

Assignment 7

Lucas Franceschino

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1 Remarks

1.1 Screenshots

I took some screenshots, which are in the *Screenshots* directory.

1.2 Event handling

To handle client events on SVG image, I use list of tuple (Integer, Function). The integer represent a specific action, while Function represent the actual action. The implementation is in *Object.DrawObject*.

2 Description of modules

2.1 Directory Objects

This directory contains modules related to *Elements* (*Section* and *Point*) or *Train* and how to draw them.

2.1.1 Module DrawObject

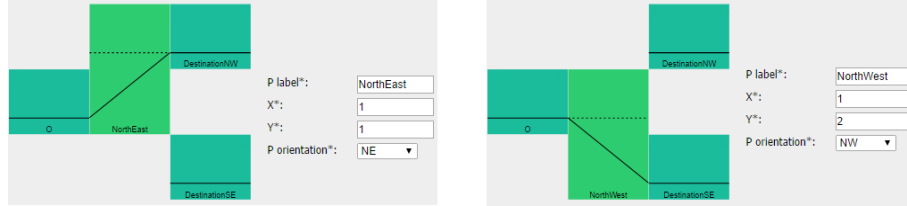
It define a class *DrawableObject*. Also, it define a function *drawObjects* working for any *DrawableObject*.

2.1.2 Module Element

An *Element* is an instance of *DrawableObject* and can either be a *Section* or a *Point*. It has a label, a position and other specific things. This module define structures for *Element*, *Section*, *Point*, and define few functions to manipulate any *Element*.

Choice for *Section* A section has zero, one, or two signals (using two Maybe Bool fields).

Choice for *Point* A *Point* has an orientation, it can be either north west or north east: either it is a line connecting a left section to a north west other section, either it is a line connecting a right section to a north east other.



2.1.3 Module Train

An *Train* is an instance of *DrawableObject*. A train has a state (not moving, moving, destroyed) and a direction (left or right).

2.2 Directory TrainGui

This directory contains modules to handle how is drawn the GUI for each roles.

2.2.1 Module ChooseRole

2.2.2 Module DriveTrain

2.2.3 Module TrackController

2.2.4 Module TrackDesigner

2.2.5 Module MakeTrainMove

This module watch the time to animate trains movements if necessary. It provide a function *makeTrainMove* looping on watching time. If no any train moves, then it stops looping, and when a train driver will put his train in motion, the *makeTrainMove* function is called again.

To prevent multiple instance of *makeTrainMove*, a shared boolean value *resetAreTrainsMoving* is used.

This function also detects trains collisions and train out of rails.

2.3 Module GlobalVisualStyle

Define visual style of SVG drawn objects.

2.4 Module State

2.5 Module ImageTask

This module is the bridge from *TrainGui* modules to *Objects* ones. Indeed, *ImageTask* is the task generating images.

2.6 Module **RailwayGame**

It is the main module, which directly launch *chooseRole* routine.

There is two main directories: *Objects* and *TrainGui*.