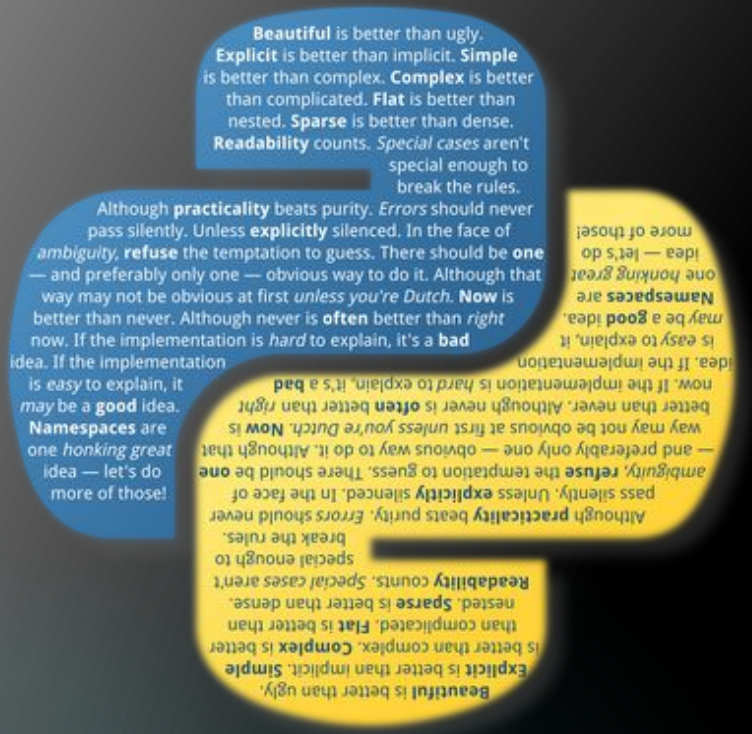
IS612 Introduction to Coding
Spring 2021



