Object Oriented Programming Java: Inheritance
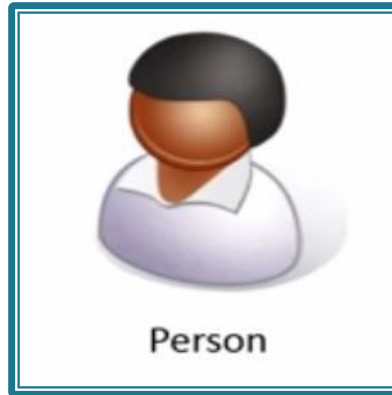
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What is inheritance?

What is inheritance?

Person

What is inheritance?

Person

Teacher

What is inheritance?

Person

Teacher

Businessman

What is inheritance?

Person

Properties
name:
age:

Teacher

Businessman

What is inheritance?

Person

Properties
name:
age:

Teacher

Properties
name:
age:
subject

Businessman

What is inheritance?

Properties
name:
age:

Person

Properties
name:
age:
subject

Teacher

Properties
name:
age:
businessCategory

Businessman

What is inheritance?

Cycle

More general ideas at the top

Plain Bicycle

GearedCycle

More specific ideas at the bottom

What is inheritance?

Properties
weight:

More general ideas at the top

Cycle

More specific ideas at the bottom

Plain Bicycle

GearedCycle

What is inheritance?

More general ideas at the top

Properties
weight:

Cycle

Properties
weight:
name:
brand:

Plain Bicycle

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More specific ideas at the bottom

What is inheritance?

More general ideas at the top

Properties
weight:

Cycle

Properties
weight:
name:
brand:
noOfGears:

Properties
weight:
name:
brand:

Plain Bicycle

GearedCycle

More specific ideas at the bottom

What is inheritance?

The more general class is called the **superclass**

The more specialized class that inherits from the super class is called the **subclass**

More general ideas at the top

Cycle

Properties
weight:

Properties
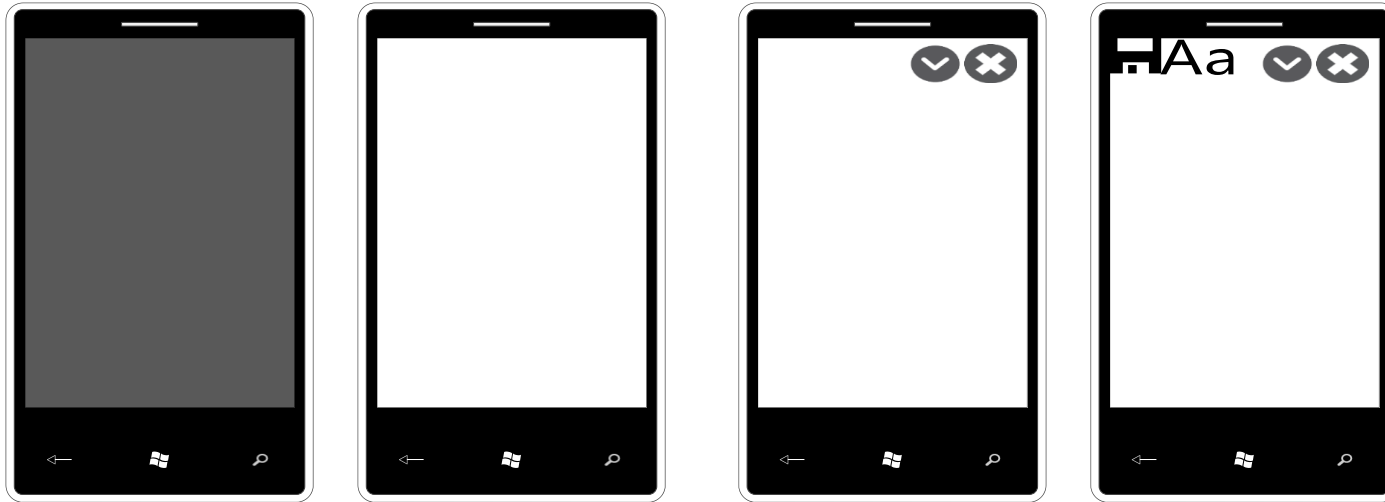weight:
name:
brand:
noOfGears:

Properties
weight:
name:
brand:

Plain Bicycle

GearedCycle

More specific ideas at the bottom

Without inheritance: A window

Window
Window
int width
int height
drawWindow()

CloseableWindow
CloseableWindow
int width
int height
int buttonWidth
int buttonHeight
drawWindow()
minimizeWindow()
closeWindow()

FullWindow
FullWindow
int width
int height
int buttonWidth
int buttonHeight
String title
int iconWidth
int iconHeight
String iconSrc
drawWindow()
minimizeWindow()
closeWindow()
drawIcon()
displayTitle()

A real example of inheritance: A window

Window
- int width
- int height
- drawWindow()

CloseableWindow extends window
- int buttonWidth
- int buttonHeight
- minimizeWindow()
- closeWindow()

