

IS612 Introduction to Coding Spring 2021

Beautiful is better than ugly.
Explicit is better than implicit. Simple is better than complex. Complex is better than complicated. Flat is better than nested. Sparse is better than dense. Readability counts. Special cases aren't special enough to break the rules.

Although practicality beats purity. Errors should never pass silently. Unless explicitly silenced. In the face of ambiguity, refuse the temptation to guess. There should be one — and preferably only one — obvious way to do it. Although that way may not be obvious at first unless you're Dutch. Now is better than never. Although never is often better than right now. If the implementation is hard to explain, it's a bad idea. If the implementation is easy to explain, it may be a good idea. Namespaces are one honking great idea — let's do more of those!

Beautiful is better than ugly.
Explicit is better than implicit. Simple is better than complex. Complex is better than complicated. Flat is better than nested. Sparse is better than dense. Readability counts. Special cases aren't special enough to break the rules.
Although practicality beats purity. Errors should never pass silently. Unless explicitly silenced. In the face of ambiguity, refuse the temptation to guess. There should be one — and preferably only one — obvious way to do it. Although that way may not be obvious at first unless you're Dutch. Now is better than never. Although never is often better than right now. If the implementation is hard to explain, it's a bad idea. If the implementation is easy to explain, it may be a good idea. Namespaces are one honking great idea — let's do more of those!

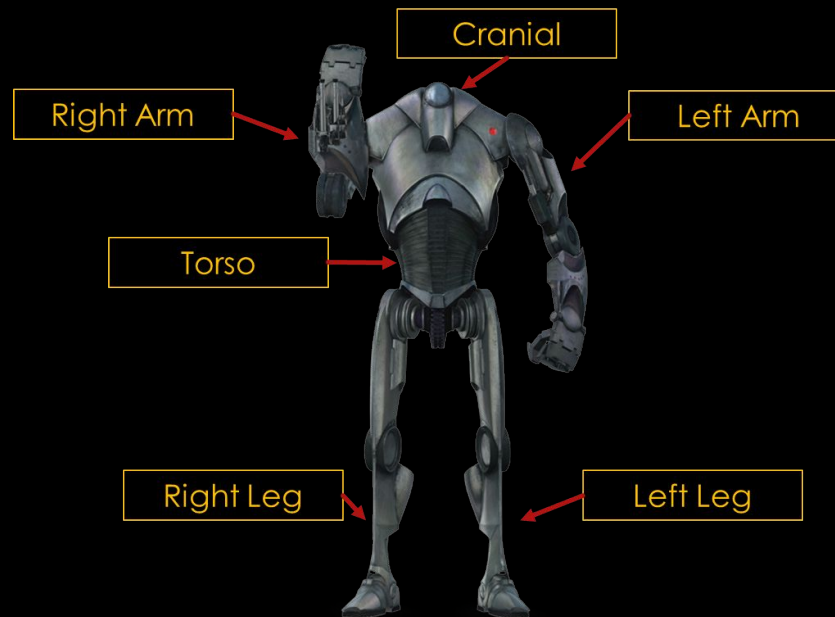
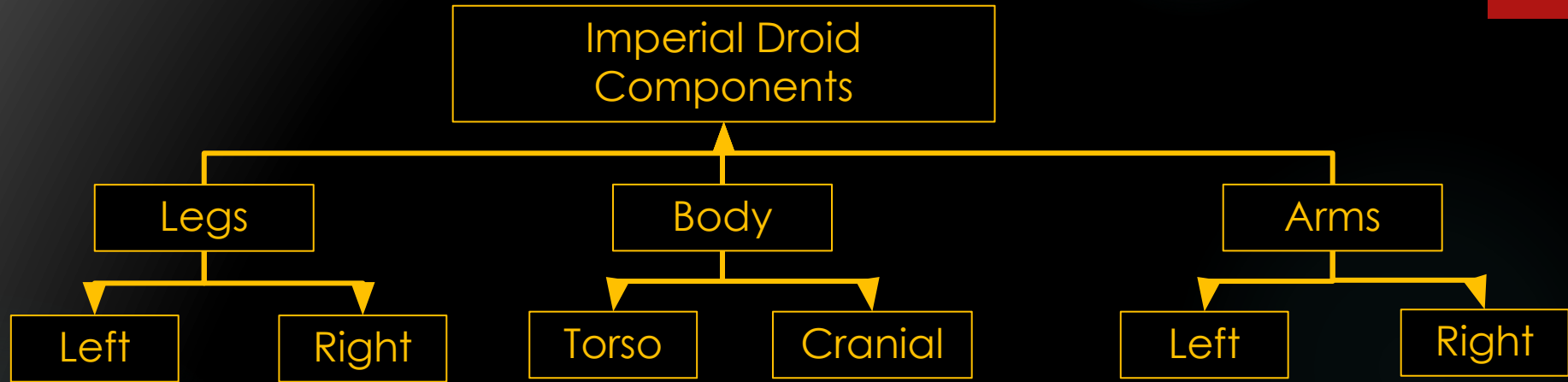
Python Programming

