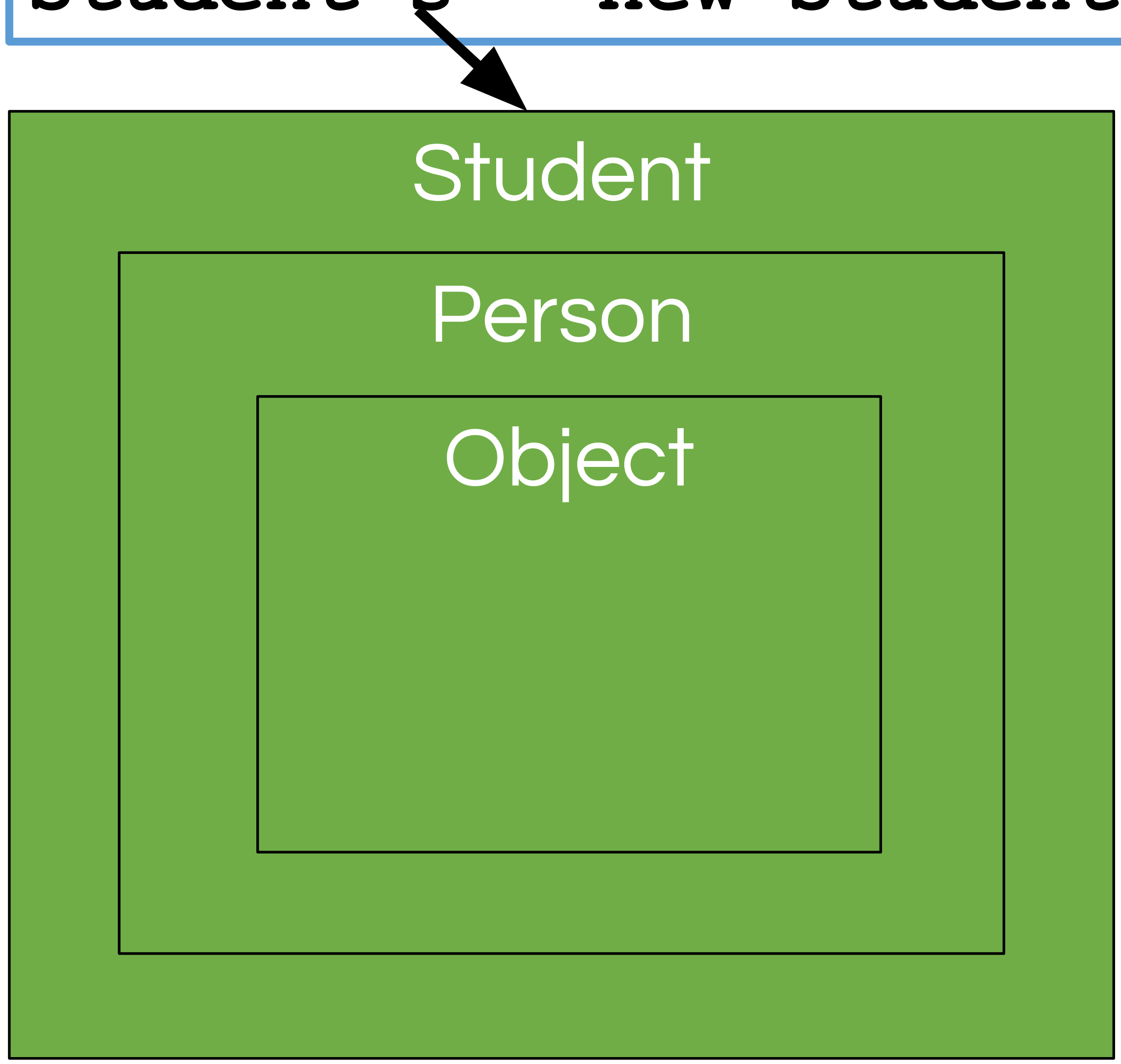
Compiler Support: Construction in Java

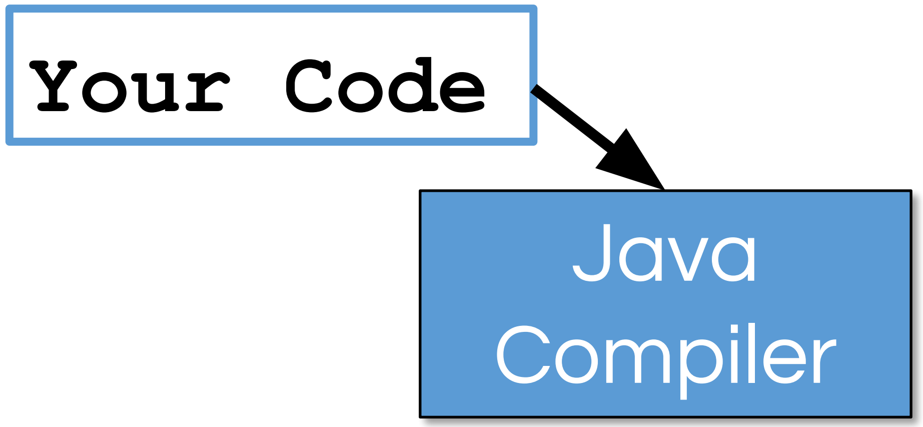
By the end of this video you will be able to…

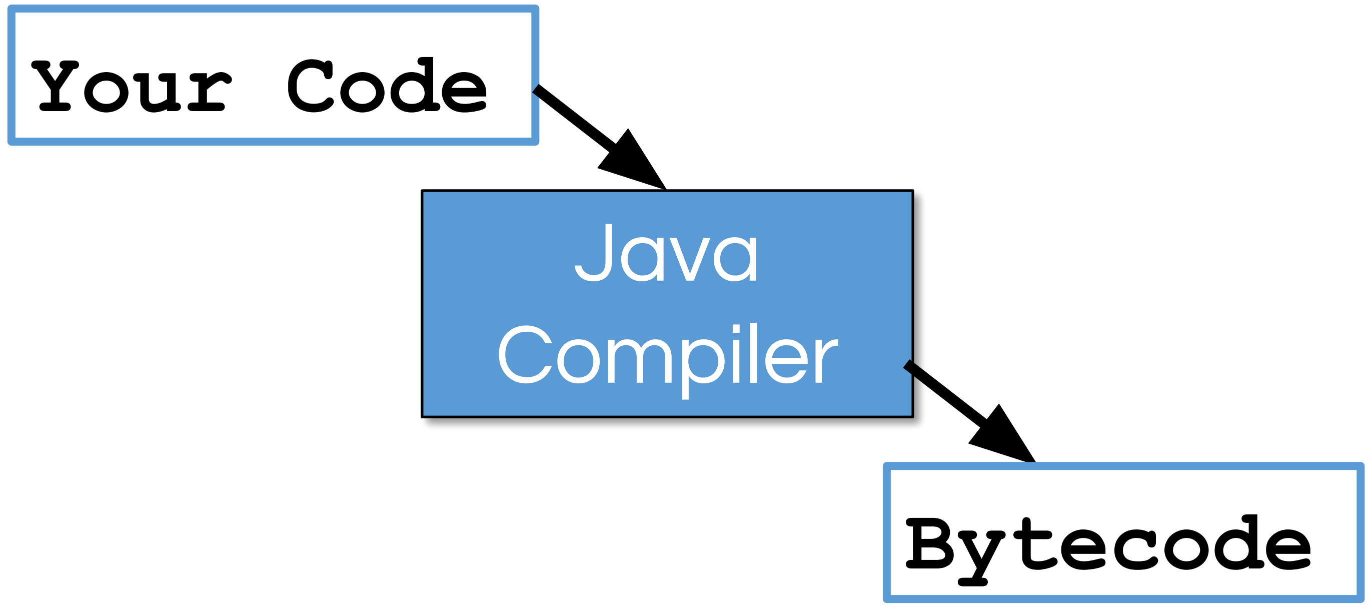
- Discuss how the Java Compiler ensures object construction occurs from the inside out

```
Student s = new Student();
```



Wait, I don’t remember extending Object...


Your Code
Java Compiler


Your Code
Java Compiler
Bytecode

```
public class Person
{
 private String name;

}
```

```
public class Person
{
 private String name;

}
```

