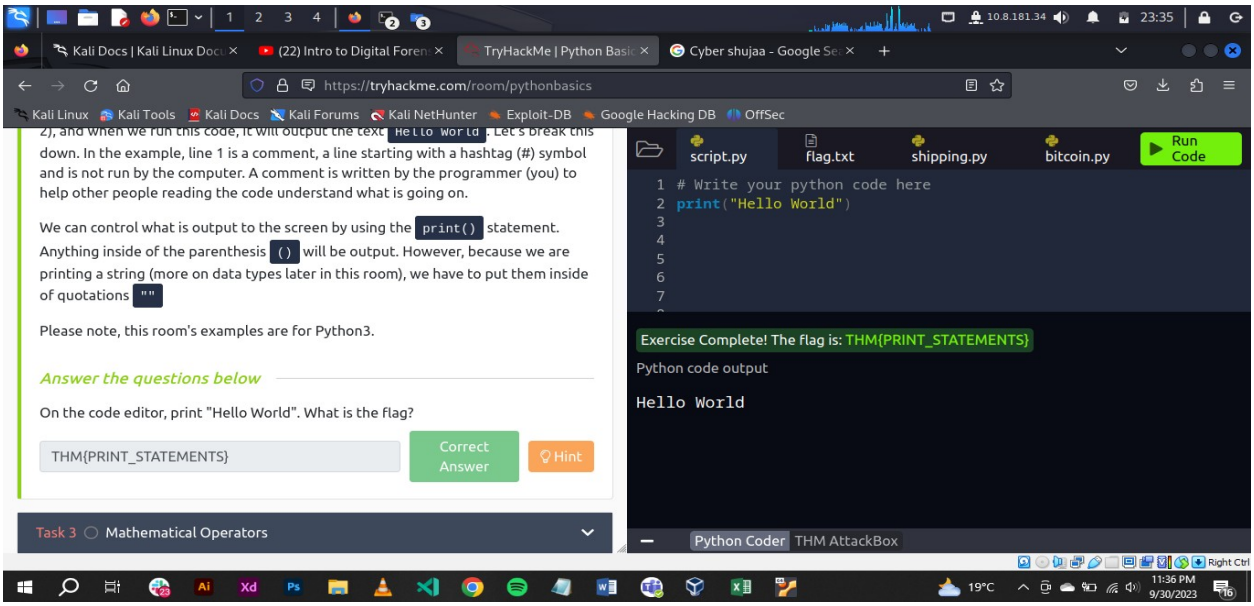
Task 1: Introduction to Python

The learner immersed themselves in hands-on with and learning about the scripting programming language Python. It is a great knowledge to have so and allows the learner to create security tools and create quick scripts that will aid in hacking (as well as defending and analysing).



