

Design: Circus train

By: Simeon Markov

Institution: Fontys UAS

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Introduction

This document presents the UML class diagram as well as touches on the design of the implementation (classes structuring, interfaces...).

Design guide

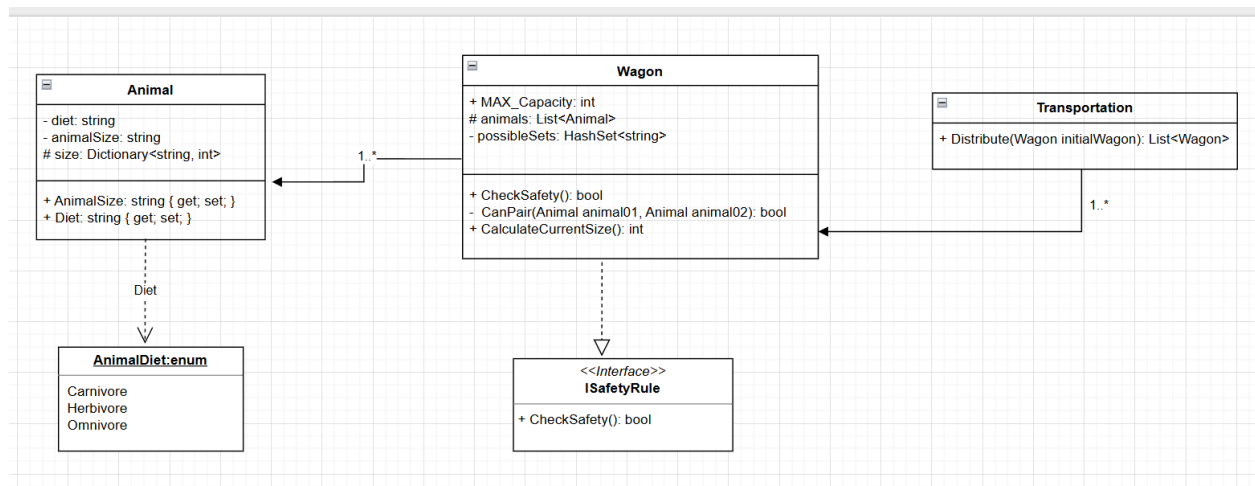
Input

The program may read the input from the user or it could be hard-coded (for testing purposes).

Output

Output is simple with printing only the necessary information to the console. It should be readable with clear messages for the user.

UML class diagram



The diagram illustrates the behavior and the relationships in the program. Breaking down the diagram:

Class 'Animal': Parent class, containing all the details for the animals, depending on a enumeration for checking valid animal diets.

AnimalDiet: Contains all the valid diets that an animal could have.

Class 'Wagon': Contains all attributes and methods for the wagon. It implements an interface, which contains a safety rule method ensuring possible sets of animals. It accepts a list of animals as an input.

Interface 'ISafeRule': Contains an abstract safety rule method.

Class 'Transportation': A static class, which has a method for the transportation logic of one or multiple wagons.

Conclusion

The end product is easier to understand and maintain with clear reporting about what pair of animals are going to be transported and which animals cannot be transported with other animals together.