

Design Document

Final version



Bilger yahov

oLEKSANDR SUPRUNENKO

ILIA NIKUSHEV

GEORGI CHISHIRKOV

LYUBOMIR DIMOV

MENGCHUAN LIU

Traffic Lights System

Table of Contents

[Introduction 3](#_Toc447222447)

[Class Diagram 4](#_Toc447222448)

[Renderable inheritance overview 4](#_Toc447222449)

[Component classes 4](#_Toc447222450)

[Crossing classes 5](#_Toc447222451)

[Simulation classes 6](#_Toc447222452)

[Crossing container (Recycle bin and saved crossings) 7](#_Toc447222453)

[7](#_Toc447222454)

[Undo classes 7](#_Toc447222455)

[7](#_Toc447222456)

[Traffic manager Grid and System state classes 8](#_Toc447222457)

[Description of the classes and their members 9](#_Toc447222458)

[Sequence Diagrams 10](#_Toc447222459)

[Exit application 10](#_Toc447222460)

[Create a simulation 11](#_Toc447222461)

[Select a crossing to place 11](#_Toc447222462)

[Place a crossing 12](#_Toc447222463)

[Remove a crossing 13](#_Toc447222464)

[Save a simulation 14](#_Toc447222465)

[Load a simulation 15](#_Toc447222466)

[Edit a road traffic flow 16](#_Toc447222467)

[Start a simulation 16](#_Toc447222468)

[Stop a simulation 17](#_Toc447222469)

[Pause a simulation 17](#_Toc447222470)

[Restart a simulation 17](#_Toc447222471)

[Undo an action 18](#_Toc447222472)

[Redo an action 19](#_Toc447222473)

[Save simulation results 20](#_Toc447222474)

[Show the help window 20](#_Toc447222475)

[Override simulation 21](#_Toc447222476)

[Show simulation result 21](#_Toc447222477)

[Select crossing’s component to make changes 22](#_Toc447222478)

[Set current active crossing 22](#_Toc447222479)

[Start simulating pedestrians 23](#_Toc447222480)

[Access “Saved” crossing 23](#_Toc447222481)

[Access “Removed” crossings 24](#_Toc447222482)

[Empty the recycle bin 24](#_Toc447222483)

[Graphical User Interface 25](#_Toc447222484)

# Introduction

This document gives information about the class diagram for the *“Traffic Lights”* application. Description of the classes and the attributes and methods in each class is given. Furthermore, some sequence diagrams of the application are presented.

The class diagram is a static diagram. It represents the static view of the application. Our class diagram is not only used for visualizing, describing and documenting different aspects of a system but also for constructing executable code of the software application. The class diagram describes the attributes and operations of a class and also the constraints imposed on the system.

Our class diagram can be mapped directly with object oriented languages. It shows a collection of classes, interfaces, associations, collaborations and constraints.

The UML diagrams like activity diagram, sequence diagram can only give the sequence flow of the application but class diagram is a bit different. So it is the most popular UML diagram in the coder community.

In the document can be found sequence diagrams which purpose is:

