Multiple Choice Questions

Question 1 (2pts)

Which of the following is not a part of STL?

1. Functors
2. Allocators
3. Iterators
4. ***Concepts***

Question 2 (2pts)

From the given stream which one is used to tokenize a string?

1. Iostream
2. ***Stringstream***
3. Fstream
4. Printf

Question 3 (2pts)

Which of the following containers holds key-value pairs?

1. Vector
2. Deque
3. ***Map***
4. Set

Question 4 (2pts)

Which of the following is incorrect about constructors?

1. Constructors cannot have return type
2. Constructors should have the same name as Class
3. ***Class could only have one constructor***
4. Constructors can be overloaded

Question 5 (2pts)

Which of the following is the best description of an object-oriented paradigm?

1. It’s a paradigm which is mainly focused on designing methods. For instance, what parameters should be passed to methods, what should they return and so on.
2. ***It’s a paradigm which makes it possible to combine properties and behavior under a single type. Emphasizes is mostly on designing objects and their interactions***
3. It’s a paradigm which makes it possible to write functions without side effects. In OOP every function is a regular object.
4. It’s a paradigm which makes it possible to have classes and objects in our programs

Open Questions

Question 6 (1.5pts) Fix Error

You’re given a fix\_average.cpp file with multiple compile time errors. You need to fix all of the errors such that the program runs correctly, without changing the logical behavior of the program. Submit your solution in average\_fixed.cpp file

Question 7 (1.5pts) Fix Error

You’re given a **fix\_iterator.cpps** file with some **compile-time** errors. You’re assigned to fix them all without changing the logical behavior of the program.

Question 8 (2pts) Coding

Write a function called **linesFromFile()** which takes in a string containing a filename a poplates **std::vector<string>** with the lines of the [text file](https://drive.google.com/file/d/1_rFolgK2ecqj8Kfp4XQl3IvzWhD1FYfA/view?usp=sharing). If the text file is empty, the resulting vector should contain a single string with an error message, you’re free to decide the message. The function should use **call by reference** semantics when possible. Write an appropriate **main()** function which will demonstrate workings of your program. Put your program in the **read\_file.cpp** file.

Question 9 (2pts) Coding

Design a class called Fan to represent a fan. The class contains:

* An int data field named speed that specifies the speed of the fan. A fan has three speeds indicated with values 1, 2 or 3.
* A bool data field named on that specifies whether the fan is on
* A double data field name radius that specifies the radius of the fan
* A no-arg constructor that creates a default fan with speed 1, on false, and radius 5
* Constructor which lets the class user set all of the data fields to some values
* Getter methods for all of the data fields

Write an appropriate main() function where you’ll create 2 Fan objects and showcase workings of your program. Put your solution in the **fan.cpp** file.

Question 10 (3pts) Coding

Write a function duplicateEntries() which takes std::map<std::string, std::string> and returns the number of duplicate values in the map. That is, the number of key/value pairs in the map with the same value.

For instance, from the following pairs {foo, bar}, {baz, bar}, {baz, baz} only the last one contains a pair of the same values. You should use **duplicates.txt** file for your program. Submit your solution as **duplicates.cpp** file.