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JAVA PUZZLE BALL

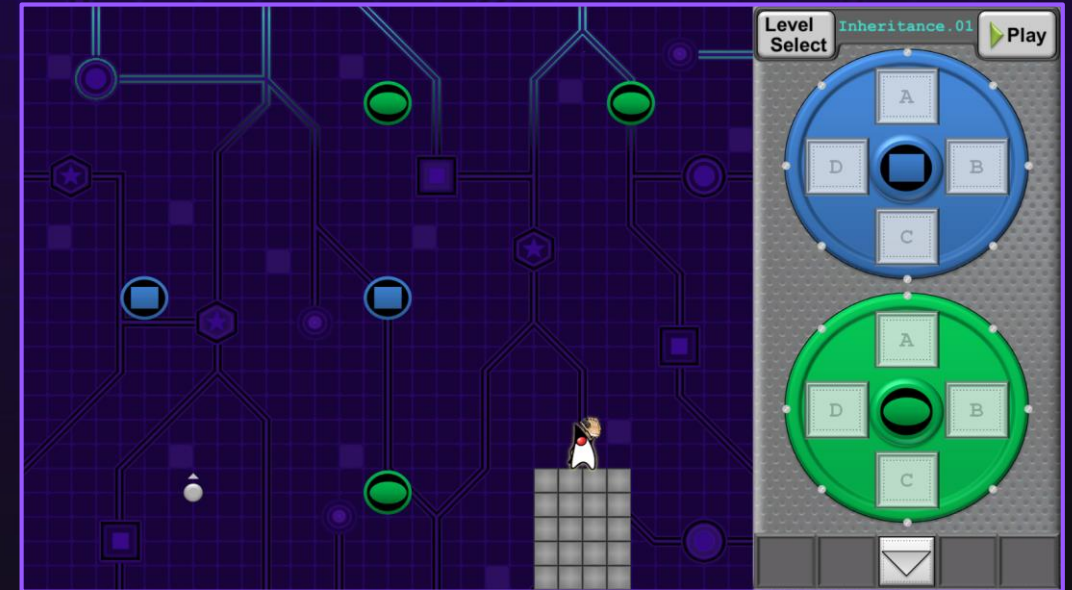
Lesson 3 Inheritance Puzzles 1-3 Inheritance



www.oracle.com/goto/JavaGame

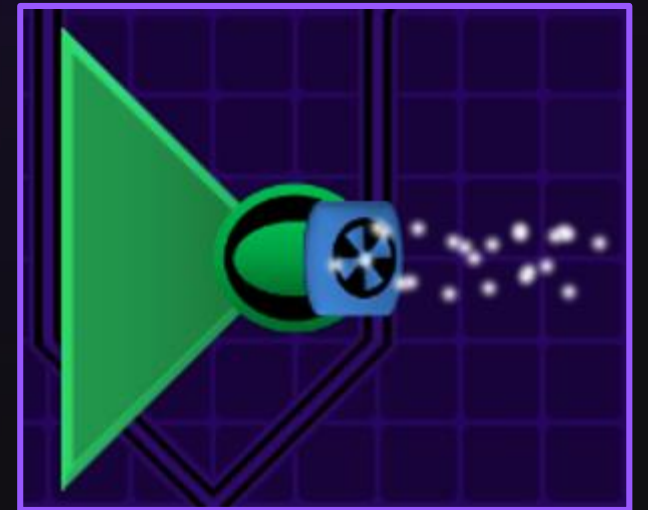
Did You Try Inheritance Puzzles 1-3?

- What do you think “inheritance” means?
- Why are these considered inheritance puzzles?



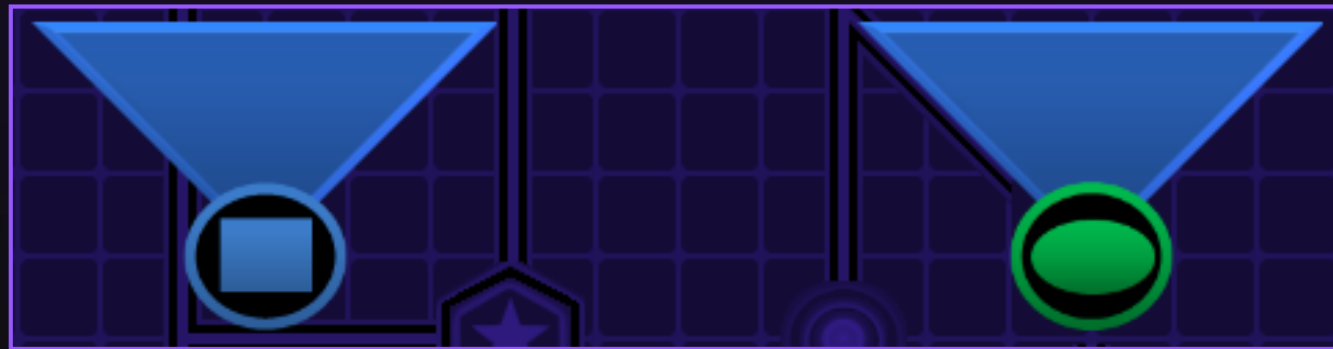
What Is Inheritance?

- **Inheritance** allows one class to be derived from another.
- Did you notice blue shapes appearing on GreenBumpers?
- The GreenBumper class inherits its design from the BlueBumper class.
 - The BlueBumper class is known as the **super class**.
 - The GreenBumper class is known as the **sub class**.
- You've developed an understanding of three key aspects of inheritance and the relationship between super classes and sub classes.



