**Python Assignment - 24**

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

**Ans:** A lambda is an expression producing a function. It does return an object. A def is a statement producing a function. It does not return anything if not explicitly returned.

1. **What is the benefit of lambda?**

**Ans:** Lambda enables you to use functions with pre-trained machine learning (ML) models to inject artiﬁcial intelligence into applications more easily.

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

**Ans:** The map() function iterates through all items in the given iterable and executes the function we passed as an argument on each of them.

filter() forms a new list that contains only elements that satisfy a certain condition, i.e. the function we passed returns True.

Return() does not return a new list based on the function and iterable we've passed. Instead, it returns a single value.

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

**Ans:** Function annotation is the standard way to access the metadata with the arguments and the return value of the function.

**Example:** def func(a: ‘int’)

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

**Ans:** A recursive function can be defined as a routine that calls itself directly or indirectly.

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

**Ans:** Some general design guidelines for coding functions are as follows:

1. Naming conventions for variables, constant and functions
2. Proper Indentation
3. Limited use of globals
4. Standard headers for different modules
5. **Name three or more ways that functions can communicate results to a caller.**

**Ans:** Three or more ways that functions can communicates results to a caller are as follows:

1. Print()
2. Input()
3. Compile()