PageComposition Report

Inheritance

The program contains a class for each *<format>* type. With *Fill* being a **superclass** and the other 4 *<format>s* inheriting from *Fill*. This is because each of the *<format>s* bar *Fill*, contain various identical attributes and the need to employ a *Fill* type format within their own formatting algorithm to accomplish their own formatting.

Encapsulation

The *<format>* classes as aforementioned have a **superclass/subclass** relationship. As such, all methods and attributes in the superclass are **protected.** Besides the *Final()* method. And the methods and attributes in the subclasses are all **private** besides the *Final()* method.

Polymorphism

Each of the *<format>* classes have a *Final()* method. The Fill superclass has the **virtual Final()** method modifier and contains its class specific implementation. Whereas the other *<format>* classes have the **override Final()** method modifier to implement their own class specific needs.

Main()

The program starts by reading the XML file. It then instantiates the **HUB** class, which stores the values read from the **input.xml** file elements. The **HUB** class then filters through the collection of strings from the *<words>* element, and creates a collection of words which meets the criteria to be classed as words. The program then identifies what type of formatting is required based on the *<format>* element. It then instantiates the relevant **class** and makes a call to the **Final()** method. The method called is either the **virtual** or **overridden** implementation dependent on the *<format>*. The *Final()* method contains the implementation required to format according to the *<format>* as described in the ACW. The *Final()* method makes calls to various **private** methods within its subclass, if <format> is not Fill. And or **protected** methods in the **superclass** and contains some implementation itself to finally produce a collection of lines. This collection of lines is then written to a **page.txt** file through the use of a **protected** method in the **superclass**.

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