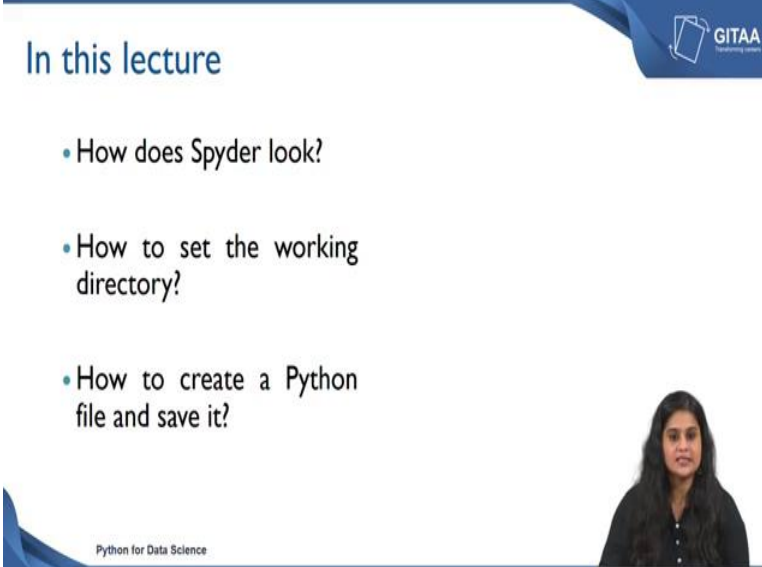**Python for Data Science**
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Lecture - 03
Introduction to Spyder
Part -1

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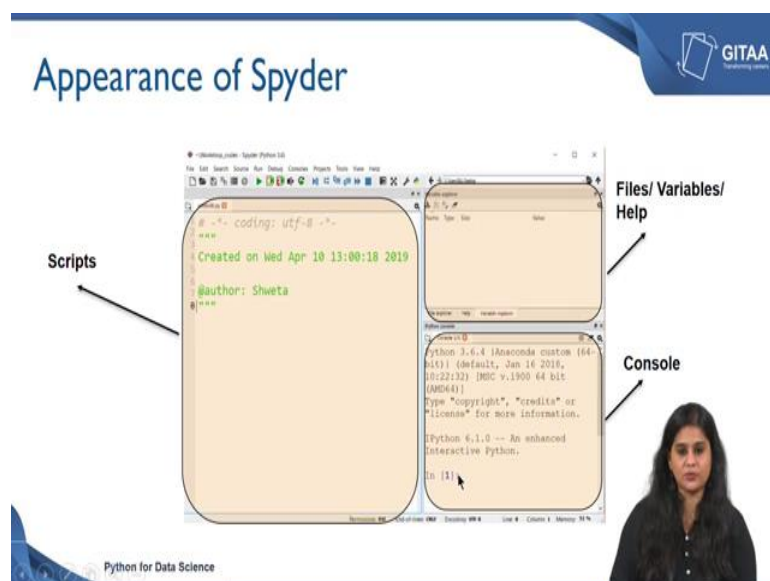

Welcome to the lecture on Introduction to Spyder, in this lecture we are going to see how does the interface of spyder look? How to set the working directory and how to create and save a Python file?