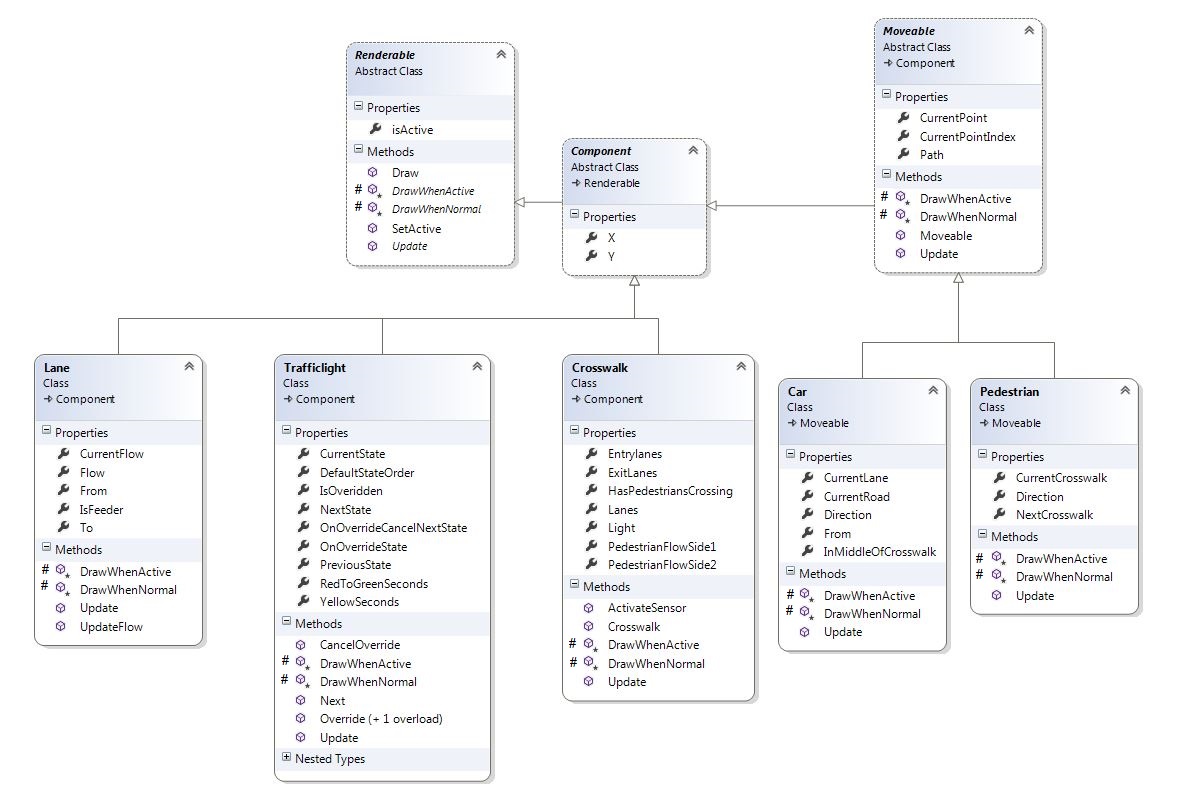
* Draw the activity flow of a system.
* Describe the sequence from one activity to another.
* Describe the parallel, branched and concurrent flow of the system.

# Class Diagram

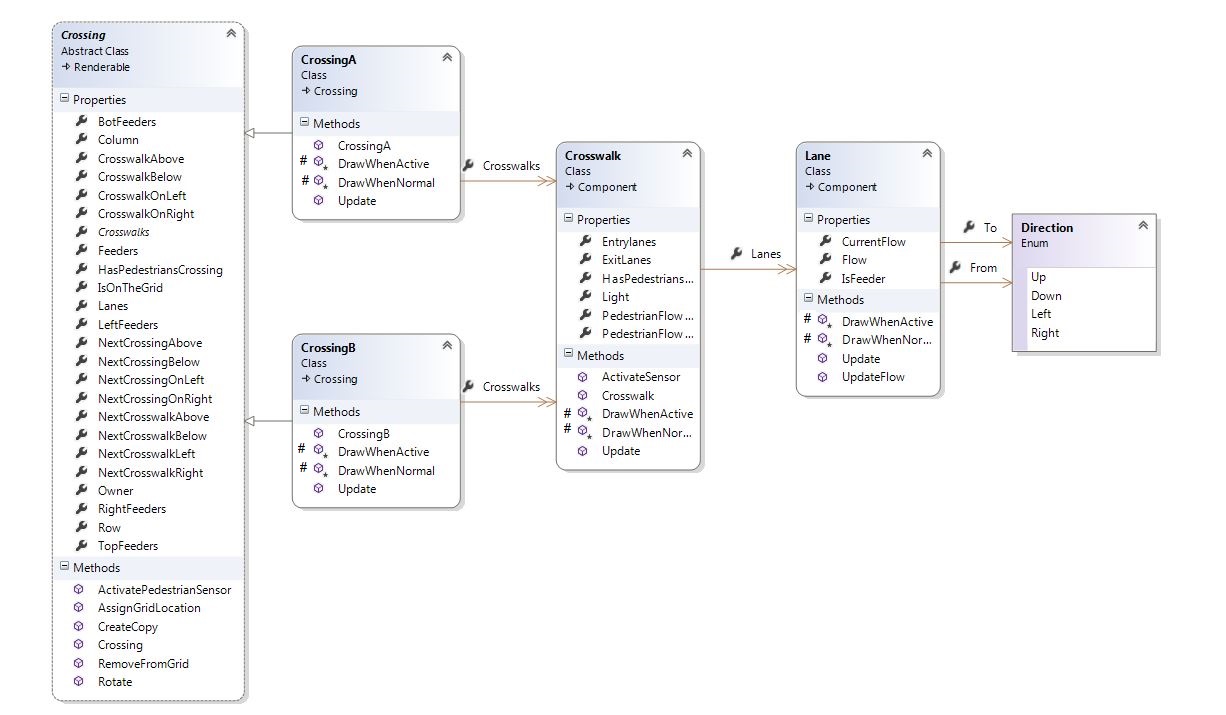
Note: All properties, fields, methods are Public unless otherwise specified