PRACTICE FINAL EXAM



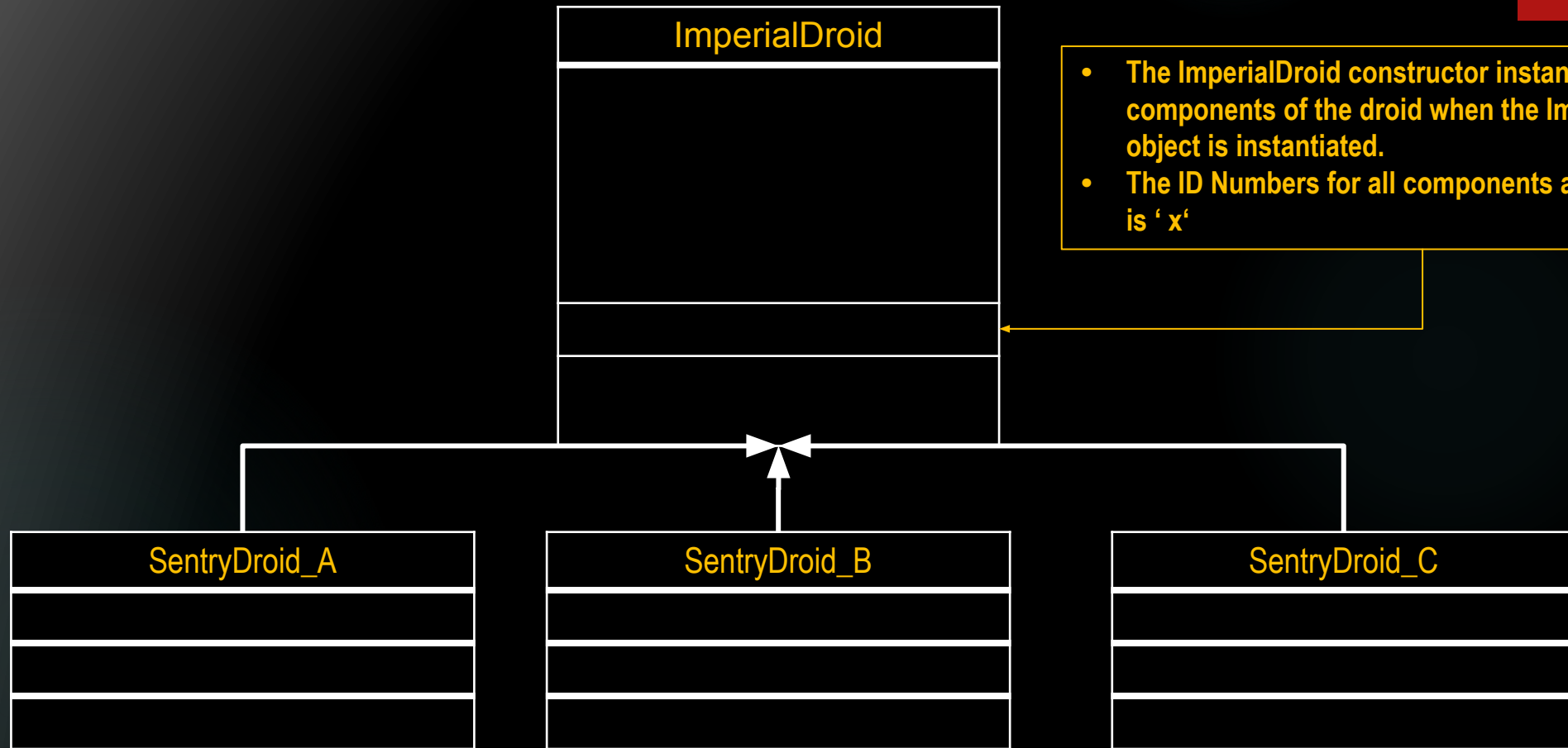
- This is your **Practice Final Exam** it is worth **4 extra credit points** towards your final exam.
- You have until **6 PM Monday April 26** to submit the practice exam on BrightSpace.
- Create all the Python code necessary in a single .py script... [**lastname**].py
- Follow the class diagrams for 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