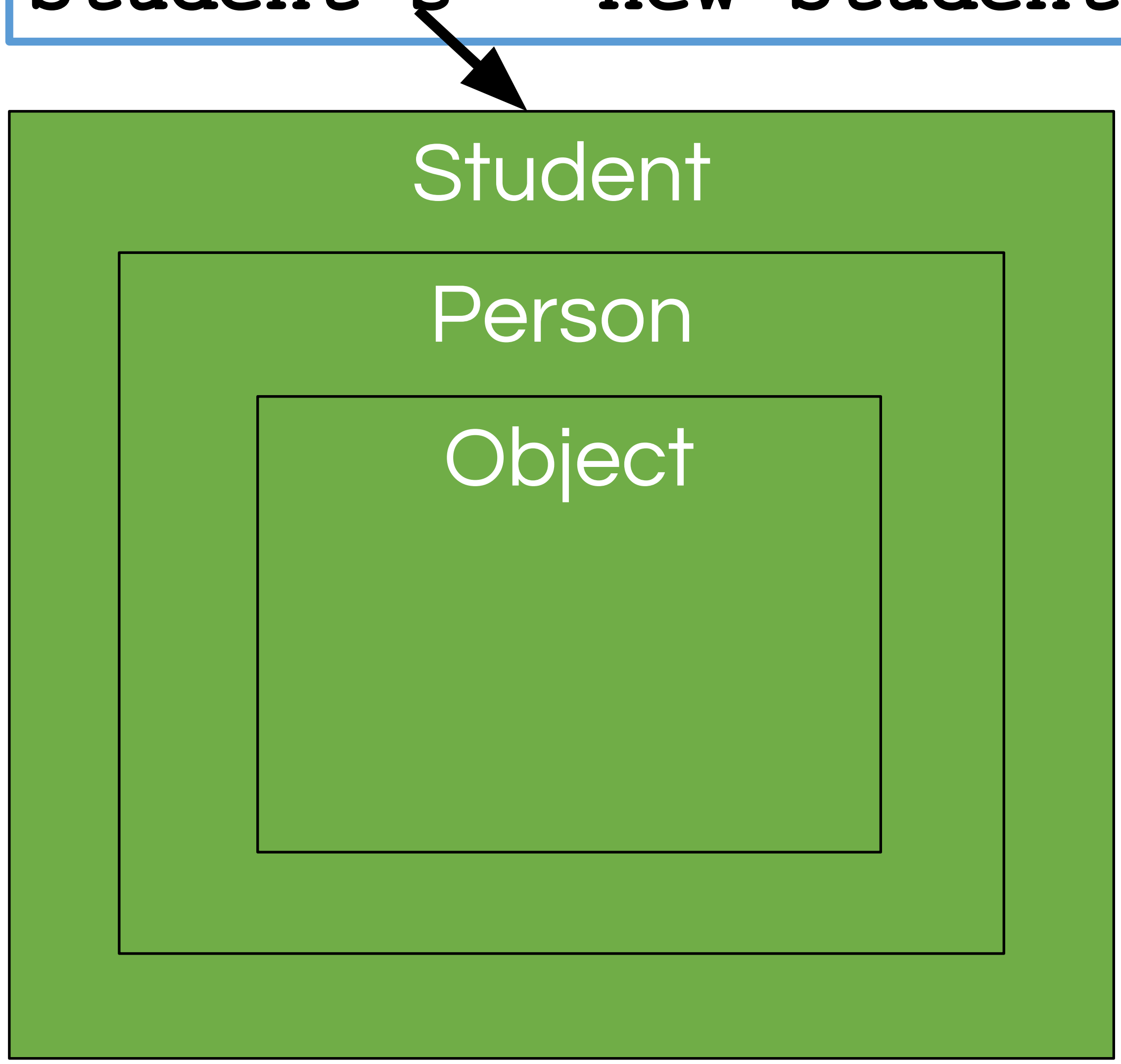
```
public class Person extends Object
{
 private String name;

}
```

Rule #1

No superclass? Compiler inserts:

`extends Object`

```
Student s = new Student();
```



But where did we call Person() and later Object()

```
public class Person
{
 private String name;

}
```

```
public class Person extends Object
{
 private String name;

 public Person() {

 }
}
```

Rule #2
No constructor? Java gives you one for you.

Rule #3

1st Line must be:

```
   this(args_opt )
```

or

```
   super( args_opt )
```

`Otherwise, Java inserts:`

```
   "super();"
```

Rule #3

1st Line must be:

$\texttt{this(args}_{\texttt{opt}}\texttt{)}$

or

$\texttt{super(args}_{\texttt{opt}}\texttt{)}$

```
Otherwise, Java inserts:
   "super();"
```

Same class constructor call

Rule #3

1st Line must be:

```
   this(args_opt )
```

or

```
   super( args_opt )
```

```
Otherwise, Java inserts:
   "super();"
```

Same class constructor call

Super class constructor call

```java
public class Person
{
 private String name;

}
```

```java
public class Person extends Object
{
 private String name;

 public Person() {
     super();
 }
}
```

