1. What is the relationship between def statements and lambda expressions ?

The def keyword is used to define normal functions, while the lambda keyword is used to define anonymous functions. They are, however, limited to a single line of expression. They, like regular functions, can accept several parameters.

1. What is the benefit of lambda?

Lambda helps you use a function only once, and hence, avoids cluttering up the code with function definitions. In short, Python's lambda keyword lets you define a function in a single line of code and use it immediately.

Lambda enables you to use functions with pre-trained machine learning (ML) models to inject artiﬁcial intelligence into applications more easily. A single application programming interface (API) request can classify images, analyze videos, convert speech to text, perform natural language processing, and more.

1. Compare and contrast map, filter, and reduce.

Map: returns an array of pieces of information from the original array. In the callback function, return the data you wish to be part of the new array. Filter: returns a subset of the original array based on custom criteria.

Python's reduce() function doesn't return a new sequence like map() and filter(). Instead, it returns a single value.

1. What are function annotations, and how are they used?

Function annotations are some random expressions which are written with the functions, and they are evaluated at compile time. They do not exist at run time, and there is no meaning of these expressions to python. They are used and interpreted by a third party or external python libraries.

[def foo(a:”int”, b:”float”=5.0) -> ”int”]

1. What are recursive functions, and how are they used?

A recursive function is a function in code that refers to itself for execution. Recursive functions can be simple or elaborate. They allow for more efficient code writing, for instance, in the listing or compiling of sets of numbers, strings or other variables through a single reiterated process.

1. What are some general design guidelines for coding functions?

Use a tab for indentation.

Pythons' default UTF-8 or ASCII encoding.

Using docstrings.

Don't write more than 79 characters in a line.

Using spaces.

Naming Variables, Constants, Classes and Functions.

1. Name three or more ways that functions can communicate results to a caller.
2. The statement return (expression) exits a function, optionally passing back a value to the caller.
3. Change global variable value
4. Using print statements
5. Saving changes in files