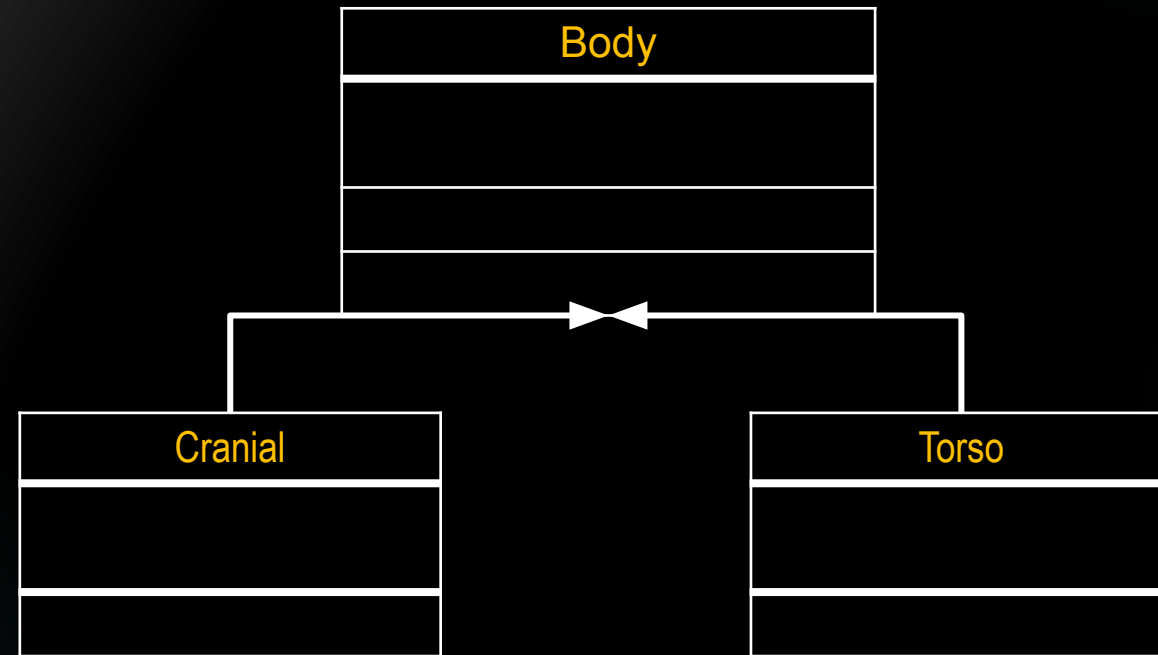
ImperialDroid Class

4



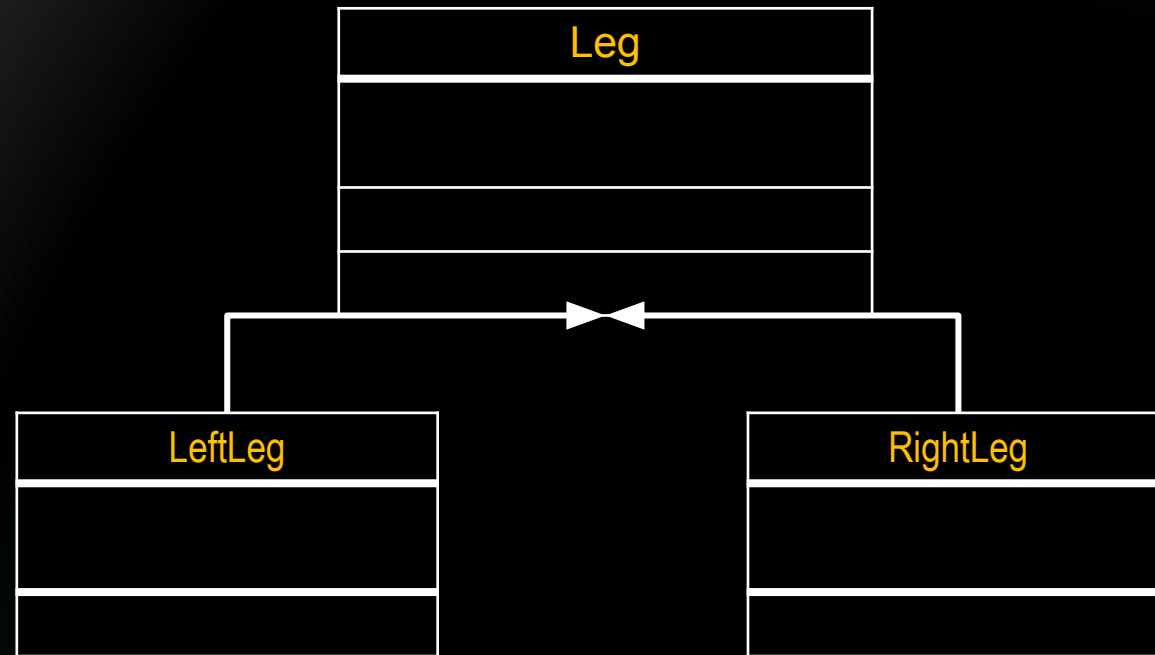
Body Class

5



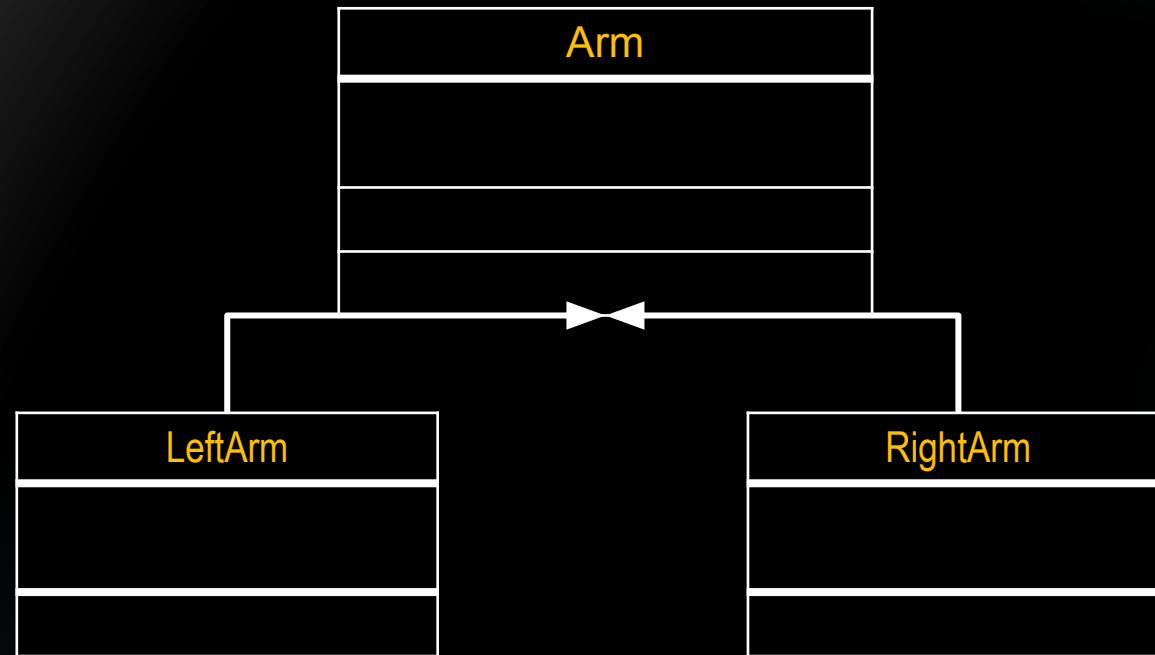
