Object-Oriented Programming

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**Lab 03: Basic Object-Oriented Techniques**

1. Code update.
2. Overload method addDVD().

A screen shot of a computer code

Description automatically generated

Figure 1: add a list DVD.

A screen shot of a computer code

Description automatically generated

Figure 2: Add two DVDs.

1. Update to update id for DVD and CartItem.

A screen shot of a computer program

Description automatically generated

Figure 3: Update to increase ID when create new DVD.

A screen shot of a computer code

Description automatically generated

Figure 4: Update to increase CartItem ID when create new CartItem.

1. Store.java.

A screen shot of a computer program

Description automatically generated

Figure 5: Code for Store class

1. CartTest.java

A screenshot of a computer

Description automatically generated

1. StoreTest.java

A screenshot of a computer

Description automatically generated

1. Debugging.

TestPassingParameter debugging:

A screenshot of a computer

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1. Update usecase diagram and class diagram.
2. Update usecase diagram.

A diagram of a dvd

Description automatically generated

Figure 6: Usecase diagram

1. Update class diagram.

A computer screen shot of a computer

Description automatically generated

Figure 7: Class diagram

1. Answer the questions.

1. **Question:** Is JAVA a Pass by Value or a Pass by Reference programming language?

- Ans: Java is strictly a pass by value language.

2. **Questions:**

* After the call of **swap(jungleDVD, cinderellaDVD)** why does the title of these two objects still remain?
* After the call of **changeTitle(jungleDVD, cinderellaDVD.getTitle())** why is the title of the JungleDVD changed?

Answer:

In swap: The references are swapped locally within the method, but the original objects (jungleDVD and cinderellaDVD) remain unchanged because Java is pass-by-value.

In changtitle:

* The dvd.setTitle(title) call directly modifies the object referred to by jungleDVD.
* The creation of a new DVD object is local to the method and does not affect the original jungleDVD.