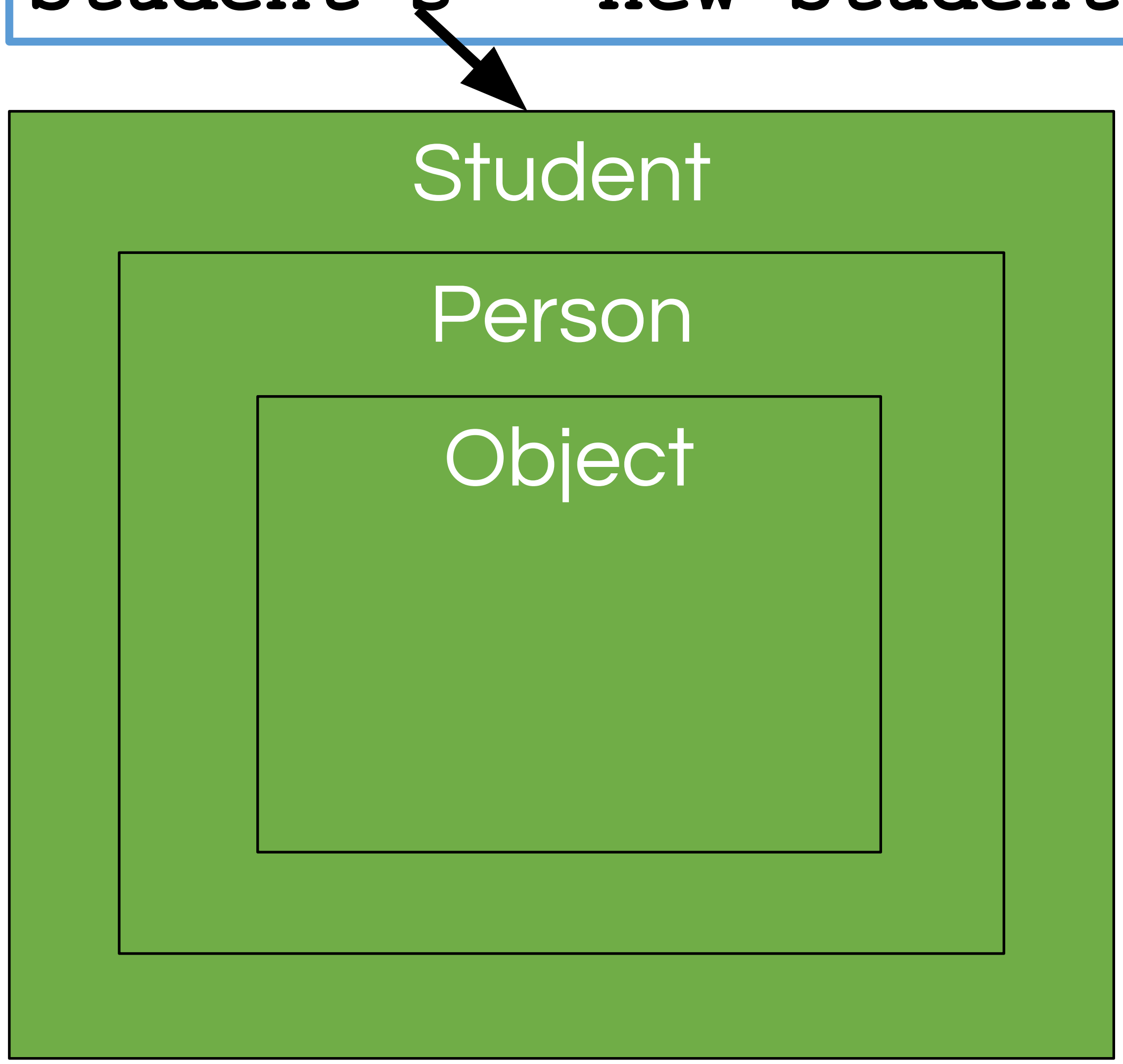
```
public class Student extends Person
{
}
```

```
public class Student extends Person
{





}
```

```
public class Student extends Person
{
}
```

```
public class Student extends Person
{
 public Student()
 {
   super();
 }
}
```

```
Student s = new Student();
```



The compiler makes this happen!

```
public class Student extends Person
{
}
```

```
public class Student extends Person
{
 public Student()
 {
   super();
 }
}
```

But how do we initialize `name` ?