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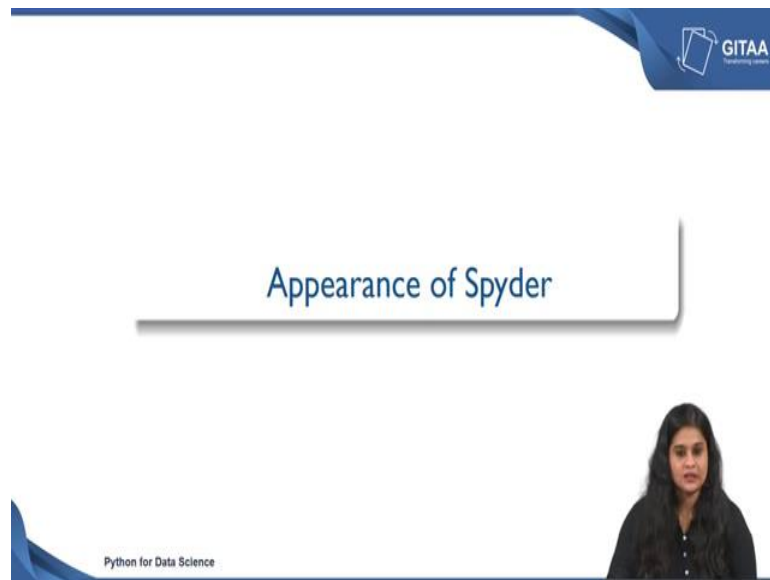
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So, let us see how does the appearance of spyder look. So, on my left you can see a snapshot of the screen that would appear once you open Spyder. So, the Python version that I am using to illustrate this lecture is version 3.6. So, once you open you will get a small description of the author name and when the file was created. There are a couple of windows though here so let us see what each of these windows mean.
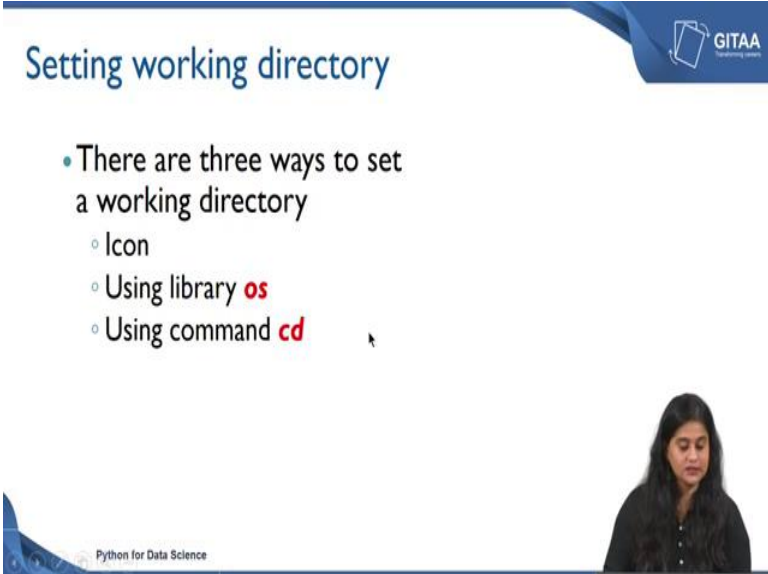
So, the entire interface is split into three windows, the window on my left is called the scripting window and all your lines of codes and commands that you are going to type

will be displayed here. So, you have to write all your commands and codes here on my right I have two windows, the top section is where you would find tabs that read as file explorer, help and variable explorer.

Now under file explorer once you set the directory if you have any files that are existing in your current working directory, then all these files will be displayed under file explorer under variable explorer you will basically be having a display of all the objects and variables that you have used in your code. Now, along with the variables you also have their name, type and size. Now, name is the name of the variable, type is the data type and size is whether it is an array or a single value. Now, the first few values will be displayed if it is only a single value then the single value be displayed under, the heading value the section on the bottom is the console.

So, console so is an output window where you will be seeing all your printed statements and outputs, you can also perform elementary operations in your console, but the only disadvantage is that you will not be able to save it. Now however, whatever you type in the scripting window can always be saved. So, we are going to look into how to save the lines of commands that you have used in your scripting window and we will do that once the lecture proceeds.

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Now, let us see how to set the working directory, there are three ways to set a working directory the first is using an icon, the second is using the inbuilt library OS and the third is using a command cd which means change directory.

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Now, let us see how to set a working directory using the icon. If you look at the top section here you will see an icon here with a folder open, now you can choose a working directory by clicking on this icon. Once you choose you will be prompted to choose a location or a folder. Now, you can choose a suitable folder or a suitable location by clicking on the icon and once you click on the location your directory is considered to be set. Now this is an easy method and if you do not want to be typing commands every single time, then you can just do a drag and drop.