## C:\Users\user\Desktop\ProCP\Renderable.JPGRenderable inheritance overview

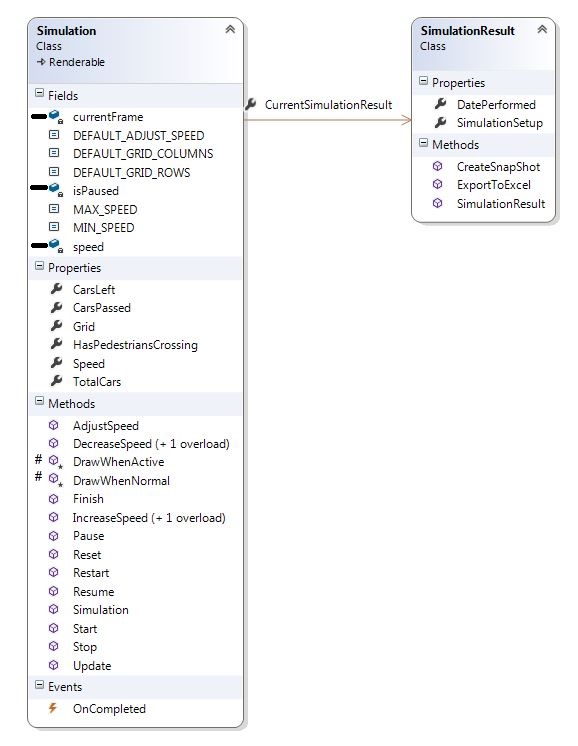
## Component classes



## Crossing classes



## Simulation classes



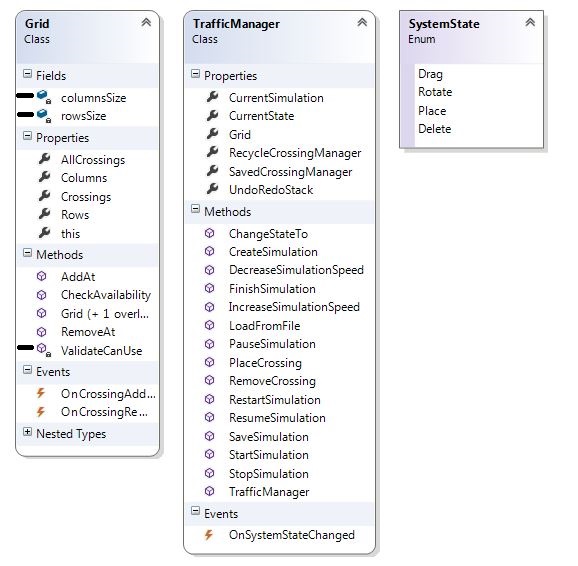
## Crossing container (Recycle bin and saved crossings)