Task 2: Hello World

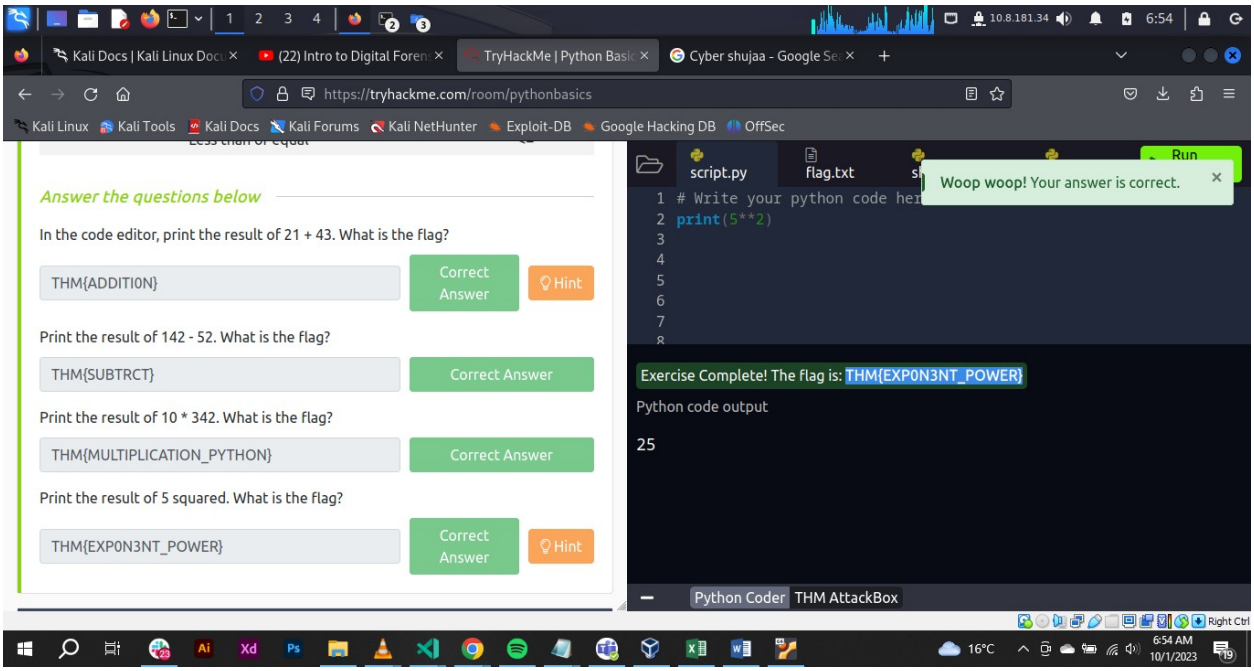
The learner gets started by creating a program that prints out (*an output*) the statement “Hello world” as shown below.

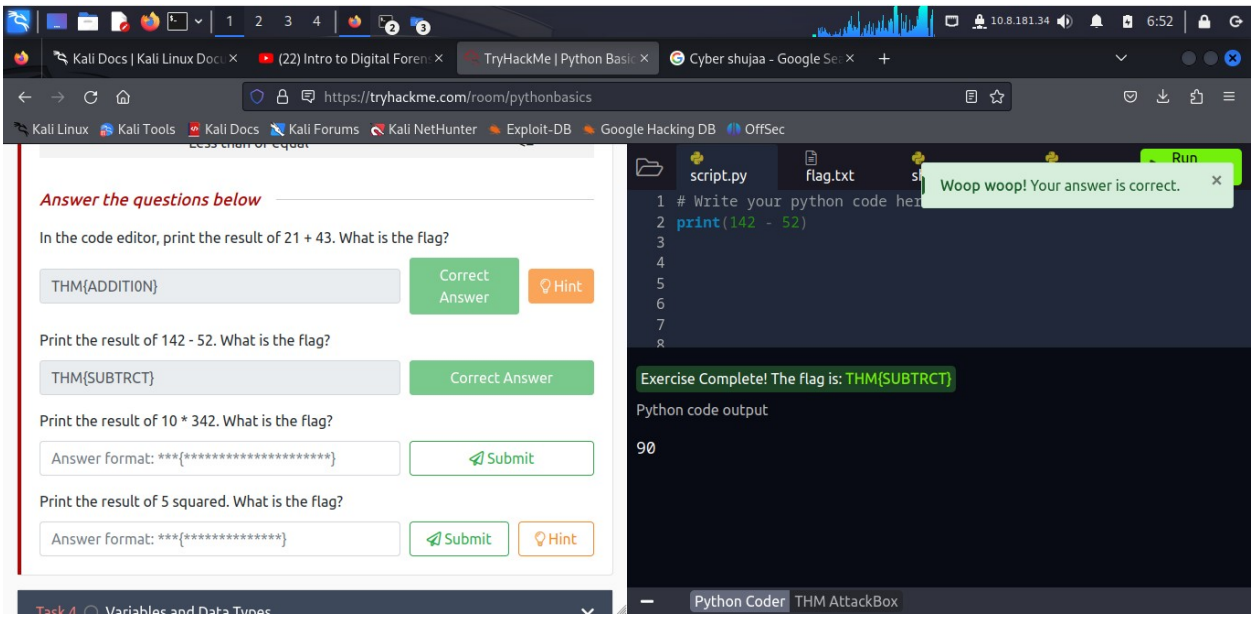


Task 3: Mathematical Operators

In this task the learner went through understanding Mathematics operation from Addition, multiplication, subtraction, exponent, modulus and division.

