Modelling with a projectional editor

Jetbrains MPS and Gentleman

Introduction

In this experiment, you will accomplish several modelling tasks using the projectional editors **Gentleman** and **Jetbrains MPS**.

By taking part in this experiment, **you give your consent to the recording** of the following:

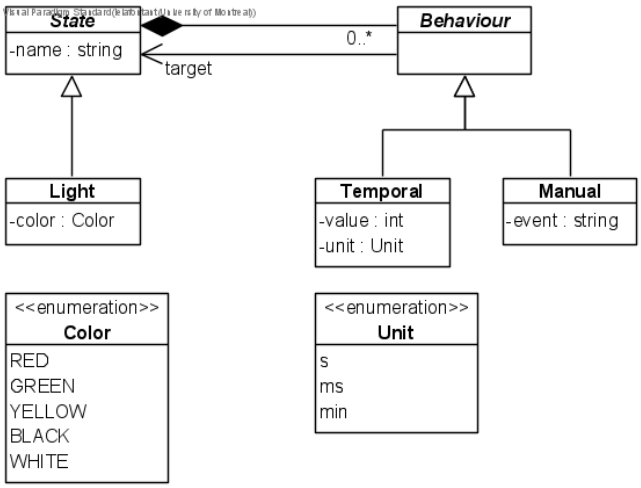
- Screen (content) of the monitors used for the experiment.
- Audio emitted during the experiment such as out-loud thinking or questions
- Mouse interactions such as moving and clicking
- Keyboard interactions such as pressing a key

All recordings will be destroyed within a month following the study.

Traffic lights

In this experiment we will create a model to handle traffic lights (TL).

Task 1: Create a TL model



Create a TL model with three lights: **Go** as GREEN, **Hurry** as YELLOW and **Stop** as RED.

Stop behaviours

- `[temporal: after 15 s] --> Go`

Hurry behaviours

- `[temporal: after 05 s] --> Stop`

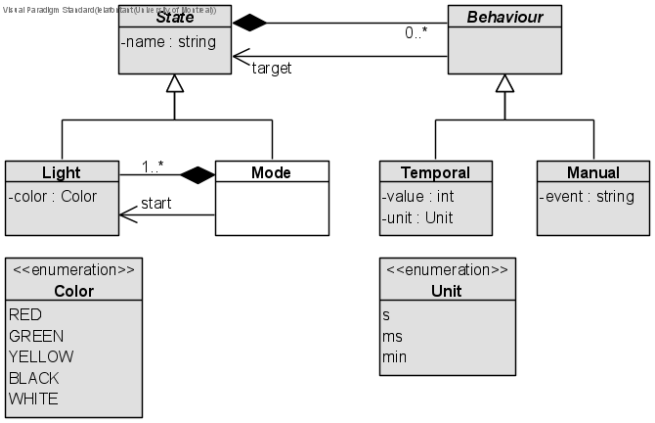
Go behaviours

- `[temporal: after 30 s] --> Hurry`

Create the corresponding TL model. [Estimated time: 5 minutes]

Task 2: Edit a model

Add the two following modes: **Normal** and **Police**



Mode Normal

- Initial light: **Stop**
- Lights: *same as those created in task 1*
- **Behaviours**
  - `[manual: On signal] --> Police`

Mode Police

- Initial light: **ON**
- **Lights**
  - **ON** as YELLOW
    Behaviours
    - `[temporal: after 2 s] --> OFF`
  - **OFF** as BLACK
    Behaviours
    - `[temporal: after 2 s] --> ON`
- **Behaviours**
  - `[manual: On signal] --> Normal`

Change the created TL model to respect the new requirements. [Estimated time: 5 minutes]

Task 3: Evaluate a model

A friend needs your expertise to evaluate a TL model.

He wants to create an **automatic** mode with the following requirements

- **Initial light : GL**
- **Lights defined: GL** as GREEN, **YL** as YELLOW and **RL** as RED,
- **Allowed behaviours:**
  - **GL-->YL**
  - **YL-->RL**
  - **RL-->GL**
- **No manual behaviours**

1. **Identify the errors found in the model.**
2. **Apply the changes to respect the requirements.**

[Estimated time: 5 minutes]

Feedback

Please answer the questions found in the link below regarding your experience with Gentleman and MPS during this experiment.

Experiment survey link

Thank you for your participation!

Your feedback is greatly appreciated.