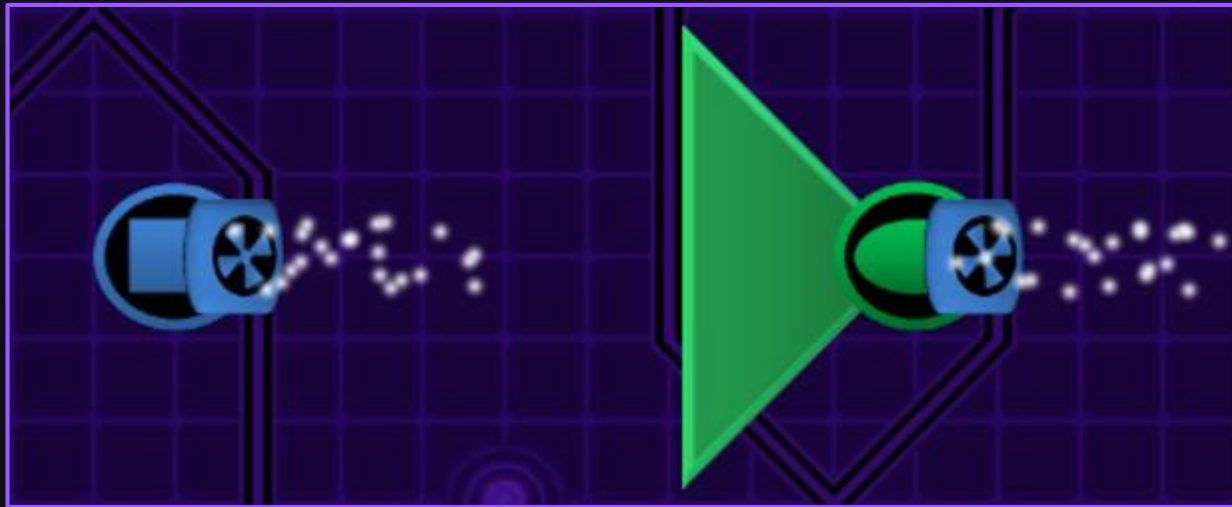
Inheritance Puzzle 1

- In the game:
 - Methods for deflecting the ball which were originally assigned to BlueBumpers are also found on GreenBumpers.
- In Java:
 - A sub class shares the same methods as the super class.



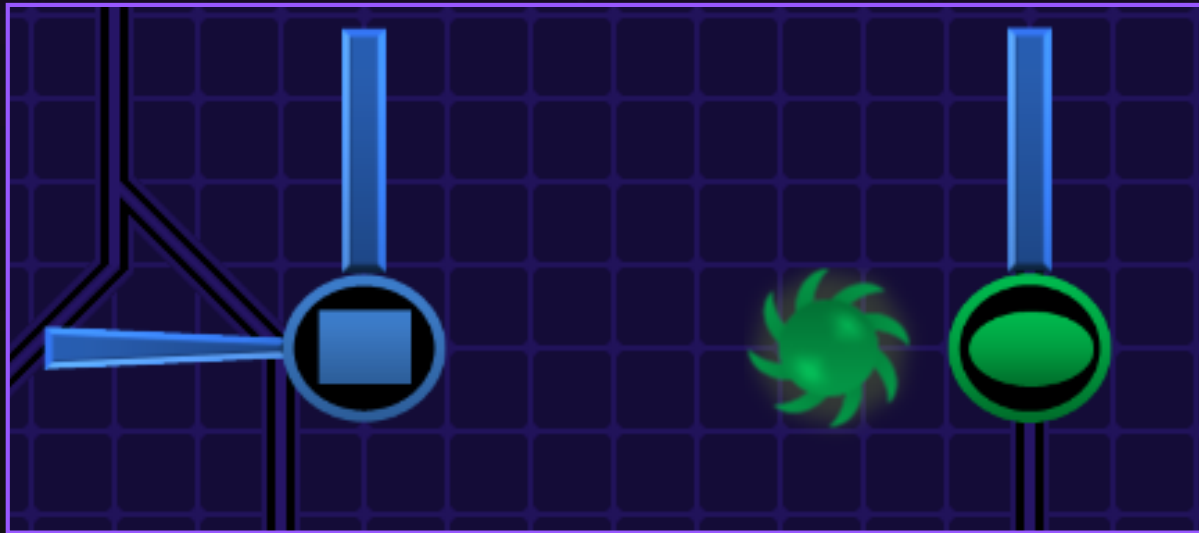
Inheritance Puzzle 2

- In the game:
 - GreenBumpers contain methods from BlueBumpers, PLUS methods unique to GreenBumpers.
- In Java:
 - A sub class may have additional methods which aren't found in the super class.



Inheritance Puzzle 3

- In the game:
 - If GreenBumpers inherit unwanted BlueBumper methods, it's possible to **override** or replace those methods.
- In Java:
 - A sub class may override the methods it inherits.



How Does this Happen?

- Inheritance is enabled in the sub class with the **extends** keyword.
 - The GreenBumper class before inheritance is enabled:

```
public class GreenBumper {  
    //Fields  
    ...  
    //Methods  
    ...  
}
```

- The GreenBumper class after inheritance is enabled:

```
public class GreenBumper extends BlueBumper {  
    //Fields  
    ...  
    //Methods  
    ...  
}
```

Further Learning

Edit code and learn more in the multi-day version of this course:

- www.oracle.com/goto/JavaGame