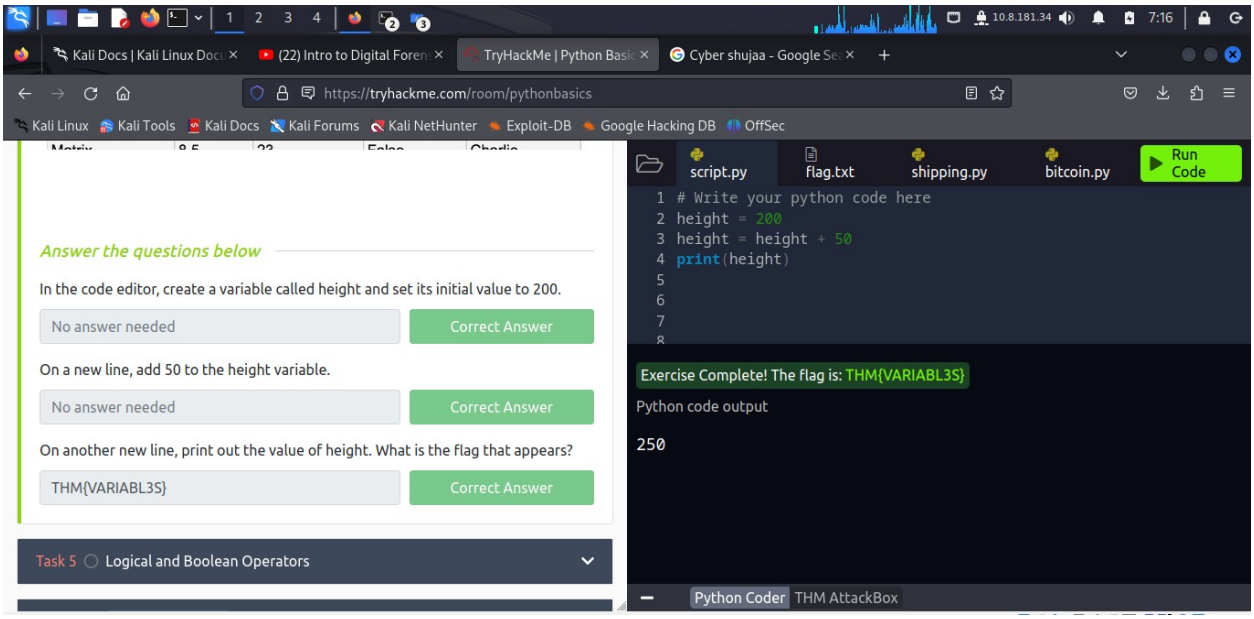
Also learnt is comparison operators: greater than or equal to, less than or equal to, equal to or not equal to.





