

Why Program? - Python as a Language

Be installed on your Macintosh hello and welcome back to Python is language you'll notice that I'm wearing a hat and part of the story of the hat is that where I work here at the University of Michigan school of information we my office is in this building called north quad and the we call a quad works sometimes because it's sort of got a square sort of imitates and Oxford quad and so it seemed to me to evoke notions of Harry Potter and when we first moved into the building I joked in one of my classes that we should have a sorting ceremony for all the students as they come into north quad for the first time and so that was cool and I thought that I would be long in Griffin door like everyone wants to be in gryffindor right there the good guys and my students told me that I couldn't be in gryffindor that I had to be in slithering so you'll see me drinking tea throughout the course out of this teacup it's my slither in teacup got I pick that up from Harry Potter world I went down to Florida and visited Harry Potter world and the reason that I am I was sorted by my students into slytherin it's also because I teach Python and Python is like a snake and so if you think about the people from slytherin they are capable of talking to snakes and the class that we are doing the sorting was a Python class and so it it sort of made perfect sense that you would have to be in slytherin if you were the Python teacher and of course your name is Charles severance and then that sounds kinda like severus Snape and so I just accepted that I'm in slithering okay so you all can be in gryffindor but I can't I'm in slithering so I'm the bad guy or the good guy depends on how you look at it right and So what I'm going to do now is I'm gonna you know bring you into slytherin as well because I'm gonna teach you the Python language Python is the language that we Python ousters talk it was invented about over 20 years ago by a fellow name gita van rossum and away we go now even though I'm using this whole snake slither anything it turns out that Python was not at all named for Harry Potter because Python was invented you know almost 2 decades before Harry Potter was created and it wasn't for the snake I was actually money python's Flying Circus was the inspiration for Python the name Python because get to van rossum really wanted to create a programming language that while it was powerful underneath it in its Berry nature was a very powerful language he wanted it to be a language that was fun and he wanted to be a language that was approachable and so thats why Python recently has become so absolutely popular and it's easy to learn and its but it's also powerful and that sort of the magic of Python is the ease of learning it the brevity of the programs the shortness of the programs and the and the power and so we are going to become Python is this now as you learn to be a software developer using the Python programming language you are going to encounter syntax errors and I remember when I used to get syntax errors and I remember my first programming class and I would type on cards and I would upload those cards to the computer and the computer would say you're not worthy I'm like waited check those are pretty good cards how could you be so critical of me tax error and I really got sort of a really bad attitude that somehow this computer didn't like me and that I would make cards it would complain and I would make changes to the cards and it would still complain I make changes in it still complaining like how can I win in this situation and you're gonna feel the same thing you were gonna absolute feel the same thing you're gonna be struggling you're gonna be like how come this computer hates me let me assure you right now the computer doesn't hate you the computer actually loves you it just is not very good at showing how it loves you are telling you how or why it loves you and so syntax errors are not so much Python telling you that you are bad or that you are in in adequate programmer you should find something else to do it's really python's admission that it doesn't understand what you're trying to say and so you gotta get used to that and it's frustrating but you gotta get used to the fact that syntax error your friend Python is saying hey I got the line 7 and I was doing fine up to line 7 but boy online 7 there's some little thing I don't know what the word else means in this context or you didn't indent it and so I'm kind of confused what did you mean please help me you know and so it's so much easier for you to learn Python then it is for Python to figure out what you mean when you're writing code so we have a number of different ways to sort of in code instructions we talk to Python one is we just run Python interactively on our computer hopefully by now you've got installed and you just type Python at a command prompts or either a windows command prompt or Linux command prompt or Macintosh command prompt and I got some examples of how to sort of get this all started get Python installed and away you go now you notice when you run the Python interpreter the 3 Chevron prompt Python is asking you what next right this is you its saying I want to talk to you I want you to tell me some Python to do if you know the Python language you know what to say right here now if you know Python you can type these languages you can say X equals one which really means go find a little piece of memory label attacks and stick one minute print taxes like to find that thing where you need label detection bring me back that number and tell me what I stored in there now why you want to do this that's a different question and these

are very simple things it's gonna take you a while to get the big picture of why we're doing this so just trust me that you want to learn these statements and then later we will successfully turn those into a program so X equals X plus one the 3rd line there X equals X plus one is not as it seems in math it basically says he go grab the old value of X add one to it and stick it back in X that's what that means so `=` really has kind of an arrow to it and then we say hey go look up that X thing that we just did and print that out and then were gonna say quit so that's us talking to Python now you can type just about any crazy stuff you want in here and Python will be unhappy and talk to you so what we're going to do next is going to start talking about the actual language of Python And what it is that we have to say to make Python happy when we're talking to it