## 

## Undo classes

## 

## Traffic manager Grid and System state classes

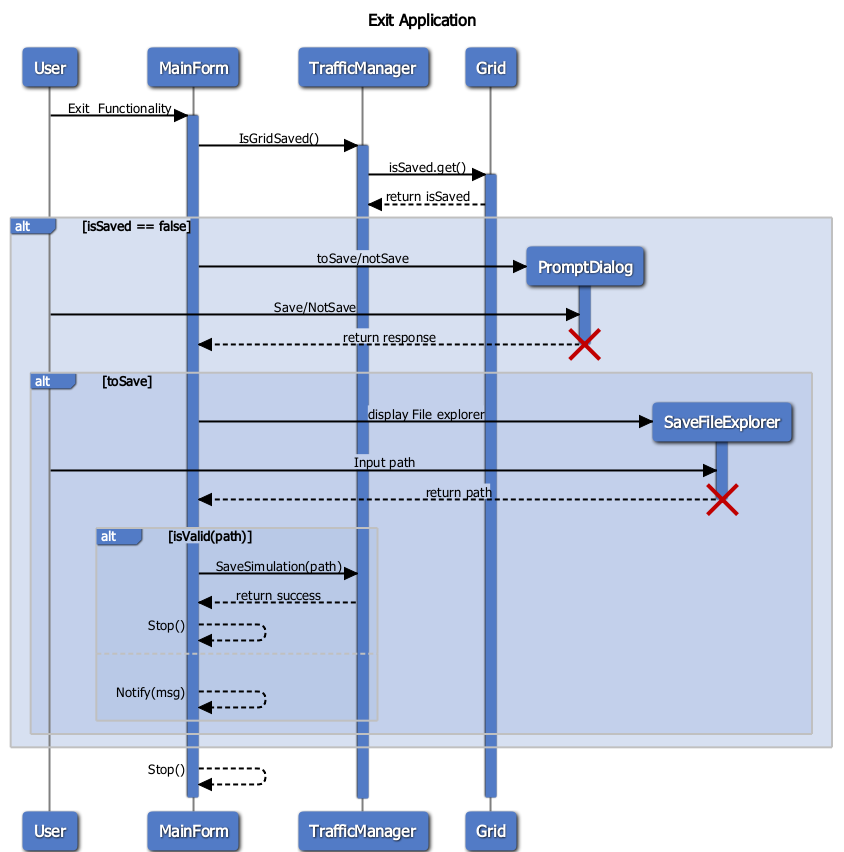


# Description of the classes and their members

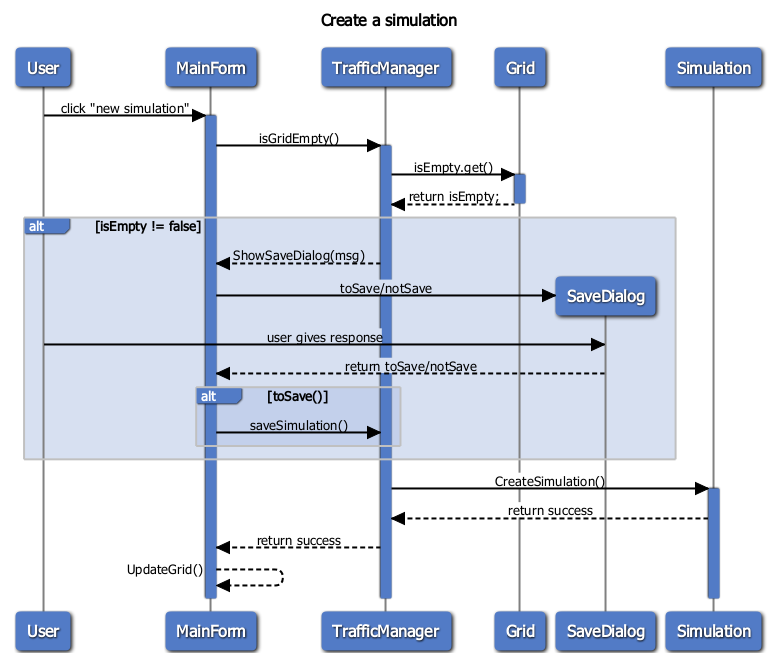
The description for the classes and members can be viewed in the separate folder Class documentation. Refer to the file index.html in the folder Class documentation.