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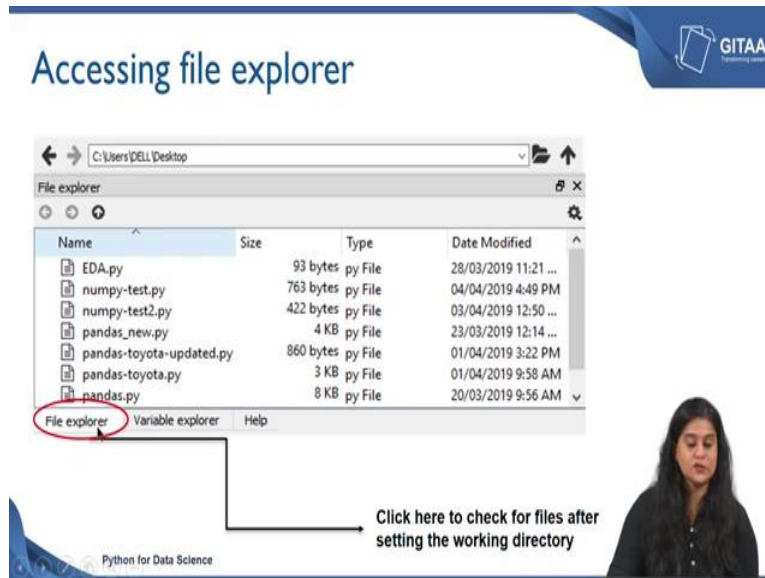

Now, let us look at the second and the third methods, now you need to import a library called os, os stands for Operating Systems. Before you use a function from this library to change the directory you need to import it. So, import is a function that you will use to load a library to your environment.

Now, once you load the library OS on your environment you can use the function chdir which means change directory. So, I need to use the name of the library which is OS in this case followed by a dot and then use chdir. Now, within parenthesis you we can give single or double quotes. So, copy the entire path from your directory and then paste it here or you can also type it out. The third method is using the command cd, cd also means Change Directory and you can give a space after the command and then give the path. So, this how you set a working directory.
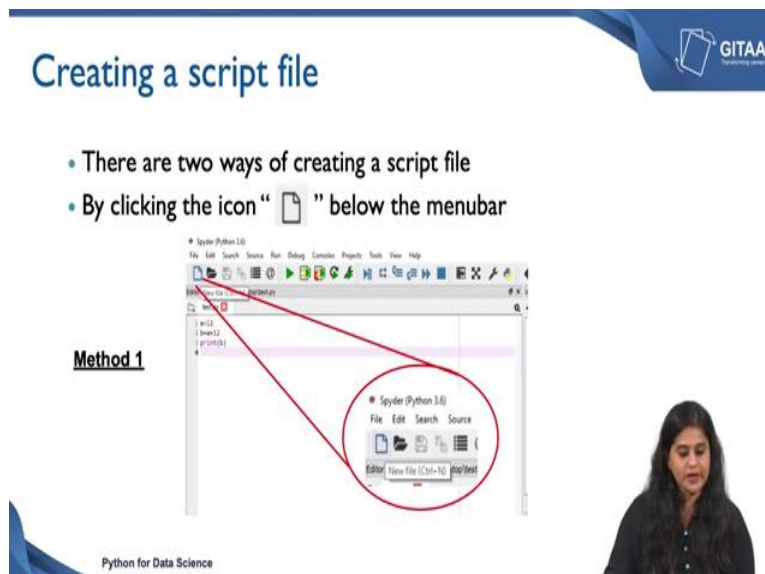
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Now, once you set the working directory if you have any folders or any sub folders or any other files inside the working directory, all of that will be displayed under file explorer. For me I have a couple of files under this directory and hence it is being displayed here for me. But of course, if you are opening a new folder you are likely to see this space as empty now you can check all your files and sub file and sub directories here under file explorer.
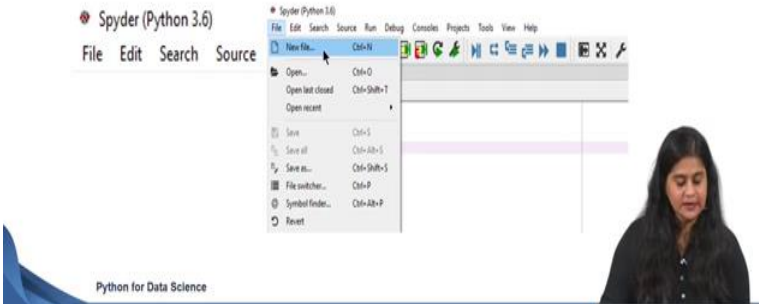
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So, we have seen how to set a working directory, now let us see how to create a file. So, there are two ways to go about it the first is by clicking an icon that looks like a page folded on the right. Now, this you can find on the toolbar. So, on the icon bar towards your extreme left you will see a page that is folded on the right, now if you click on that a new script file will open. I have also shown you a zoomed in version of the icon, so this is how it looks, the moment you click on it a new script file will pop up.