Task 4: Variables and Data Types

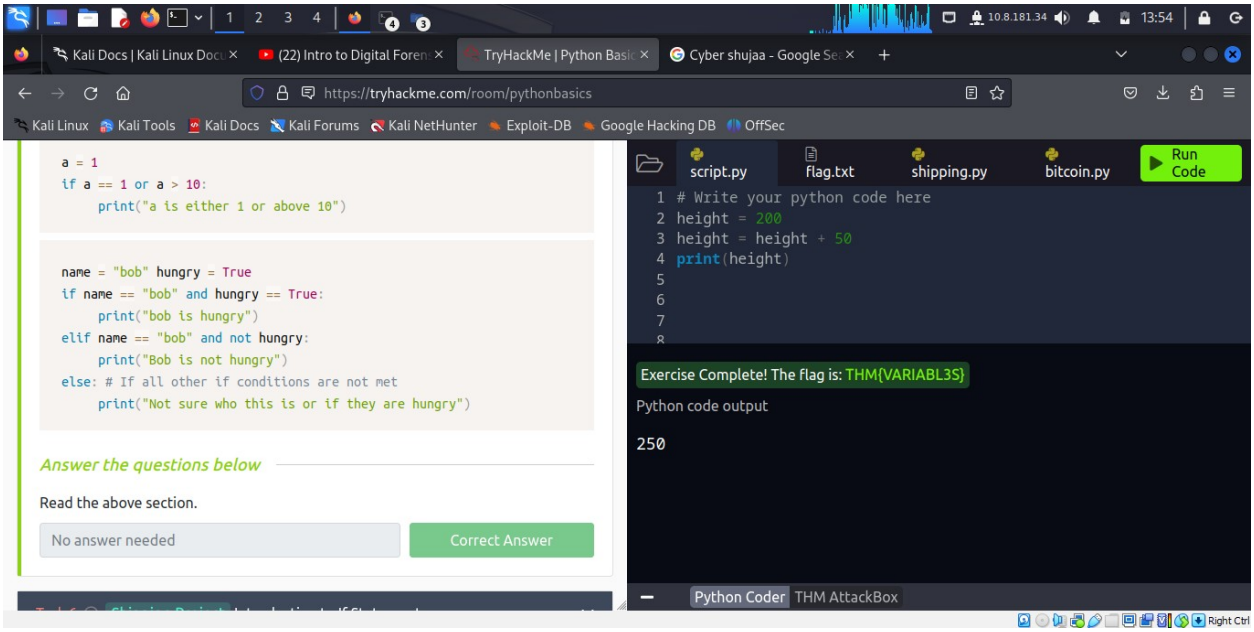
Variables allows to store and update data in a computer program. We have a variable name and store data to that name. Data type refers to the type of data being stored in a variable. Text, or numbers, and many other types can be stored. Example of data types are String, Integers, Boolean, Float and List.