# Sequence Diagrams

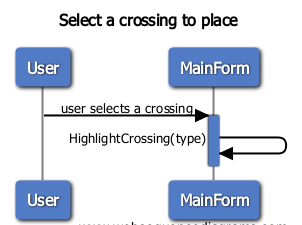
## Exit application



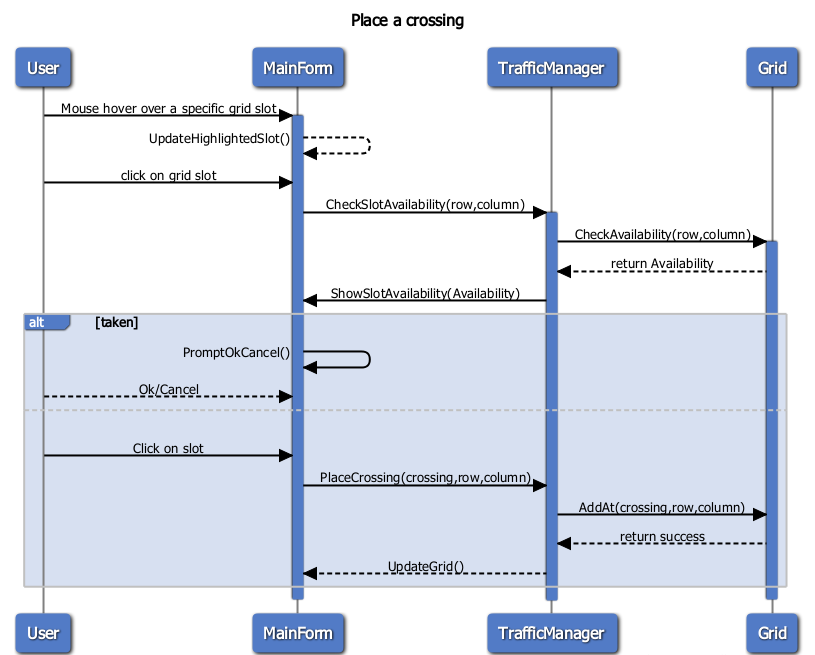
## Create a simulation



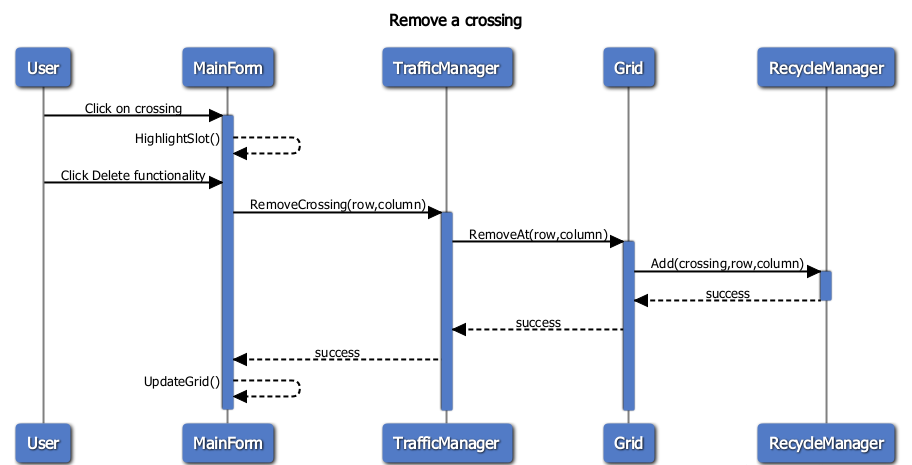
## Select a crossing to place



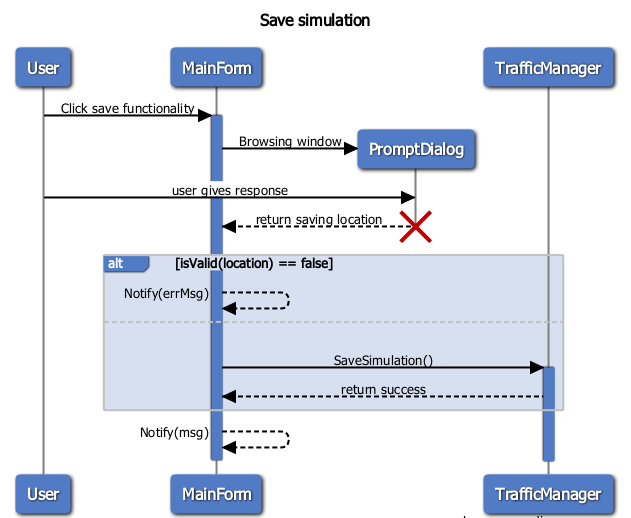
## Place a crossing



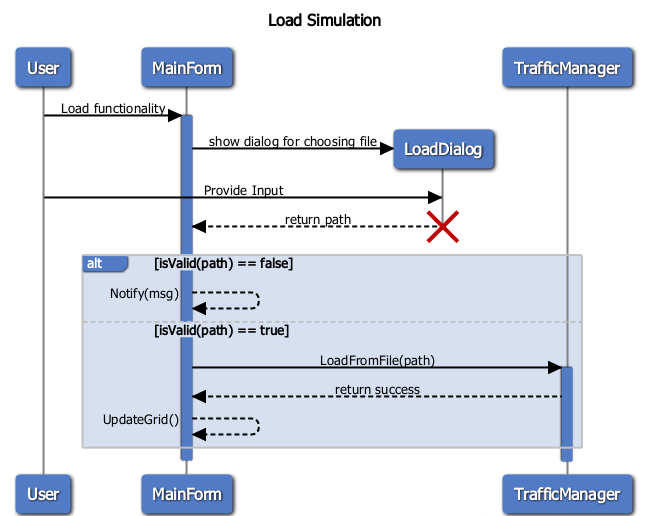
## Remove a crossing



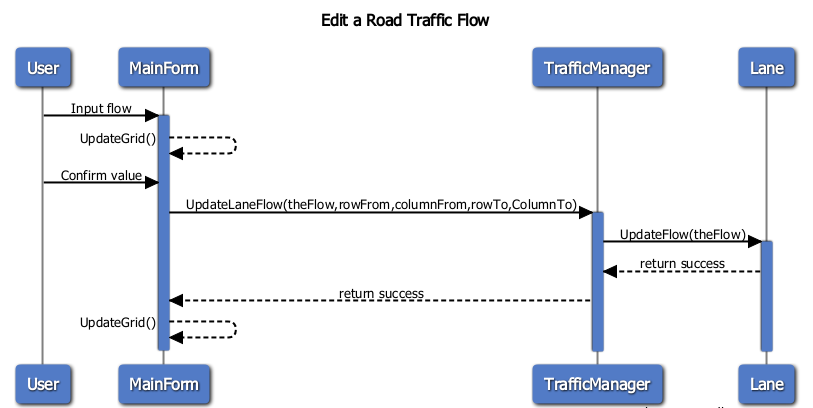
