MetroMadness.java

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| Advantages:  **OOD:**   * Organized * Good abstraction * Well delegated   GRASP**:**   * EXPERT: Good use of expert pattern, when it instantiates objects, it has all necessary information need. It has appropriate responsibilities * High cohesion, because the responsibilities are focused, and easy to comprehend |
| **Disadvantages:**  **OOD:**   * Visibility not specified * Constant not specified * Inappropriate assignment of viewport\_width in create method, with same name * Repeated use of same value with different name * Goes pass 80 characters per line * Magic strings / numbers, did not make use of constants * No documentation for some methods * Inefficient use of method calling (camera.update in resize())   GRASP:   * High coupling, relies on many different classes |

NOT A CONTROLLER

Simulation.java

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| **Advantages:**  **OOD:**   * Organized * Good abstraction * Well delegated   GRASP:   * CREATOR : It creates the appropriate array list for its information, for lines, stations and trains * EXPERT : it has the information needed to create the objects i.e MapReader reading XML file data and simulation assigns that data * Low Coupling because other classes do rely on simulation and simulation does not rely on many classes * High cohesion, because it delegates the responsibilities well * Is a controller, so low coupling, because it stores and creates the appropriate class objects |
| **Disadvantages:**  **OOD:**   * Visibility Modifiers, poor encapsulation, objects should be private * Naming conventions, invalid use of names under simulation constructor (m) * No documentations |

MapReader.java

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| **Advantages:**  **OOD:**   * SAME THINGS   **GRASP:**   * Low coupling : because MapReader only depends on it being called by Simulations * High Cohesion: focused on just reading the data and storing it |
| **Disadvantages:**  **OOD:**   * Visibility, poor encapsulation, objects should be private * Magic strings, did not use constants, magic numbers * Try Catch exceptions is not specified in details * Documentations * Duplication of train array list in both simulation and map reader, simulation should pass the array list into map reader as a parameter under process method   **GRASP:**   * CREATION & EXPERT : The process method does not follow the creation pattern due to invalid use of file string (MapReader – process()) * EXPERT : Because it merely processes the information upon request from the XML file |

NOT A CONTROLLER

Line.java

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| **Advantages:**  **OOD:**   * Follows OO design well apart   **GRASP:**   * CREATOR & EXPERT: follows patterns well as information needed to instantiate an object is always either stored or given in parameters. |
| **Disadvantages:**  **OOD:** Attribute visibility modifiers.  **GRASP:**   * CREATION & EXPERT : The process method does not follow the creation pattern due to invalid use of file string (MapReader – process()) |