CS3330: Lab 9

Due 48 hours after your lab ends

Purpose:

- Becoming familiar with a UML diagramming tool
- Practice designing a system from a given narrative
- Learn Object Oriented Design

Directions:

You are to use either Violet UML or draw by hand the UML class diagram to complete this assignment. You have seen many of these class diagrams, so make sure to review the symbols and the different arrow/diamond notations. The Lab 9 powerpoint slides should cover most of the newcomer experiences with Violet UML. When completed, you will need to save your UML in png format or print the UML class diagram out.

Submission:

`cs_submit CS3330_LAB-<section> LAB9 <pawprint>.cs3330.lab<#>.png`
OR
Turn the printed out UML class diagram in the TAs mailbox in EBW 201.

Narrative:

Guilliams Transatlantic Railroad Company's IT department is outsourcing work to our company, 1337 Software Developer, for an UML class diagram. Our design needs to meet all the needs of the customer. Our client has given us an explanation of what they want in the design.

Their company transports important raw materials, products, and passengers across the country via engines pulling freight cars on pre-determined routes. The company's engines have a unique number between 0 and 1000, a route to travel from city to city, a color, and can have 0 to many freight cars attached. The engine can add and/or remove freight cars. An engine can be either a steam, diesel, or magnetic engine. All these engines must be able to start, move, and stop. Each of these engines start, move, and stop differently.

The company's freight cars can be one of the following types: passenger, military, coal, iron, or natural gas. Also, every freight car has a number of axles and the weight in tons associated to it.

Lastly, a route for an engine can be 1 to many city names. The list consists of all the possible cities the train can travel to before having to refuel. A route also has a number that corresponds with the number of cities it can visit.

Grading: UML class diagram worth 30 points

No late submission accepted and missing header information on the digital submission or paper submission is a zero. If you need help with putting header information on your UML class diagram, email your TA. No excuses allowed.

Rubric:

10 points: Does the UML class diagram contain inheritance
5 points: Does the UML class diagram contain polymorphism
5 points: Does the UML class diagram contain a ‘has-a’ relationship
10 points: Does the UML class diagram make sense

BONUS: Bonus given in lab