## Save a simulation



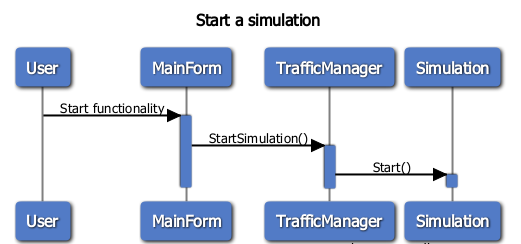
## Load a simulation



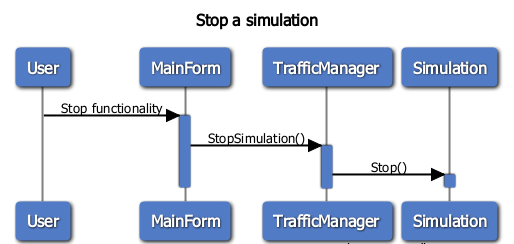
## Edit a road traffic flow



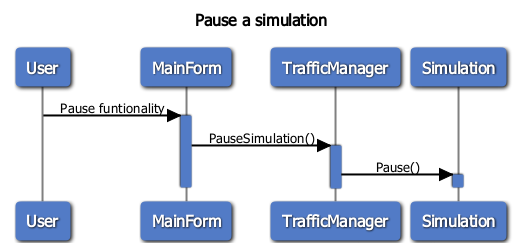
## Start a simulation



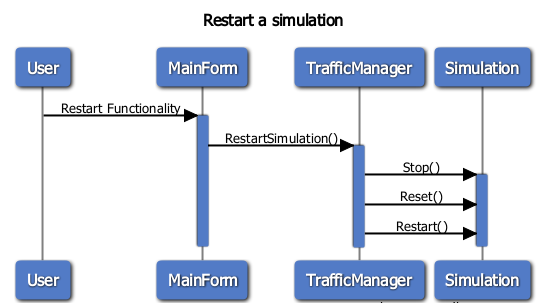
## Stop a simulation



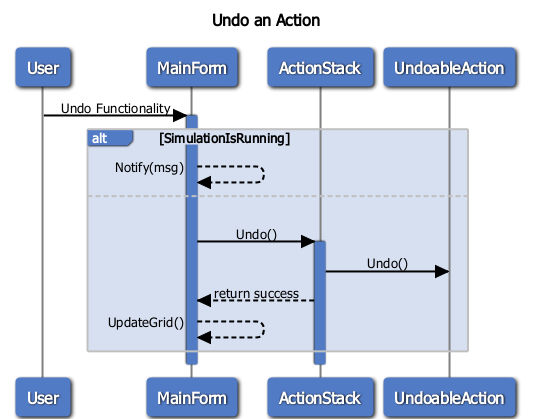
## Pause a simulation



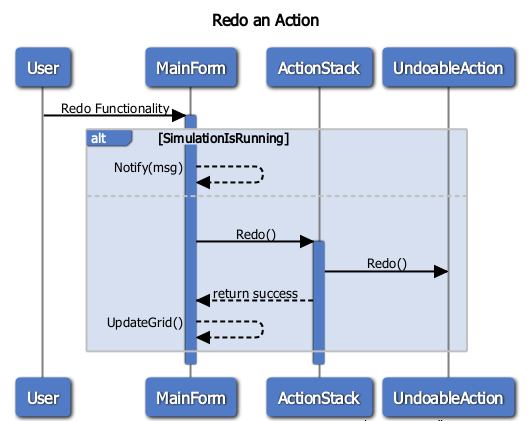
