**Print Operations**

[00:00:00.00] [MUSIC PLAYING]

[00:00:08.70] RYAN AHMED: Hello, everyone and welcome to this lesson on print functions in Python. In this lesson, we will learn how to print a message to the screen using the print function. The print function is an important tool for displaying messages to the screen.

[00:00:31.77] Here are the key learning objectives of this lesson. Leverage Python print function to display message to the screen, handle complex string formatting using Python string format method, print general print statements to the screen. Please note that we are still in early introductory lessons of this course. We will leverage this knowledge later on in the course to build powerful applications. So let's head over to our Jupyter notebook and get started.

[00:01:00.99] [MUSIC PLAYING]

[00:01:09.30] All right. So right now, we are in the Jupyter notebook, titled, Print Operation. So the print function is used to print a message to the screen. The messages is in a string data type. And if you recall that we covered it before, a Python string is a sequence of characters that are surrounded by single or double quotation marks. Let me show you an example. Let's assume that I would like to print to the screen, Apple an annual revenue in 2022, was $394 billion. So this is going to be the message that I would like to print to the screen. And I'm going to enclose that message in single or double quotation marks.

[00:01:55.21] Here, I used double quotation marks. And you just say, Print, you open parentheses and then you specify the message. And then this message is going to be printed to the screen. So sometimes, we would like to print a generalized print statements to the screen. To do that, we leverage the format method. The format method simply formats a specified value and insert it in a placeholder indicated by curly braces. Let me show you an example.

[00:02:29.09] Let's assume that I would like to print the following message to the screen, Apple annual revenue in, and I would like to basically, make the year a little bit more dynamic. For example, I can include the revenue in 2022 or 2023, or maybe 2021, as an example. And that's how you simply print a generalized message as follows. You say, Print, you add quotation marks, you specify what you want to print to the screen.

[00:03:00.31] So you say, Apple annual revenue in. You would like to include the generalized message that you would like to print to the screen. You want to place it here in a curly braces. And then you say, was $394 billion as an example. After that, you never use the format method. So you say, .format, you open parentheses, and then you pass along the variable, which could be integer, could be floating point, or maybe it could be string as well. And you pass it here. So simply what's going to happen is when you print that message to the screen, what's going to happen is, whatever content included in the variable year is going to be placed in the placeholder in the location of my curly braces.

[00:03:47.93] So I'm just going to get Apple annual revenue in 2022 was $394 billion. Let me go ahead and show you all of that in code. First, let's assume that I would like to print the following message to the screen. So I'm going to say, the message is going to be equal to Apple annual revenue in 2022 with $394 billion. Please note that the message is simply a string data type. And we covered the strings before. A string is simply a sequence of characters that are surrounded by single or double quotation marks.

[00:04:25.49] To run or execute the cell, you just press Shift and Enter on your keyboard and that is going to do that for you here. So here we go on the left hand side, you will see there is a number indicating that this cell ran successfully. Next, I'm going to confirm that the data type for the message. So I'm going to say type, open parentheses, of message. And then you press Shift and Enter. And you will get the data type, which is STR, which stands for string. To print that message to the screen, all you need to do is to say, Print. You open parentheses and you specify the variable name. And that was going to be message. If you press Enter, you will simply get Apple annual revenue in 2022 with $394 billion.

[00:05:12.96] Alternatively, what you could do as well is that you can simply say, Print. You open parentheses, and then you specify the message right away. You don't need to assign the message to another variable and then print the variable, you can just do all of that in a single line of code. So just say, Print, you open parentheses, and then you directly specify the message in single or double quotation marks. If you press Shift and Enter, here we go, you will get the exact same message that we got before.

[00:05:45.29] Let me show you the format method. So as I mentioned before, in some cases, we would like to print a generalized print statement to the screen and we used a format method to handle this and we simply use the format method, along with curly braces, to place a specific variable in where the location of my curly braces. So here, I'm going to define an integer. I'm going to call it "year". So I'm going to say, year equals to 2022. And that's simply to print a generalized message to the screen. You say Print, you open parentheses, you add quotation marks and then you specify the message. Apple annual revenue in placeholder, which is curly braces, was $394 billion.

[00:06:34.55] Afterwards, you add the period and then you add the format method. You open parentheses and then you specify the variable that you would like to be placed in the location of the placeholder, which is the curly braces. So simply the format method is going to format the specified venue and place it in that placeholder in here. And if you press Shift Enter, here we go, you will simply get Apple annual revenue in 2022 with $394 billion. What if you'd like maybe to add more than one placeholder? For example, I would like my code to be generalized maybe to the year and the revenue as well. To do that, I'm going to specify the year. It's going to be equals to 2022.

[00:07:23.06] The revenue is going to be equal to 394. And this is simply going to be the print message with the format method. So I'm going to say, Apple annual revenue in. You add a placeholder. And then you say, "was", dollar sign, another placeholder and then you add the "B", which stands for billion. You say .format. And then here, order matters. So I'm going to list the year first and then comma, and then we add the revenue afterwards.

[00:07:54.15] So what's going to happen is, the year is going to be formatted and placed in the location here of that placeholder. The revenue, which is, again, an integer data type, is going to be formatted and placed here in that location of the second placeholder. And again, order matters. So if you run the cell, if you press Shift, Enter, here we go, you will get the Apple annual revenue in 2022, was $394 billion. For example, if you'd like to change the year, maybe, to 20, for example, 23, and you run it. You press Enter, here we go. Now we have been able to update the value by 2023 as an example here.

[00:08:34.26] And that's simply how you leverage the print function to print a message to the screen and also leverage the format method to format a specific value and display a generalized print message to the screen. All right. So that's it. That's all I have for this lesson. I hope you enjoyed it.

[00:08:51.60] In the next lesson, we can have our practice opportunity. Please go ahead give it a try. And as always, I want you to write your solution here in this code cell. And then I'm going to show you my solution in a detailed video lecture. I hope you enjoyed this lesson and see you in the next one.

[00:09:08.16] [MUSIC PLAYING]