Coding projects in python pdf download

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What is measured gets managed. Benchmarking sounds like a tedious process, but if you already have a work code divided into functions, it can be as simple as adding a decorator to the function you're trying to profile. First, it allows you to set line_profiler, so that we can measure the time spent on each line of code in our function: pip3 set line_profilerThis provides a decorator (@profile) that can be used to compare any function in line by line. As an example, lets say that we have the following code:#filename: test.py @profile def sum_of_lists(ls): '''Calculates the sum of an input list of lists''' s = 0 for l in ls: for val in l: s += val return s #create a list of lists smallrange = list(range(10000)) inlist = [smallrange, smallrange, smallrange, smallrange] #now sum them list_sum = sum_of_lists(inlist) print(list_sum)This will profile the sum_of_lists function when called - notice the @profile decorator above the function definition. Now we can profile our code by doing:python3-m line_profiler test.pyWhich gives us: the 5th column shows the percentage of running time spent on each line - this is to point you to a section of your code that needs to be optimized the most, as this is where most of the running time is spent. Keep in mind that this benchmarking library has significant overheads, but it's perfect for finding weak points in the code and replacing them with something more efficient. To run line_profiler inside Jupyter laptops, check out %%lprun magic command.2. Avoid cycles when possible In many cases, using operations such as map, understanding list or numpy.vectorize (usually the fastest) in a python instead of loops can give you a significant performance boost without much work, as these operations are highly optimized internally. Allows you to slightly change our previous example, replacing the nested loops with a map and the sum:#filename: test_map.py def sum_of_lists_map (ls): '''Calculates the amount of the list entry' return (list (list (the amount,ls))) #create on a list of small-range lists (range (10,000)) inlist - smallrange, smallrange, smallrange #now the sum of their list_sum - sum_of_lists_map (inlist) print (list_sum) Allows you to see, As the new version of the map does compared to the original in time them 1000 times: The map version is more 6X faster, than the original!3. Make Python modules using CythonIf you don't want to change your project at all, but still want to get some profit from performance free, Cython is your friend. Cython allows you to compile python modules into shared object files (.so), which can be downloaded by your main python script. this you will need to have Cython as well as a C compiler installed on your computer: If you are on Debian, you can download GCC, doing: Allows you to divide the source code into 2 files called test_cython.py and and test_module.pyx def sum_of_lists(ls): '''Calculates the sum of an input list of lists''' s = 0 for l in ls: for val in l: s += val return s Our main file has to import this function from the test_module.pyx file:#filename: test_cython.py from test_module import * #create a list of lists smallrange = list(range(10000)) inlist = [smallrange,smallrange,smallrange,smallrange] #now sum them list_sum = sum_of_lists(inlist) print(list_sum)Now lets define a setup.py file for compiling our module using Cython:#filename: setup.py from setuptools import setup from Cython.Build import cythonize setup(ext_modules = cythonize(test_module.pyx))Finally, its time to compile our module:python3 setup.py build_ext --inplace Now lets see how much better this version does compared to the original by timing them 1000 times:In this case Cython nets us an almost 2X speed-up compared to the original - but this will vary depending on the type of code you are trying to optimize. If you're looking to take advantage of Cython's inside Jupyter laptops, there's %%Cython Magic available that allows you to compile your features with minimal hassle. ConclusionThese were 3 easy to implement tips to net you some extra metrics - for more information on line_profiler and Cython's Jupyter, you can check out %%lprun and %cython cell magic. Sign up to get a daily preparation of top tech history! The newest Humble Book Bundle is now available, and this time it's all about learning the Programming Language Python, which happens to be one of the best places to start programming training, and one that has always had a special place in my heart because of its popular on Raspberry Pi.Dear Lifehacker, with all the buzz about learning code, I decided to give it a try. Teh... Read moreThe full collection includes almost all starch-free Press Python books, including beginner-style books like Teach Your Kids Code and Python Crash Course, and more advanced books like Black Hat Python, Inventing Your Own Computer Games with Python, and Grey Python Hat. As in previous bundles, the books are divided into three tiers, $1, $8, and a $15 package. The Python Crash Course is included in the $15 levels, and the bundle is worth it for this book alone. You really don't have to take my word for it though, it