Explain in your own words what is Python? (300 Words)

Python is an interpreted, object-oriented, high-level programming language with dynamic semantics. Its high-level built-in data structures, combined with dynamic typing and dynamic binding, make it very attractive for Rapid Application Development, as well as for use as a scripting or glue language to connect existing components together. Python's simple, easy to learn syntax emphasizes readability and therefore reduces the cost of program maintenance. Python supports modules and packages, which encourages program modularity and code reuse. The Python interpreter and the extensive standard library are available in source or binary form without charge for all major platforms and can be freely distributed. Often, programmers fall in love with Python because of the increased productivity it provides. Since there is no compilation step, the edit-test-debug cycle is incredibly fast. Debugging Python programs is easy: a bug or bad input will never cause a segmentation fault. Instead, when the interpreter discovers an error, it raises an exception. When the program doesn't catch the exception, the interpreter prints a stack trace. A source level debugger allows inspection of local and global variables, evaluation of arbitrary expressions, setting breakpoints, stepping through the code a line at a time, and so on. The debugger is written in Python itself, testifying to Python's introspective power. On the other hand, often the quickest way to debug a program is to add a few print statements to the source: the fast edit-test-debug cycle makes this simple approach very effective.

Explain Data Python Data Types (200 Words)

Python numeric data type is used to hold numeric values like, int holds signed integers of non-limited length. Float holds floating precision numbers and it’s accurate up to double digit decimals places. A string is a sequence of characters enclosed in single quotes double quotes or triple quotes. The character present in a string can be any digit, letter, special symbols, or white spaces. String in python is an immutable data type that is once a value is assigned to the variable it cannot be changed later. A list is a collection of elements that belongs to different data types like int, float, string, list, etc. all the elements of the list are enclosed in square brackets and are separated by the comma with each other. The list is a mutable data type that is we can change the elements of the list once it is created. Dictionary is a special data type that is a mapping between a set of keys and a set of values. Dictionary represents a key-value pair enclosed in curly brackets and each element is separated by a comma. Key-value pairs are separated by the colon. The elements of the dictionaries are unordered, and the key is unique for each value in the dictionary. The elements of the dictionary are mutable that is its elements can be changed once it is created.

Explain in your own words What is a function? ( 250 Words)

A function is a block of code that performs a task. It can be called and reused multiple times. You can pass information to a function, and it can send information back. Many programming languages have built-in functions that you can access in their library, but you can also create your own functions. When you call a function, the program will pause the current program and execute the function. The function will be read from top to bottom. Once the function is complete, the program continues to run where it had paused. If the function returned a value, that value will be used where the function was called. The keyword def is used in Python to define and create a function. Next, is the name of the function. The instructions in the function follow on the next line after the colon. White space matters in Python, so be sure to indent all the code that you want your function to run. In the example above, the function runs one line of code. Your keen eyes might have noticed that print () is also a function, but it is called differently than our function. Hold on to that thought right now, we will explore functions will parameters later.

Explain the Python print statement (250 Words)

To sum up the print statement is as following. Print in python 2, print is treated as a statement rather than a function. There is no need to wrap the text you want to print in parentheses, although you can if you want. An example of this would be (when writing hello world in python 2 all you would of done is print "Hello World “Hello World” would of showed up, in Python 3 it would go like this print ("Hello World") and it would print Hello World. This can be confusing, as most other actions in Python use functions that require the arguments to be placed inside parentheses. It can also lead to unexpected outcomes if you put parentheses around a comma-separated list of items that you want to print. In contrast, later version of Python explicitly treats “print” as a function, which means you have to pass the items you need to print to the function in parentheses in the standard way, or you will get a syntax error. Some Python 2 programmers find this change annoying, but it can help to prevent mistakes. I am sure the print function will improve in the future but, form a statement to a function that is an improvement, a great one.