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Now, the second method is by clicking on the file menu and then selecting new file. So, you can see the file menu here and then from that click on new file. Now, apart from these two methods you always have a fallback option of using the keyboard shortcut which is Ctrl + N, in all these three methods right away open a script file for you till. Now, we have set the working directory we have created a script file. So, now let us type few pieces of code before we save our script file, but even before we go there let us look at what a variable means.

So, variable is an identifier that contains a known information, the known information that is contained within an identifier referred to as a value. So, a variable name will actually point to a memory address or a storage location and then this location is actually used to cross refer to the stored value. So, variable name can be descriptive or can also consist of single alphabets. So, we will look into the naming conventions of naming a variable in the lectures to come.

So, let us go ahead and create few variables, now you will see a snapshot of a code here on my left I have zoomed in the lines of code on my right. So, let me again zoom in and show you now I am assigning a value of 11 to a. So, in Python the assignment operator that you will be using to assign a value is equal to. So, I am storing a value of 11 in a, a is my variable name and I am saying b = 8 * 10.

So, this is a multiplication and the multiplication operator in Python is referred as asterisk. So, once I create both my variables I would like to print the values of a and b, now because I want to print two values together; I am going to separate them with a comma inside the print statement. So, the print statement will help me print the output and since I want to print two outputs here I am going to separate them with a comma. However, if you just want to print one statement you can just give a single object inside the parentheses.