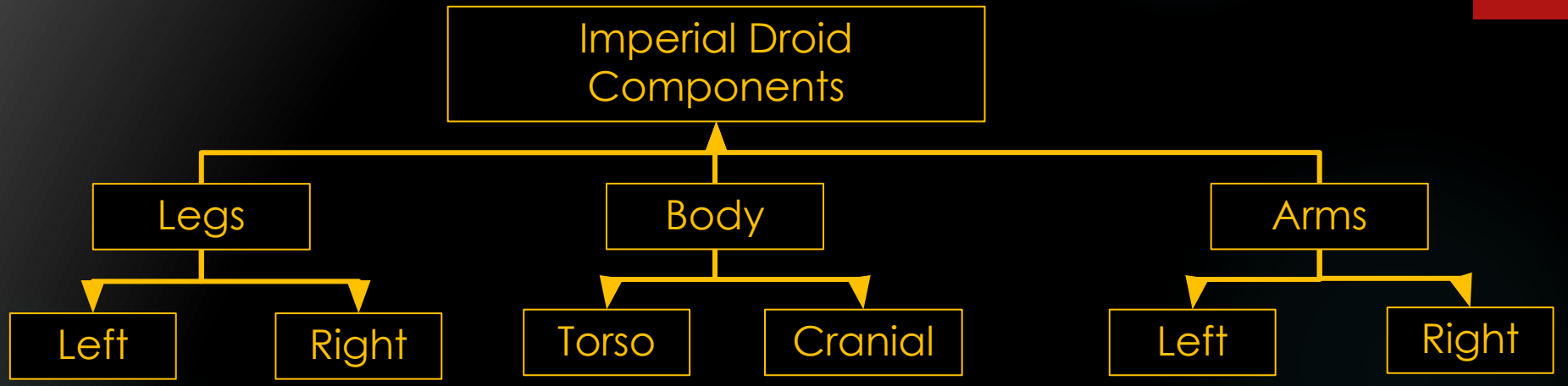
Python Programming

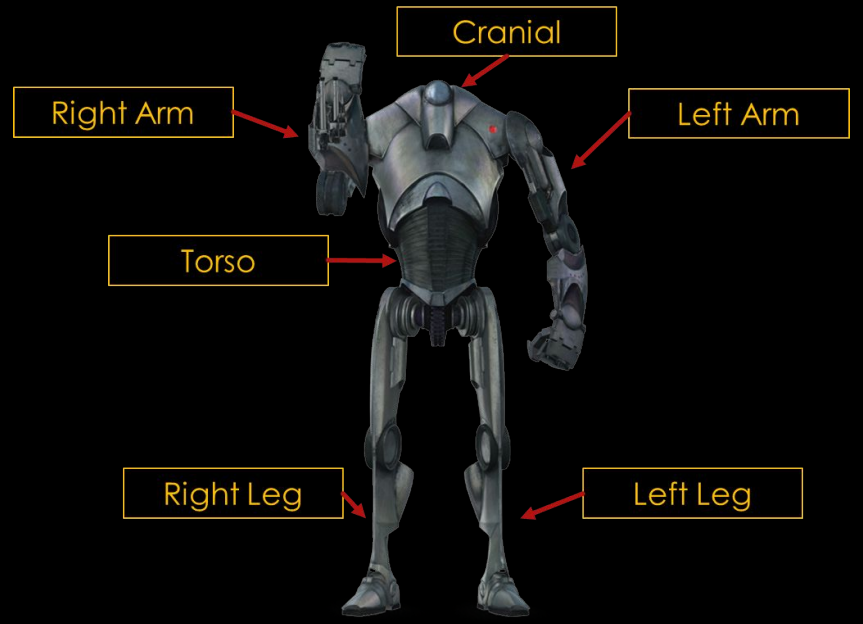
PRACTICE FINAL EXAM

General

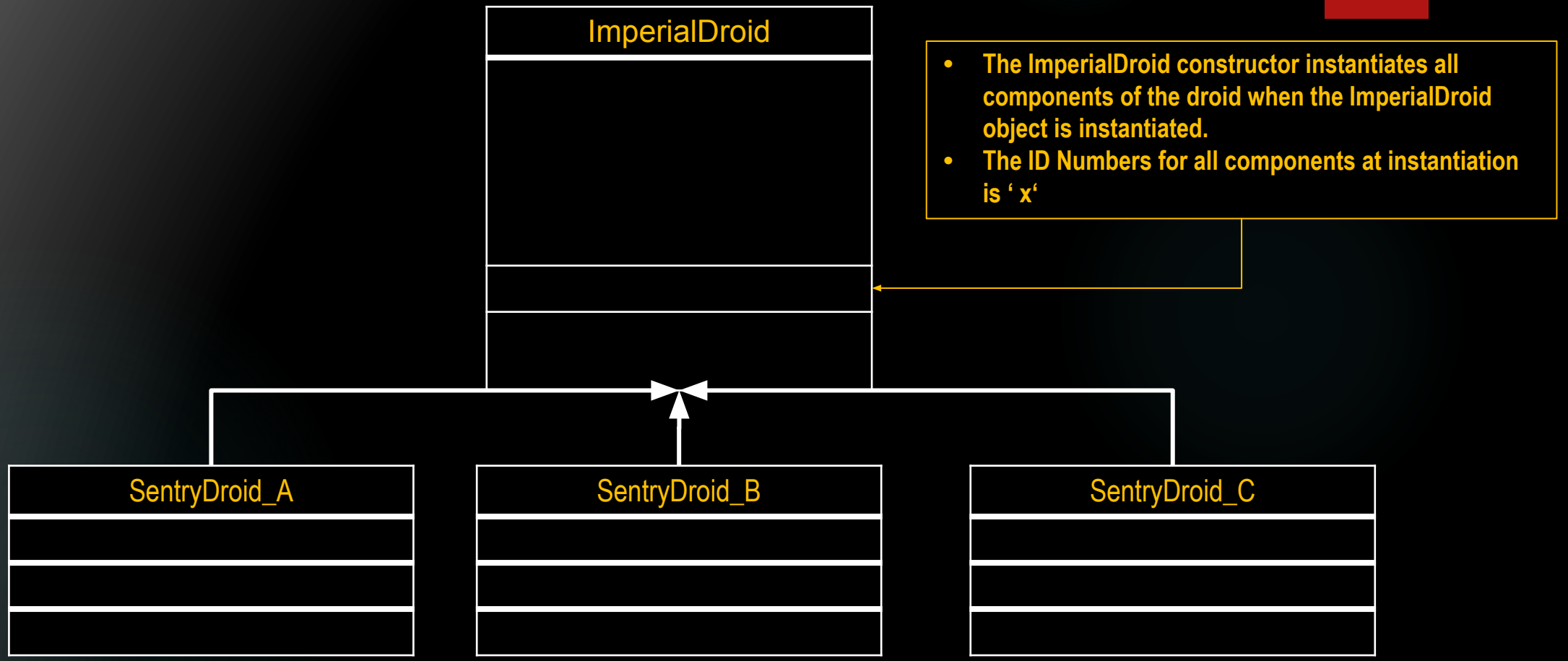
- This is your **Practice Final Exam** it is worth **4 extra credit points** towards your final exam.
- You have until **6 PM Monday April 26** to submit the practice exam on BrightSpace.
- Create all the Python code necessary in a **single** .py script… [***lastname***]**.py**
- Follow the class diagrams for each class as well as the methods described in the Method Specification tables.
- Create and execute the code shown on slide 12…you **may not** add any additional code to the main method.
- You **may not** create **any** additional methods or utilize **any** imported modules (other than **math**) to create the instance and static methods required for these classes.
- Ensure that your output is **formatted as shown** in the example on slide 11.