has great reviews on Amazon and is pretty consistently a bestseller in the programming category. If you've been curious about various hacking tools and you're tired of having a measly childish script, then both Black Hat Python and Grey Hat Python are great introductions to using Python for both purposes. In addition, you'll have a much better understanding of basic security by the time you finish both books. You have two weeks to catch the entire collection from the humble book Bundle.Humble Book Python Bundle TL;DR: Python Coder BONUS bundle sells for 26.89 pounds as June 17, saving 97% on the list price. If you thought data science was just a trend that would come and go, then you are very wrong. Data affects almost every aspect of your life, from playlist recommendations on Spotify, to Alexa responses, to the skincare products you use daily. And those who can understand thousands of raw data cells and can consolidate them into action ideas will find themselves climbing the corporate ladder pretty quickly. SEE ALSO: Master photography with this set of online classes If you can't go back to school to learn all about the science of data, then consider immersing himself in the world of online courses instead. They provide the information they need to start a career in this field and are taught by leading experts. And it will cost you less than the price of a textbook. Among the most comprehensive courses you can sign up for in digital format is the Python Power Coder package (currently sold for 26.89 euros). This Bootcamp data science consists of eight different topics, including a step-by-step guide to the popular Python programming language (which includes how to customize automation, fix common coding errors, and deployment), as well as understanding other core structures such as Apache Spark. The goal is that with these 70 hours of training under your belt, you will be able to navigate through the field of data science more easily and efficiently than you could before. In addition, you will also have the basic knowledge needed to start a coding career. And given how much money is on the table with work in this area, we think that 26.89 pounds is well spent money. Python doesn't pre-package with Windows, but that doesn't mean Windows users won't find a flexible programming language useful. It's not quite as easy as installing the newest version however, so let's make sure you get the right tools for the task at hand. First released in 1991, Python is a popular high-level programming language used for general purpose programming. Thanks to a design philosophy that emphasizes readability, it has long been a favorite hobby of programmers and serious programmers. Not only is it a simple language (comparatively speaking, that is) to pick up, but you'll find thousands of projects online that require you to have a Python set to use the program. What version do you need? Unfortunately, a few years ago there was a significant update of Python, which created a big rift between versions of Python. This may make things a little confusing for beginners, but don't worry. We'll get you through installing both major versions When you visit the Python Download Page for Windows, you'll immediately see the separation. Right at the top, square and center of the repository Whether you want the latest release of Python 2 or Python 3 (2.7.13 and 3.6.1, respectively, as This tutorial). RELATED: Add dungeons, ruins, and treasure hunting to your Minecraft world with MCDungeon New Better, right? Maybe so, maybe not. The version you want depends on your goal. Let's say, for example, that you are reading our article about expanding your Minecraft world with MCDungeon and are happy to add interesting things to your worlds. This project is encoded in Python and requires Python 2.7 - you can run the MCDungeon project with Python 3.6. In fact, if you are studying hobby projects like MCDungeon, you will find that almost all of them use 2.7. If your goal is to set some project that ends in .py extension and works, then there is a very, very good chance that you need 2.7 for it. On the other hand, if you want to actually learn Python, we recommend installing both versions side by side (which you can do with zero risk and just a tiny bit of installation hassle). This allows you to work with the latest version of the language, as well as run old Python scripts (and test backward compatibility for new projects). Comparing the two versions is an article in itself though, so we'll put it off on the Python Wiki project where you can read their well-written review of the differences. You can only download Python 2 or Python 3 if you're sure you only need a specific version. We go the distance today and will be installing both of them, so we recommend you download both versions and do the same. Under the main entry for both versions, you'll see the x86-64 installer, as shown below. What is the difference between 32-bit and 64-bit Windows? This installer will install the appropriate 32-bit or 64-bit version on your computer automatically (here are some further readings if you want to learn more about the differences between them). How to install Python 2 Python 2 installation