Leg Class

6

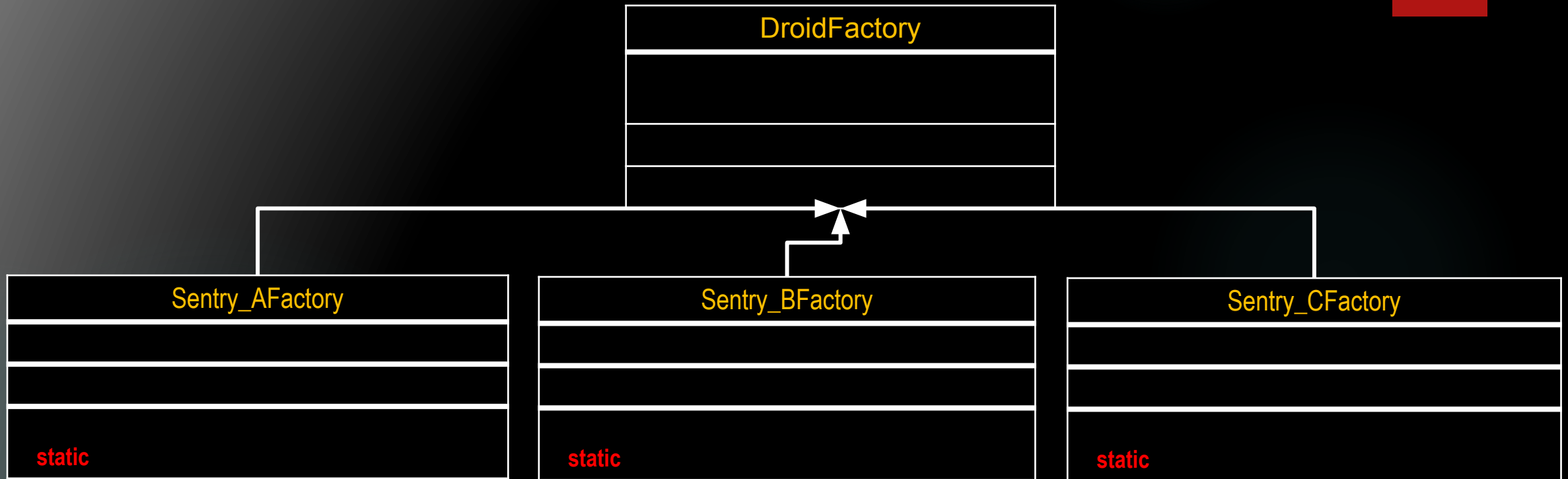


Arm Class

7



DroidFactory Class



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

Special Instructions

10

```
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

11

```
*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
>>>
```