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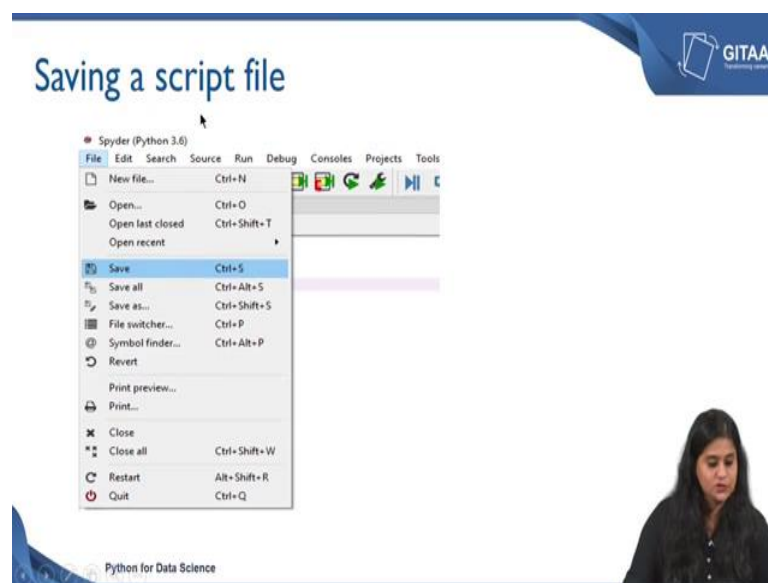
So, now let us go ahead and save our script files. So, to save your script file you can click on the file menu again and you can see there are three different options here. So, let us see what these options are I am going to zoom in a bit to show you the list of options that you have. So, the first option is save which is represented as Ctrl + S in your keyboard shortcut. Now, if you already have a file now if you are making some changes to it, then if you would like to save changes that you made then you can just simply click on save.
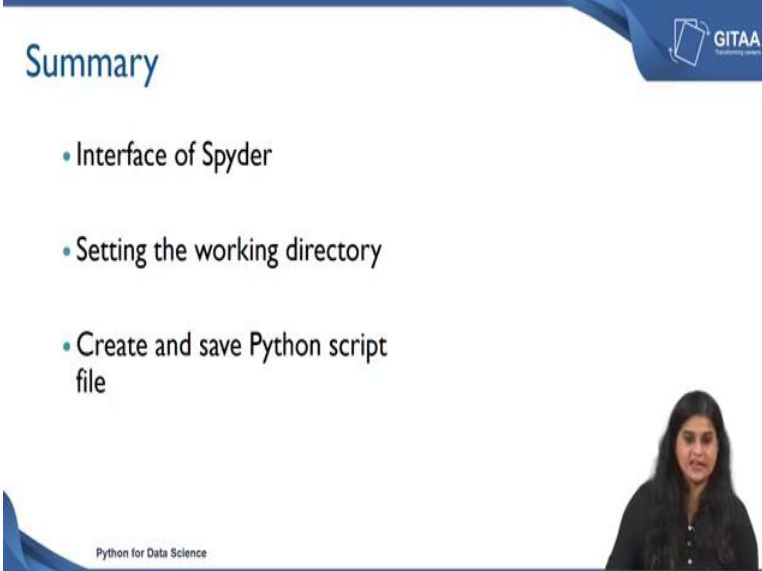
Now if you are making changes across multiple files. So, now, if you are opening multiple files and making changes in all of them then you can use the option save all. So, what save all does is that it will save all the changes made across all the files that are open. So, this is the use of save all. So, the third option is what is called as save as, now if you are creating a new file and you would like to rename it and save it then you would be using save as. So, let us see how to save a new script file for the very first time.

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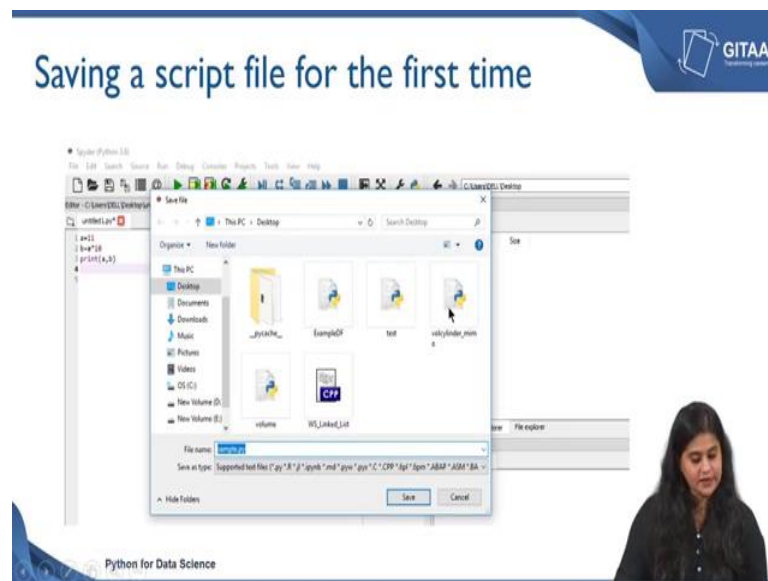
So, once you click on save as it will prompt you to give a name for the file. Now, you can choose your directory here as to where you want to just save it or if you already in your working directory then you can just go there and save it. So, dot py is the extension that is used to save a Python script file. Now once you do this you can just click on save and your file is saved.

So, to summarize in this lecture we saw how the interface of Spyder looks, we saw how to set the working directory and how to create and save Python script files.

Thank you.