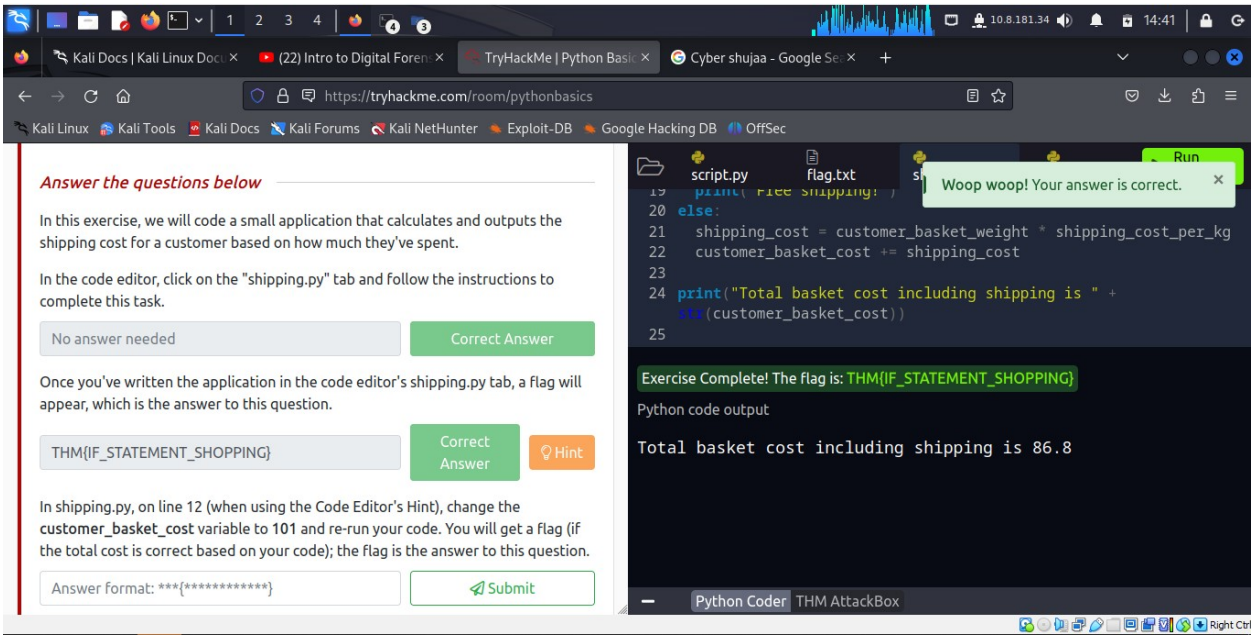
Task 5: Logical and Boolean Operators

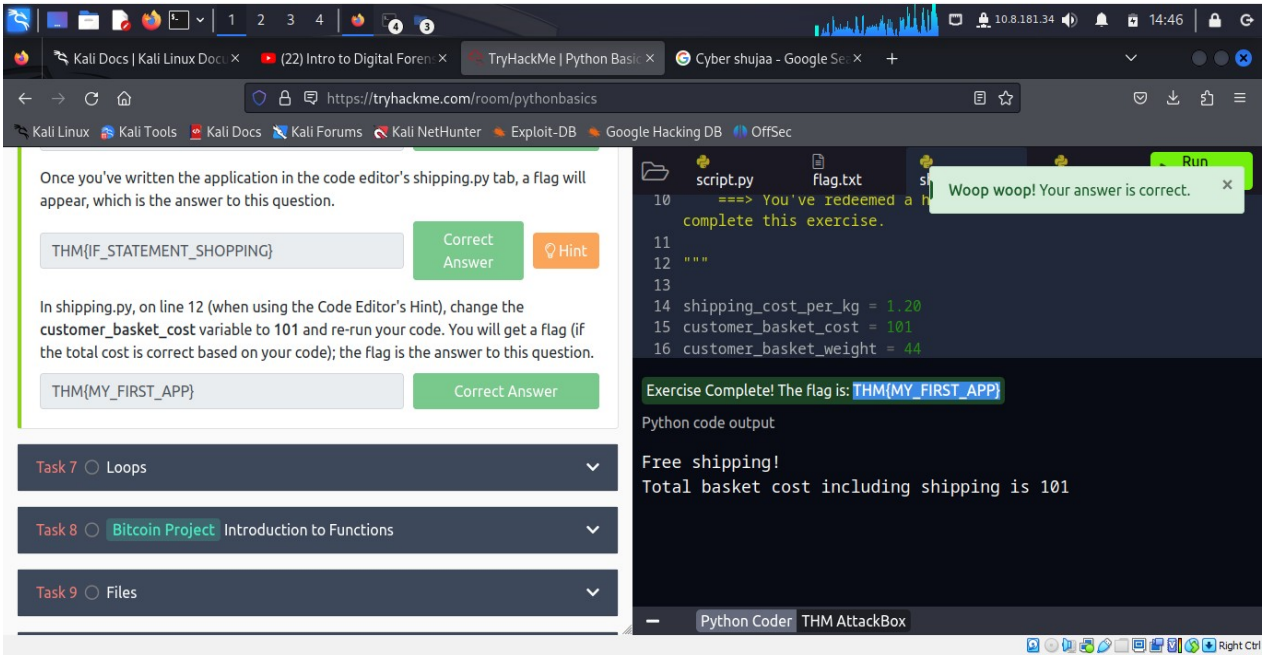
Logical operators allow assignment and comparisons to be made and are used in conditional testing (such as if statements). Example: if x == 5 tests equivalence, if x < 5 tests less than operation, if x <= 5 tests less than operations.

Boolean operators are used to connect and compare relationships between statements. Like an if statement, conditions can be true or false. They are AND, OR and NOT.



