**GanttProject Mood Metrics**

**-AHF (Attribute Hiding Factor):**

Measures how variables/attributes are encapsulated in a class.

Ideally, attributes should only be visible to their respective classes so the closer to 100% the AHF is the better. For this project, AHF=88% which is somewhat close to 100%, a lower value would be more alarming.

**-AIF (Attribute Inheritance Factor):**

AIF is the ratio between inherited attributes and the total number of attributes in a class.

Since variables should be private (mostly atleast) the desired value for AIF should be close to 0%. This project has an AIF=75.5%, meaning there are many variables that are not declared as private and are thus being inherited.

**-CF (Coupling Factor):**

Measures the relation between the actual number of couplings and the maximum number of possible couplings. One class A is coupled to another B if A calls methods or accesses variables of B (inheritance is ignored, since classes are naturally coupled to their ancestors).

For this project we’ve registered CF=2.2% which is very acceptable as we want to keep coupling low since it increases complexity and reduces encapsulation and potential reuse, as well as understandability and maintainability.

**-MHF (Method Hiding Factor):**

Measures how methods are encapsulated in a class.

A very low MHF is an indicator of insufficiently abstracted implementation while a very high MHF indicates low functionality and/or a high proportion of specialized methods that can’t be reused.

For this project we’ve registered an MHF=43.7% which is acceptable as we want some balance between abstraction and functionality, as discussed previously.

**-MIF (Method Inheritance Factor):**

MIF is the ratio between inherited attributes and the total number of attributes in a class.

Ideally, we want a reasonable range that’s neither too low (indicates lack of inheritance or too many Overrides) nor too high (indicates unnecessary inheritance) and we’ve achieved that with a MIF=50.7% for this project.

**-PF (Polymorphism Factor):**

Measures the relation between the number of method overrides and the maximum number of possible method overrides.

PF should be low, limited by a lower bound of 2.7% and an upper bound of 9.6%. We have registered a PF=31% which may be an indicator of excessive complexity (derived from several alternative methods being able to execute for one call statement).

**Helpful sources:**

<https://www.aivosto.com/project/help/pm-oo-mood.html>

<https://www.javatpoint.com/mood-factors-to-assess-a-java-program>