Advanced Java Assignment 2

Lift Simulator v2 with 3D GUI

# Achievements

The achievements list table below is a complementary for the table in assignment1. All features have been listed in assignment 1 will not appear in the following table.

There are improvements for features achieved in assignment 1 but will be discussed in improvement part.

|  |  |
| --- | --- |
| Specification | Status |
| High express lift | Done |
| Low express lift | Done |
| Create passenger by click button and customized destination | Done |
| Java 3D Specification | Status |
| 3D building use wireframe | Done |
| Lift show as box with door closing and opening animations | Done |
| Number of passengers shown continuously | Done |
| Lift call buttons with growing animation | Done |
| Number of passengers in each queue | Done |
| Building can be rotated by mouse action | Done |

## Default Settings

* Initially there are 4 lifts and 10 floors
* During 8 am to 9 am lift 0 and lift 1 will be set as high express and low express respectively
* During the daily scene all lifts are normal lifts
* During the lunch scene lift 0 and lift 1 will be set as high express and low express respectively
* The default settings only validated if there are 4 lifts otherwise will strictly follow configuration file

## Express Implementation Explanations

* Tow types of express lift can be co-existed in the simulator
* If both them are co-existed, the simulator might only assign passengers to express lift in morning scene because passengers are assign to express lift preferentially than normal lift
* Manuel select normal button will assign passengers to normal queue
* Manuel select express button might assign passengers to normal queue if there are not express lifts or selected destination do not follow express rules of any express lift

## Other Improvements

* Ant file in this version is fully independent of NetBeans it support –p, run, clean, javadoc and compile
* Configuration file in this version uses “Property” file
* Normal lift allocation algorithm further optimized

# BUG Report

The express lifts induce some ambiguity but I tired to explain them clearly in the previous part. In this part I will identify known bugs.

* Some time the program will induce heap exception (Previously it happens quit often if I switch between 2D and 3D view however after optimizations—reduce unnecessary function calling, scree repaint and 3D shapes—this exception only happens occasionally at high speed and running after considerably long time)
* When start the 3D GUI, sometime the floor control panel color becomes red but the defined color is grey (restart the program should be fine it not affect normal use)
* ~~The interrupted lift (for instance lift is going from 1 to 5 and user press 3) show a little bit jump because the calculation is not as accurate as normal routine~~

# Class Diagram

Please refer the classDiagram2.pdf in the same directory as this document.

# State Transaction Diagram

Please refer the stateDiagram2.pdf in the same directory as this document.

# Others

The basic operations of the simulator follow the assignment 1. The GUI changes slightly

* Animation panel now is a tab panel that can switch between 3D and 2D
* Statistics now show in a table
* Control panel now in a tab panel that can switch among speed control, destination selection and debug information