

Tour of an IDE | Part C


Python's a language that's been increasing in popularity and it has a cross platform IDE called IDLE. In fact the whole IDE was produced using Python itself. Python programs are written in the IDLE console. Commands can be typed into the shell to program interactively. Let's have a look at how that works.

So this is the Python shell and it's very basic, it doesn't look much like an IDE at the moment. I can type in really simple commands such as a sum, two times two and if I press enter it will give me the answer. But when I actually want to make a proper program what I really need is an editor and all the IDE features that come along with that. So I type 'file'. New window and I've got an untitled program here and it's completely blank. So compared to Scratch it doesn't look like it's going to be that helpful. It's not a GUI in that sense. It's not drag and drop and it expects me to start typing. But if I do start typing you'll see that it starts to help you and I'm going to type a Python keyword in now called import, and we'll see how it actually decides whether that's a keyword or not. And if I type import at the top, nothing's actually happened. I know straightaway that I've made a mistake because import is a keyword and Python, if I'd done that correctly, it would have colour coded it and what I've actually done is put a capital 'I' in where there should be a small one and you can see straightaway it's gone orange and that's a Python keyword. I don't need this for the program but I'm going to leave that in there. And again, if I start to type a command in Python, this is a function called print it allows me to put stuff on the screen. Again I can see something's a bit odd, it's black. I know that this should come up in a colour because the IDE is trying to help me. And again if I go back and type in a small 'p' I've got that up in purple so I know I've done the right thing. I'll stick it in a bracket and we're going to write hello to the screen. As soon as I put those quotes in Python knows that it expects a string and so it codes it in green and so all of this time, this IDE is helping me along. It's not a blank editor and although it doesn't look that fancy it's doing quite important things for me.

If I type in print, again and then type in hello, again, and if you leave that for any amount of time you will actually get commands up. It will tell you where the brackets are so I've opened a bracket and it wants me to close a bracket. Really important in programming, in fact one of the major errors when you start programming is not to pair up those brackets. So you can see that that is quite helpful. A very short program but it's actually doing the job of a very good IDE to help me program properly.

Another really important feature of IDEs is that they can keep track of errors for you. So what we're going to have a look at now is what happens when I actually make a mistake in Python, it will tell me the error, it will try and help me pinpoint where that error is. I'm going to open a file now and we'll see how that works.

So if we open the file on the desktop and this file I know it's got a deliberate error in. So when I actually look at it, it looks fine and yeah, that's quite a nice programme, so I'm going to run it. And I run the module. It asks me what year I was born. So what it wants is a year in numerical format and it's going to work out the difference between that and 2020. So if I type in 1923 and it comes up with a bunch of red stuff and this is really, really useful text. So if we actually go through and read it bit by bit we will find out that the IDLE IDE is actually trying to help me track down where that error is.



So the first thing I notice are the words 'int' and 'string' and we'll talk more about these in the programming modules. So I keep tracking through this and it says line 11. So although I might not understand all of that, it's trying to tell me the line and it's trying to tell me there's some issue between numbers and strings. And I actually know because I've done this before that one thing that Python cannot do is take a string and do some calculation on it. And when I have the input here it actually takes that in as a string. We need to convert that into an integer, we're going to cast it and I do that by typing 'int' on the front and I've got to close my brackets and again the IDE here is highlighting the fact that I've got these pairs of brackets here or parenthesis and I'm going to run it again. So run the module. Save it again because it has changed. Type in 1923 and I get 97 and that's the difference between those two dates. So you can see that even though it doesn't look immediately easy to read it's a really, really useful source of information and it's the IDE which is actually trying to help you do that. A plain text editor wouldn't help you track down that problem in your code.