## Restart a simulation



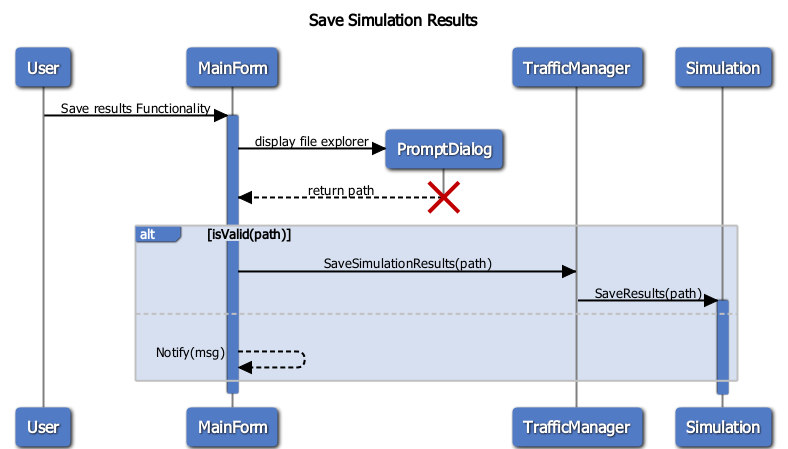
## Undo an action



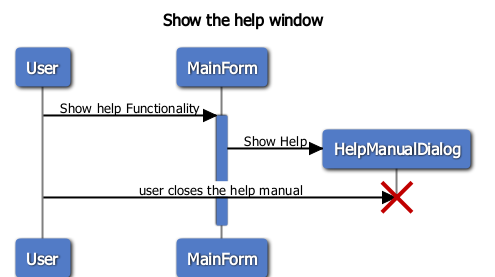
## Redo an action



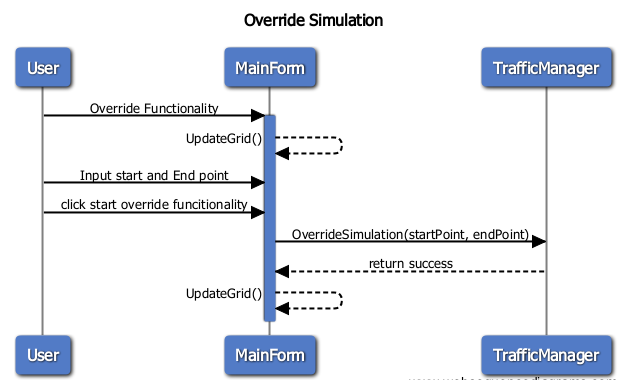
## Save simulation results



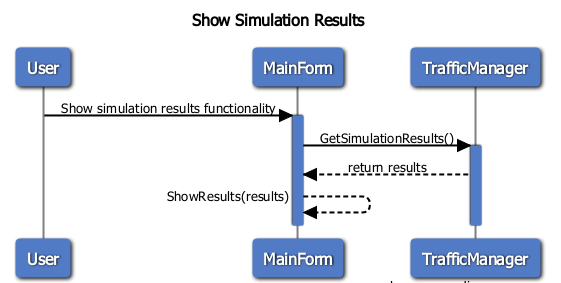
## Show the help window



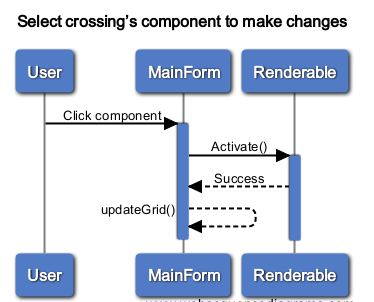
## Override simulation



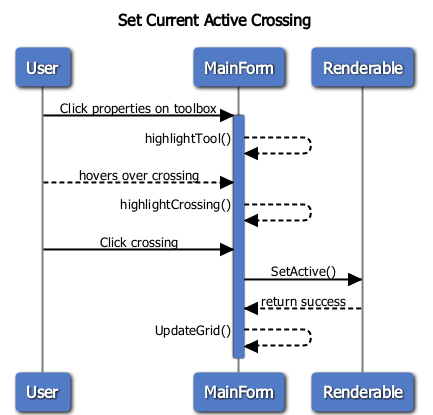