Imperial Droid



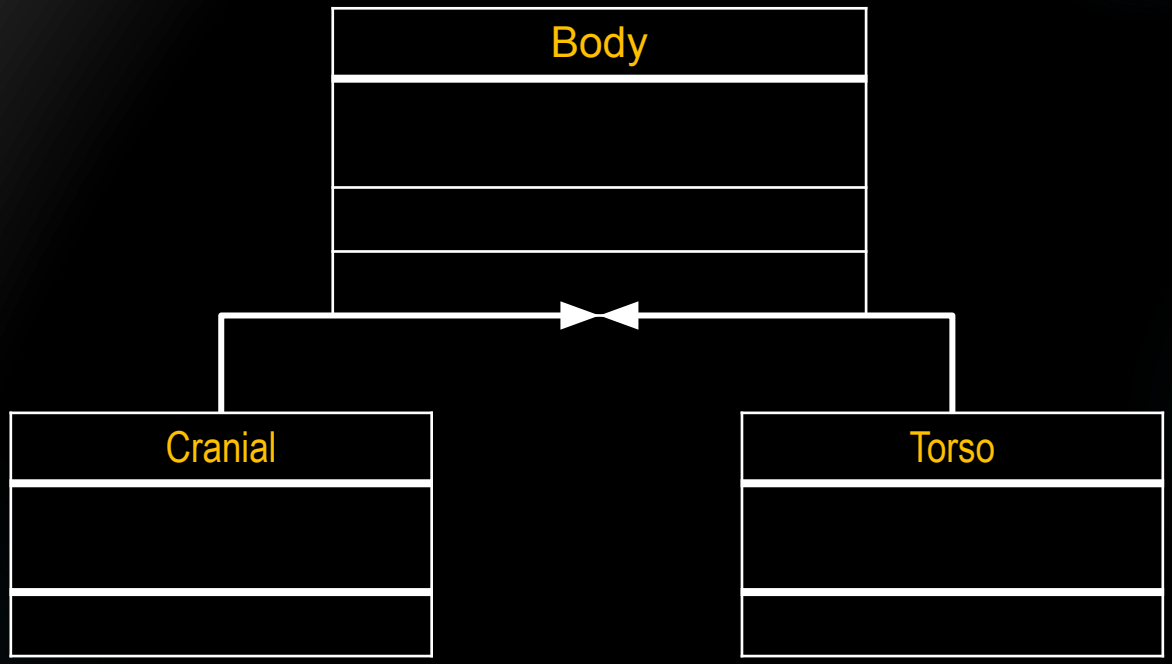


ImperialDroid Class

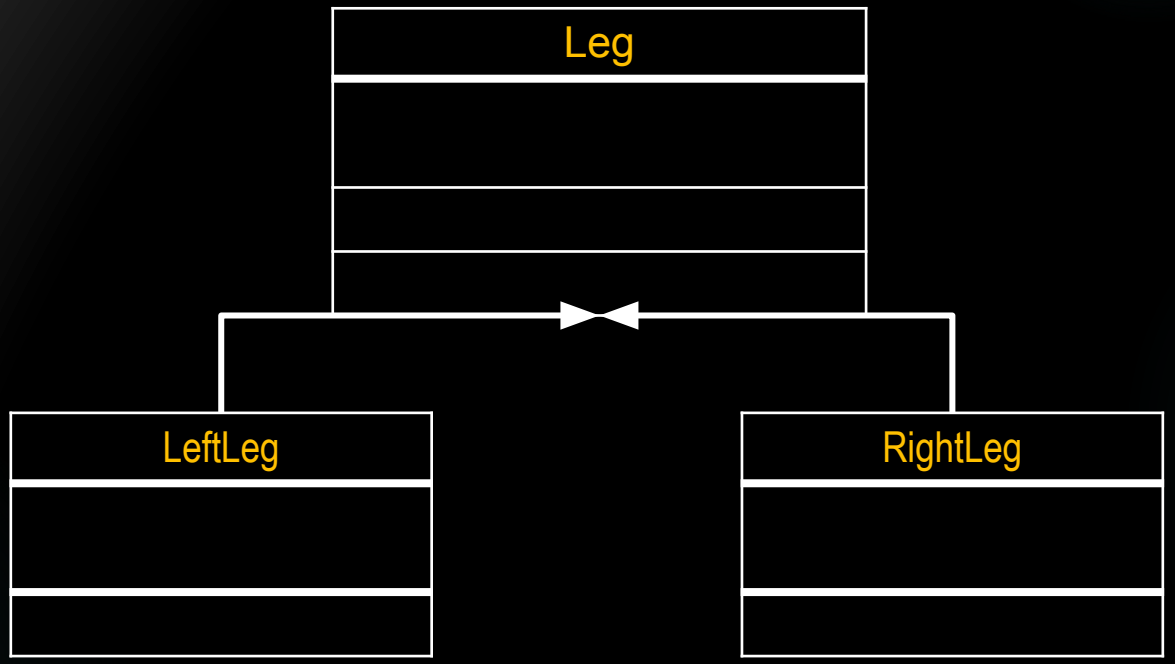


- The ImperialDroid constructor instantiates all components of the droid when the ImperialDroid object is instantiated.
- The ID Numbers for all components at instantiation is ‘ x‘