Task 6: Shipping Project Introduction to If Statements





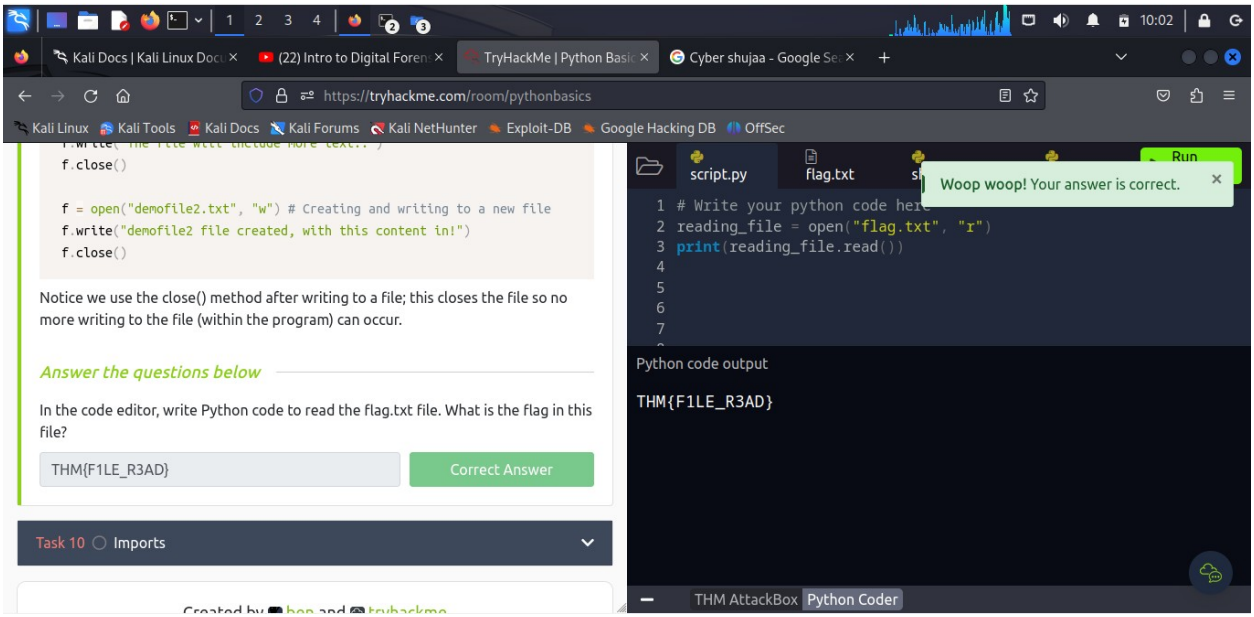
Task 7: Loops

Loops allow programs to iterate and perform actions a number of times. There are two types of loops, for A for loop is used to iterate over a sequence such as a list. Lists are used to store multiple items in a single variable, and are created using square brackets - example shown:

websites = ["facebook.com", "google.com", "amazon.com"]

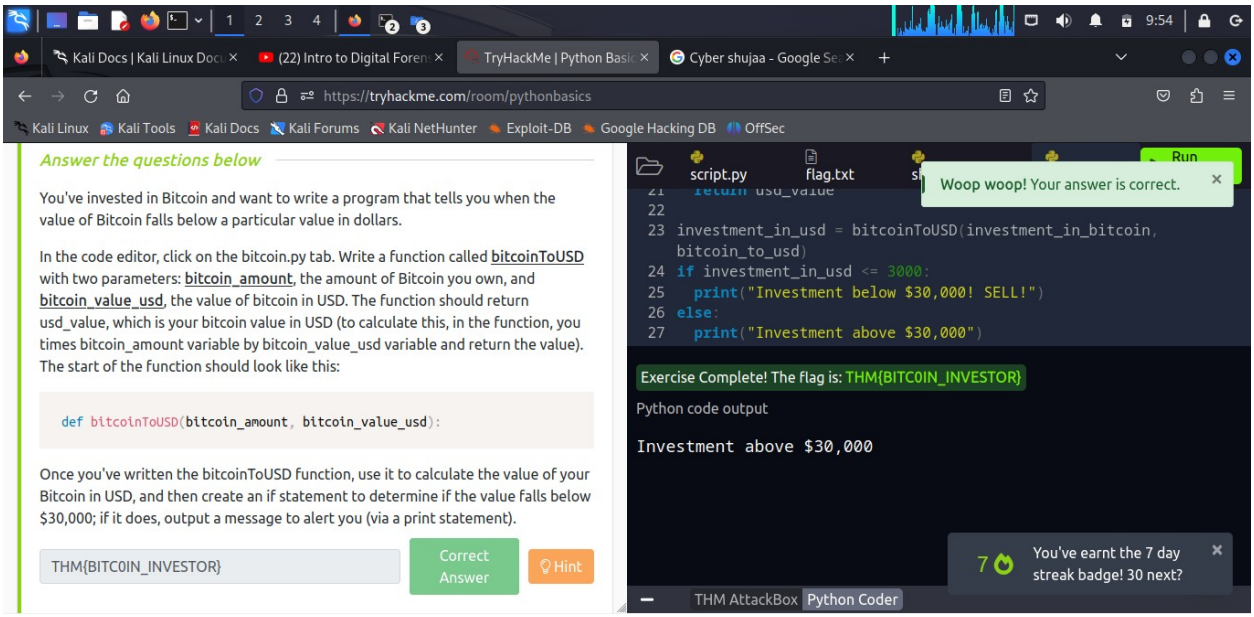
for site in websites:

