

Haskell Mackowski

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## Week 5 Research Assignment

1. What are the four pillars of Object-Oriented Programming? Explain each pillar. Abstraction, Inheritance, Encapsulation, and Polymorphism.

**Abstraction:** is the process of hiding certain details and showing only the essential information to the user. Abstract methods do not have a body and has to be implemented by classes that inherit from the class that has the abstract method.

**Inheritance:** is a mechanism in which one object acquires all the properties and behaviors of a parent object.

**Encapsulation:** variables of a class will be hidden from other classes, and can be accessed only through the methods of their current class. We would need to use Getters and Setters to access the variables.

**Polymorphism:** Polymorphism is the ability of an object to take on different forms. In Java, polymorphism refers to the ability of a class to provide different implementations of a method, depending on the type of object that is passed to the method.

5. What is unit testing and why is it important?

Unit testing refers to the testing of individual components of your source code. It is important because it lets coders understand what is happening in their code, and allows us to debug or code.

6. What is your favorite thing you learned this week?

I enjoyed learning about Object Oriented concepts and how to apply them. I enjoyed learning how interfaces are useful and how we can use polymorphism to customize methods that are implemented from interfaces using the same method names.

### References

[https://www.youtube.com/watch?v=tKpiqe6KRrk&ab\\_channel=PromineoTech](https://www.youtube.com/watch?v=tKpiqe6KRrk&ab_channel=PromineoTech)  
[https://www.youtube.com/watch?v=Hm8sZoSBUg&ab\\_channel=PromineoTech](https://www.youtube.com/watch?v=Hm8sZoSBUg&ab_channel=PromineoTech)  
<https://www.javatpoint.com/runtime-polymorphism-in-java>