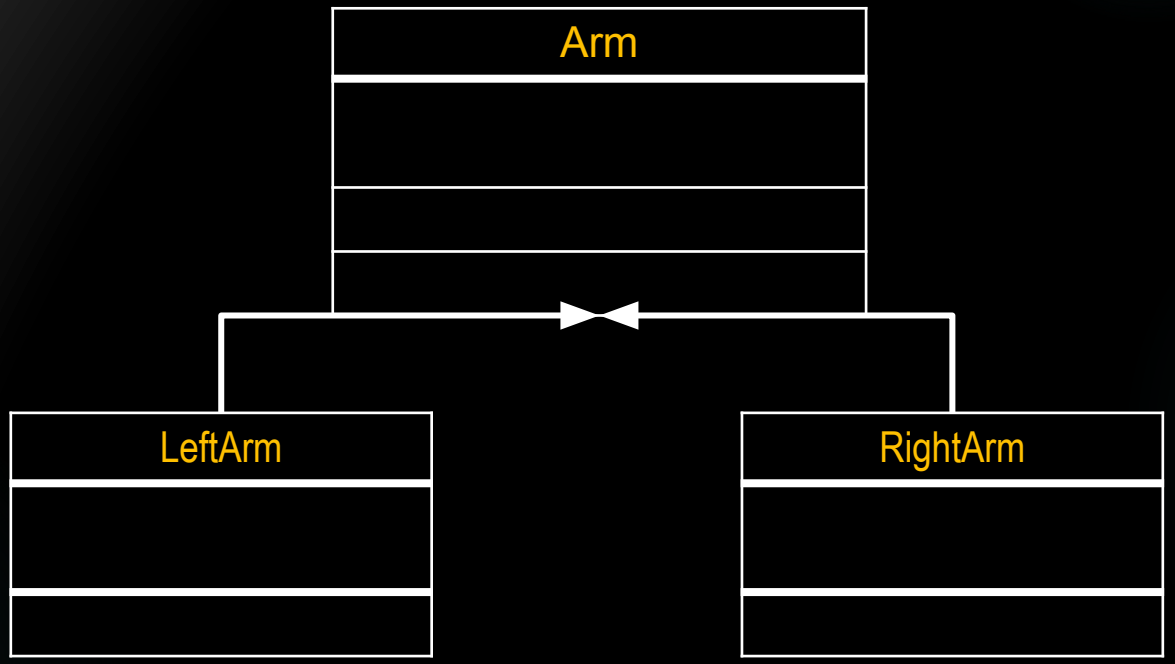
Body Class



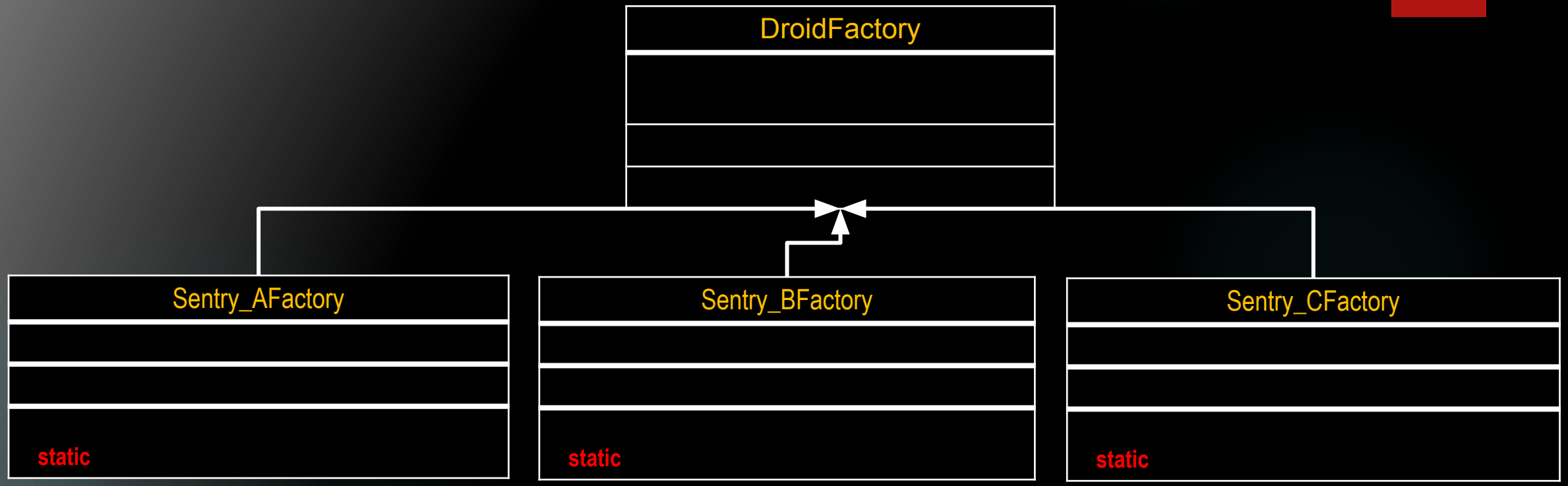
Leg Class



Arm Class



DroidFactory Class



- When any type droid factory creates a droid, its IDNumber is set to ‘x’

Class Methods

Method Specifications		
Method	**Specification**	**Class**
static		
static		
static		

Special Instructions


```
def getOperational(self):
    return self.__Operational

def setOperational(self, v):
    self.__Operational = v
```

Format all getters and setters in this manner

The displayInfo() for ImperialDroid would not contain the header.

```
***Sentry Droid Alpha Information***
Droid ID: x
Droid Type: Alpha
Cranial: True
Torso: True
Left Arm: True
Right Arm: True
Left Leg: True
Right Leg: True
```

Display droid attributes in this format for all methods that require displaying information about droids.

Testing

PFinalExam_2021S.py - C:\Users\msgth\OneDrive\Z_PythonProgrammingSpring2021\PFinalExam_2021S.py (3.6.1)

File Edit Format Run Options Window Help

```
def main():
        DFactory1 = Sentry_AFactory('F1')
        droidList_A = DFactory1.buildDroids(2)
        Sentry_AFactory.displayDroids(droidList_A)
        droidList_A[0].setDroidID('Lock-1')
        droidList_A[0].getLegs()[0].setOperational(False)
        print()
        droidList_A[0].runDiagnostic()

main()
```

Create a main method that contains ONLY the code shown here.

Python 3.6.1 Shell

File Edit Shell Debug Options Window Help

```
***Sentry Droid Alpha Information***
Droid ID: x
Droid Type: Alpha
Cranial: True
Torso: True
Left Arm: True
Right Arm: True
Left Leg: True
Right Leg: True
***Sentry Droid Alpha Information***
Droid ID: x
Droid Type: Alpha
Cranial: True
Torso: True
Left Arm: True
Right Arm: True
Left Leg: True
Right Leg: True

Lock-1 is Malfunctioning
>>>
```

Ln: 25 Col: 4