## Show simulation result



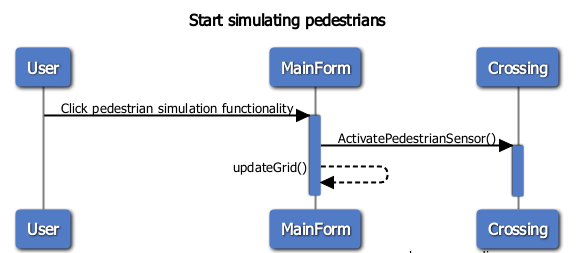
## Select crossing’s component to make changes



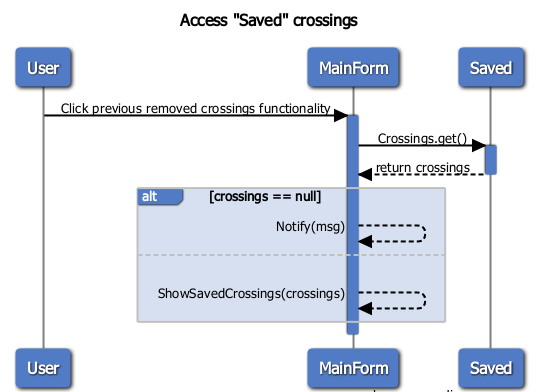
## Set current active crossing



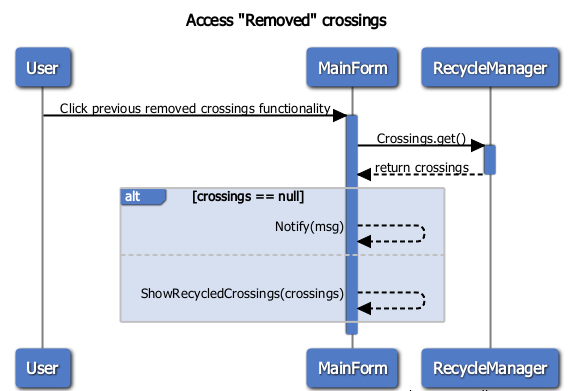
## Start simulating pedestrians



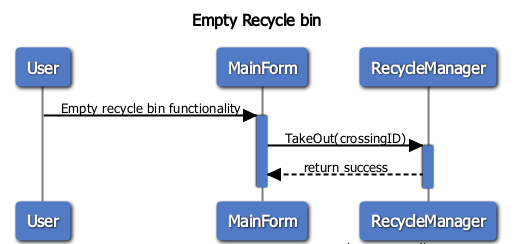
## Access “Saved” crossing



## Access “Removed” crossings



## Empty the recycle bin



# Graphical User Interface