is a snap, and unlike in years past, the installer even set the way variable for you (something we'll get in a little later). Download and run the installer, select Set for all users, and then click next. On the catalog selection screen, leave the catalog as Python27 and click Next. On the customization screen, scroll down, click add python.exe to the path, and then select Will be mounted on your local hard drive. When you are done, click next. You don't have to make any more decisions after that moment. Just click through the master to complete the installation. When the installation is finished, you can confirm the installation by opening Command Prompt and typing the following command: python-V Success! If all you need is Python 2.7 for a project, you can stay right here. It is set, a variable path is set and you have gone to the race. How to install Python 3 If you want to know the newest version of Python, you Python 3. You can install it along with Python 2.7 with no problem, so go ahead and download and run the installer now. On the first screen, turn on the Add Python 3.6 option to PATH, and then click set now. Next, you have to make a decision. Clicking the Limiting The Length of the Triple removes the MAX_PATH variable limit. This change won't break anything, but will allow Python to use the names of long trajectories. Because many Python programmers work in Linux and other nix systems where the length of the path name is not a problem, including this in advance can help mitigate any trajectory problems that may occur while working in Windows. ANSWER: How to make Windows 10 Take File Ways over 260 characters We recommend going ahead and choosing this option. If you know you don't want to unplug the length limit, you can just press the Close button to finish the installation. And, if you want to know more about the problem before making changes, read here. If you only install Python 2.7 and the python3 command when you want to use Python 3. ANSWER: How to edit the PATH system for easy command line access in Windows If, for whatever reason, you don't find this satisfactory need to do a quick setup to find in the next section. Adjust system variables so you can access both python versions from the command line This section of the tutorial is completely optional, but will allow you to quickly access both versions of Python from the command line. After installing both versions of Python, you may have noticed a small quirk. Although we've included a system path for both Python installations, the python input in the command hint indicates only Python 2.7. The reason for this is simple: the variable (whether automatically adjusted by the installer or hand tuned) simply points to the catalog, and each one performed in this catalog becomes a command line. If you list two directories and both have a python.exe file in them, which directory is not higher in the variable list. And, if there is a variable set for the system and the user, the way the system takes precedence over the user path. The latter is exactly what happens in this case: The Python 2 installer edited the system to a broad variable and the Python 3 installer added a variable user level, and we can confirm this by looking at the variable Windows environments. Hit Start, enter advanced system settings, and then select the Option View Advanced System Settings. In the System Properties window, which opens in the Advanced tab, click the Environmental Variable button. Here you can see the Python 3 listed in the User Variables and Python 2 section listed in the System Variables section. Have ways you can fix this situation. The simplest the one with the least functionality) is to simply delete the entry for the Python version you plan to use the least. Although it's simple, it's also not much fun. Instead, we can make another change that will give us access to the python for Python 2 and python3 for Python 3. To do this, head to the file manager and go to the folder where you installed Python 3 (C: Users username AppDataLocal programsPython36 by default). Make a copy of the python.exe file and rename this copy (not the original) in python3.exe. Open a new team query (environmental variables are updated with each new team, tells you to open) and in the air python3 -version. Boom! Now you can use the python command in Command Prompt when you want to use Python 2.7 and the python3 command when you want to use Python 3. ANSWER: How to edit the PATH system for easy command line access in Windows If, for whatever reason, you don't find this satisfactory solution, you can always change the order of environmental variables. Be sure to brush up with our tutorial first if you're not comfortable editing these variables. Note, however, that no matter what method you use, it is important to leave the original python.exe intact because applications in /scripts/sub-direction for both versions of Python rely on that file name and fail if it is not available. After a little setup and a little tweaking, you have both versions installed and you're ready for any Python project you want to tackle. Solutions. coding projects in python pdf download. coding projects in python pdf free download