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TrafficSimulator.java

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```

/*
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 */
package trafficsimulator;

import javafx.application.Application;
import javafx.beans.value.ChangeListener;
import javafx.beans.value.ObservableValue;
import javafx.event.ActionEvent;
import javafx.event.EventHandler;
import javafx.scene.Scene;
import javafx.scene.control.Toggle;
import javafx.scene.input.KeyCode;
import javafx.scene.input.KeyEvent;
import javafx.scene.paint.Color;
import javafx.stage.Stage;
import javafx.stage.WindowEvent;
import trafficsimulator.core.Simulation;
import trafficsimulator.gui.DurationInputError;
import trafficsimulator.gui.SceneComponents;
import trafficsimulator.gui.SimulationRenderer;
import trafficsimulator.gui.SimulationResults;
import trafficsimulator.simulations.Simulation1;
import trafficsimulator.simulations.Simulation2;
import trafficsimulator.simulations.Simulation3;

/**
 *
 * @author balazs
 */
public class TrafficSimulator extends Application {

    public boolean peaktime = true;
    public boolean congestionControl;
    private Simulation simulation;
    private SceneComponents scene;
    private int simulation_round = 0;

    @Override
    public void start(final Stage primaryStage) {

        scene = new SceneComponents();
        scene.startSim.setOnAction(new EventHandler<ActionEvent>() {

            @Override
            public void handle(ActionEvent event) {
                String selectedMap = scene.map_list.getValue().toString();
                try{
                    int duration = Integer.parseInt(scene.duration_field.getText());
                    switch (selectedMap) {
                        case "Small Town":
                            simulation = new Simulation1(peaktime, congestionControl, duration
);
                                break;
                        case "New York":
                            simulation = new Simulation2(peaktime, congestionControl, duration

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);
        break;
    case "London":
        simulation = new Simulation3(peaktime, congestionControl, duration
);
        break;
    default:
        simulation = new Simulation1(peaktime, congestionControl, duration
);
        break;
    }
    SimulationRenderer renderer = new SimulationRenderer(scene.gc, simulat
ion);
    simulation.setRenderer(renderer);
    simulation.setDuration(Long.parseLong(scene.duration_field.getText()))
;
    simulation_round += 1;
    simulation.start();
    scene.disableStartButton();
    scene.enableResultButton();
} catch (NumberFormatException e) {
    new DurationInputError(primaryStage);
}
});

scene.duration_field.setOnKeyPressed(new EventHandler<KeyEvent>() {
    @Override
    public void handle(KeyEvent event) {
        if(event.getCode().equals(KeyCode.ENTER)) {
            scene.startSim.fire();
        }
    }
});

scene.peakTimeSelector.selectedToggleProperty().addListener(new ChangeListen
er<Toggle>() {
    @Override
    public void changed(ObservableValue<? extends Toggle> ov, Toggle toggle, To
GGLE new_toggle) {
        peaktime = (boolean) scene.peakTimeSelector.getSelectedToggle().getUserD
ata();
    }
});

scene.policySelector.selectedToggleProperty().addListener(new ChangeListener
<Toggle>() {
    @Override
    public void changed(ObservableValue<? extends Toggle> ov, Toggle toggle, To
GGLE new_toggle) {
        congestionControl = (boolean) scene.policySelector.getSelectedToggle().g
etUserData();
    }
});

scene.showResults.setOnAction(new EventHandler<ActionEvent>() {
    @Override
    public void handle(ActionEvent event) {

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        new SimulationResults(primaryStage, simulation, simulation_round, scene.  
map_list.getValue().toString(), scene.getSelectedPolicyText(), scene.duration_file.  
ld.getText(), peaktime);  
        scene.disableResultButton();  
        scene.enableStartButton();  
    }  
});  
  
//set stage config  
primaryStage.setOnCloseRequest(new EventHandler<WindowEvent>() {  
    @Override  
    public void handle(WindowEvent event) {  
        System.exit(0);  
    }  
});  
primaryStage.setTitle("Traffic Simulator");  
primaryStage.setScene(new Scene(scene, 1200, 700, Color.LIGHTGRAY));  
primaryStage.show();  
  
}  
  
/**  
 * @param args the command line arguments  
 */  
public static void main(String[] args) {  
    launch(args);  
}  
  
}
```