    print(site)



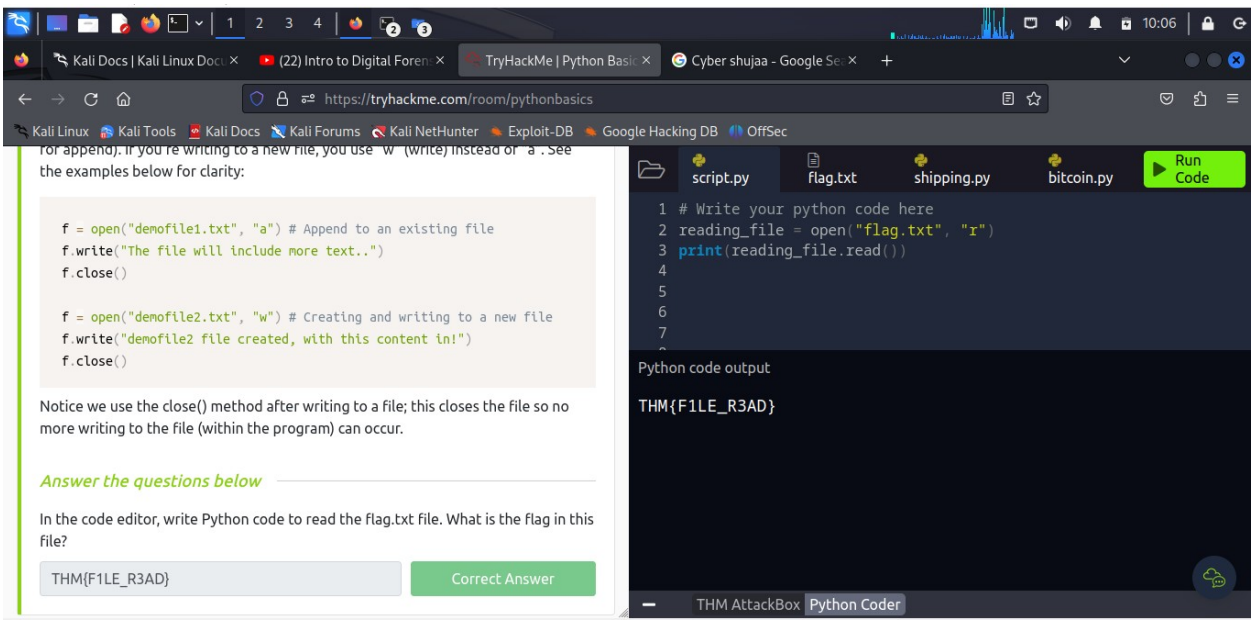
Task 8: Bitcoin Project Introduction to Functions

A function is a block of code that can be called at different places in your program. And, in this we have applied the concept in bitcoin technology to calculate bitcoin converted to USD and created a function to check if amount is below or above the requirement.



Task 9: Files

Python, enables reading and writing from files. In cyber security, it's common to write a script and import or export it from a file.



Task 10: Imports

Python is so versatile that it enables the learner to import libraries – libraries can be thought of functions already created in a file for a specific purpose for example importing Pandas and numpy files in analysis operations.

Example: import datetime – depicted in the below description.