**Lab Report (Introduction to Functional Programming) [Lab 12]**

I/we the undersigned, promise that the submitted lab report is/are my/our own work. While I/we was/were

free to discuss ideas with others, the work contained is my/our own. I/we recognize that should this not be the

case; I/we will be subject to penalties as outlined in the course syllabus.

(By typing in your name below, you agree to Academic Integrity and honesty)

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Reflection:

Explain the idea of functional programming and compare it with the object-oriented approach.

Answer the following questions as related to your coding examples from class and exercises in the assignment:

1) What is a functional interface?

A functional interface is an interface that only has one method. It allows programmers to set up functionality that can be implemented using lambda expressions or method references.

2) Compare Supplier and Consumer

Supplier and Consumers are two kinds of functional interfaces. Suppliers are functions that supply a value and Consumers take in (or consume) a value. For example, a supplier can randomly generate a number and a consumer can be used to print out messages.

3) What is an anonymous class and an anonymous function?

An anonymous class is a class which is instantiated in a single expression without giving a name for the class. It is used to build a temporary class for a specific purpose without having to build a separate class. Conversely, an anonymous function is defined without a name and is able to be utilized as a lambda expression. It is a way to set up a functionality which can be passed around as an object.

4) Explain in your best capacity Stream API

Stream API allows programmers to process and manipulate sets of data in a more pragmatic manner. It has different operations that can be used to modify data in different ways (i.e map(), filter(), and reduce()).

5) Compare Map Reduce and Filter Operations

Map, Reduce, and Filter Operations are all different operations that can be used while using Stream API. Map is used to modify each element in a dataset to a new element depending on the code. Filter is used to remove elements that don't meet certain conditions. Lastly, Reduce is used to combine a set of numbers into one value, depending on the instructions written in the code. An example of this would be getting a sum or max value from a list of numbers