FullWindow extends CloseableWindow
- String title
- int iconWidth
- int iconHeight
- String iconSrc
- drawIcon()
- displayTitle()
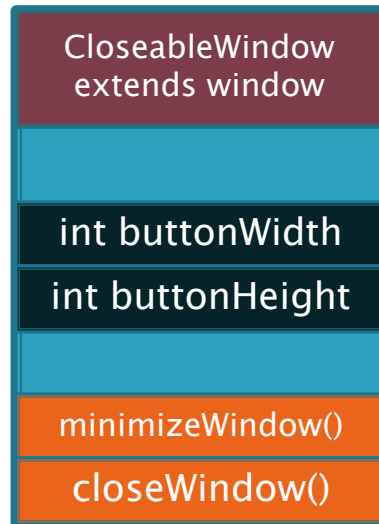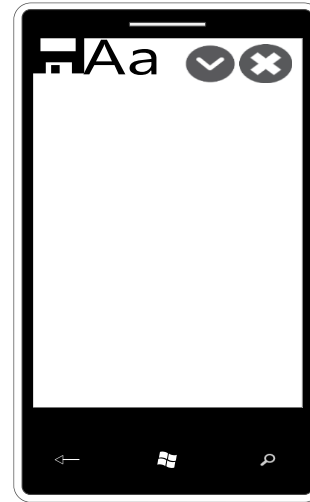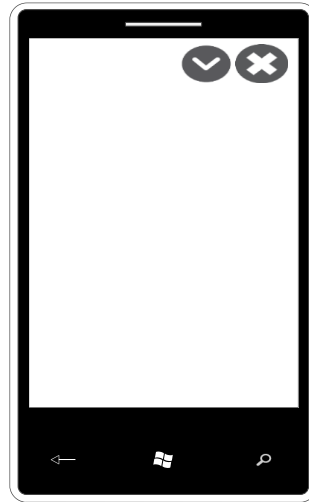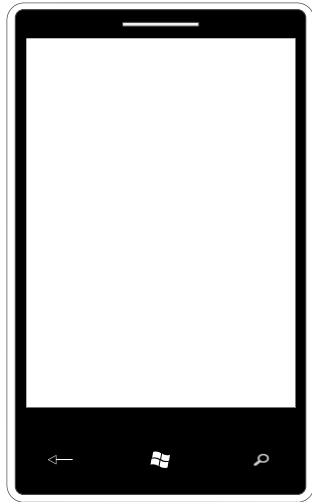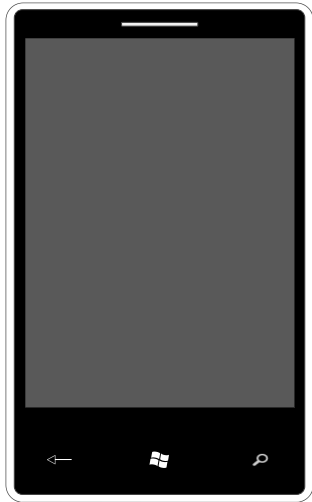
How to create inheritance?

```
class Cycle
{
    int weight;          Superclass
}



class BiCycle extends Cycle
{
    String name;         Subclass
    String brand;
}
```

Cycle

Properties
weight:

Bicycle

Properties
weight:
name:
brand:

Only specify new variables and methods that are not a part of the superclass.
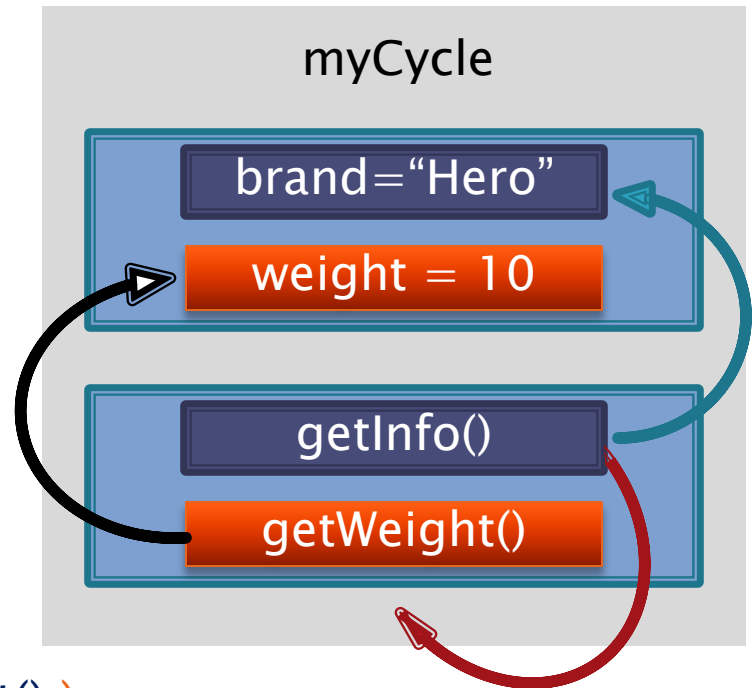
How to create inheritance?

```java
class Cycle
{

    int weight = 10;
    public getWeight()
    {
      return weight;
    }
}

class BiCycle extends Cycle
{

    String brand = "Hero";
    public void getInfo()
    {
      System.out.println(brand+" "+ getWight() );
    }
}
```

```java
BiCycle  myCycle = new BiCycle();
myCycle.getInfo();
```

myCycle

brand="Hero"

weight = 10

getInfo()

getWeight()

Subclass can not access private variables and methods of a superclass.

Reference:

Java : The Complete Reference
Seventh Edition
Herbert Schildt

Thank You