**What are the four pillars of Object-Oriented Programming? Explain each pillar.**

Abstraction – The process of making code so the user does not need to know how to code works to use it they just need to know how to use the interface.

Encapsulation – The process of keeping variables private and providing interfaces so the variables can be accessed indirectly.

Inheritance – A process that allows classes to share attributes of other classes.

Polymorphism – A OOP concept that allows a method have different meanings and functions.

**What is the relationship between a Class and an Object?**

A class is what defines the properties and behaviors of an Object.

**What are the differences between checked and unchecked exceptions?**

Checked exceptions are checked at compile time. If an exception is thrown the method needs to be able to handle the problem. Unchecked does not happen at compile time and depends on the programmer to write a catch for the exception.

**What are the differences between abstract classes and interfaces? When should you use one over the other?**

An interface can only have abstract methods while an abstract class can have abstract and non-abstract methods. Variables in interfaces are default final while an abstract class may have final and non-final. It is beneficial to use an interface when multiple inheritance is needed.

**What is unit testing and why is it important?**

A unit test is used to validate that components of software perform as designed they are important because software working as designed in critical for a piece of software to be useful.

**What is your favorite thing you learned this week?**

I like learning about inheritance on polymorphism. In my schooling I really didn’t get as solid of a feel for those concepts so it was very beneficial to learn more about them.

Sources:

<https://www.geeksforgeeks.org/checked-vs-unchecked-exceptions-in-java/>

<https://www.careerride.com/java-relation-between-class-and-object.aspx#:~:text=A%20class%20defines%20the%20properties,objects%20represented%20by%20the%20abstraction.&text=A%20class%20thus%20denotes%20a,an%20instance%20of%20a%20class>.