Reading Assignment

- Explain what happened:

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<terminated> TestToStringMedia [Java Application] /usr/lib/eclipse/plugins/org.eclipse.justj.openjdk.ho
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Book - Harry Potter - Fantasy - J.K.Rowling,  20.0 $
CD - Thriller - Pop - Micheal Jackson - Wanna Be Startin' Somethin, Ba
2. DVD - The Lion King - Animation - null - 0: 19.95$
```

-> When we call the toString() method, it will call the method of the object's class, each class has its own toString() method. That's why we see different output for each object

- What are the advantages of Polymorphism?
→ Answer:
1. Code reusability: Polymorphism allows us to perform a single action in different ways. So, we can write and implement methods that behave differently for different subclasses.
2. Abstractness: By using polymorphism, we can design and implement systems that are easily extensible—new classes can be added with little or no modification to the general portions of the application, making the system more abstract.
3. Debugging: Polymorphism make it easier to debug the code.

- How is Inheritance useful to achieve Polymorphism in Java?
→ Inheritance allow us to override methods in subclass inherited from superclass, which is a form of Polymorphism (method level)
We can also use Inheritance to achieve Polymorphism in Object level, by using abstract class or interface

- What are the differences between Polymorphism and Inheritance in Java?
→ Answer
1. Inheritance is a mechanism that allows us to create new classes that reuse, extend, and modify the behavior defined in other classes.
2. Polymorphism is a mechanism that allows us to treat objects of different types uniformly.
3. Inheritance is a compile-time mechanism.
4. Polymorphism is a run-time mechanism.
5. Inheritance uses extends keyword to inherit features from parent class.
6. Polymorphism uses overriding and overloading to resolve calls to methods dynamically at run-time.