Cue Sheet Project

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1.
Project Description

Project Description

Allow users to create, modify and handle bicycle cue sheets by a computer application with graphical user interface.

2.
Application Features

Application Features

SEGMENT BANK DISPLAY

Imported segments are listed on the segment bank display

CANVAS DISPLAY

User add desired segment from the bank to the canvas display

IMPORT/EXPORT

Users can import and export cue sheets individually, and ultimately build a desired path

ADD/REMOVE

Add and remove segments from the overall route

DRAG

Making the overall route on the display to be draggable with vertex highlights

SAVE/LOAD

Save and load partial and overall routes

3.
Model Overview

Model Overview

FileHandlerInterface

Interface so that there is flexibility to implement different file format handlers

CSVFileHandler

Implements FileHandlerInterface.

Does magic: csvToString, stringToCSV, csvToSegment

Segment

Represents each .csv file. Fields: original content, isSelected, isAdded, nickName, filePath, fileName, SegmentVertex, intermediatePath, weight

SegmentVertex

Info on segment's vertices: start, end, label, and color

Helps with defining positions on canvasDisplay

SegmentBank

Helps SegmentBankDisplay know what files have been imported into the app.

SegmentBank <--> Route

Route

Current state of cuesheet.

SegmentBankContents + RouteContents is all that is needed to implement save+load

4.
GUI Overview

GUI Overview

SegDisButtonListener

Defines all the buttons functionalities in SegmentDisplay

SegmentDisplay

Lists out all the possible segment selections, allows users to import, label and add segments

CanvasDisplay

Displays the overall route, enable users to save, load and export overall route

CanvasDisButtonListener
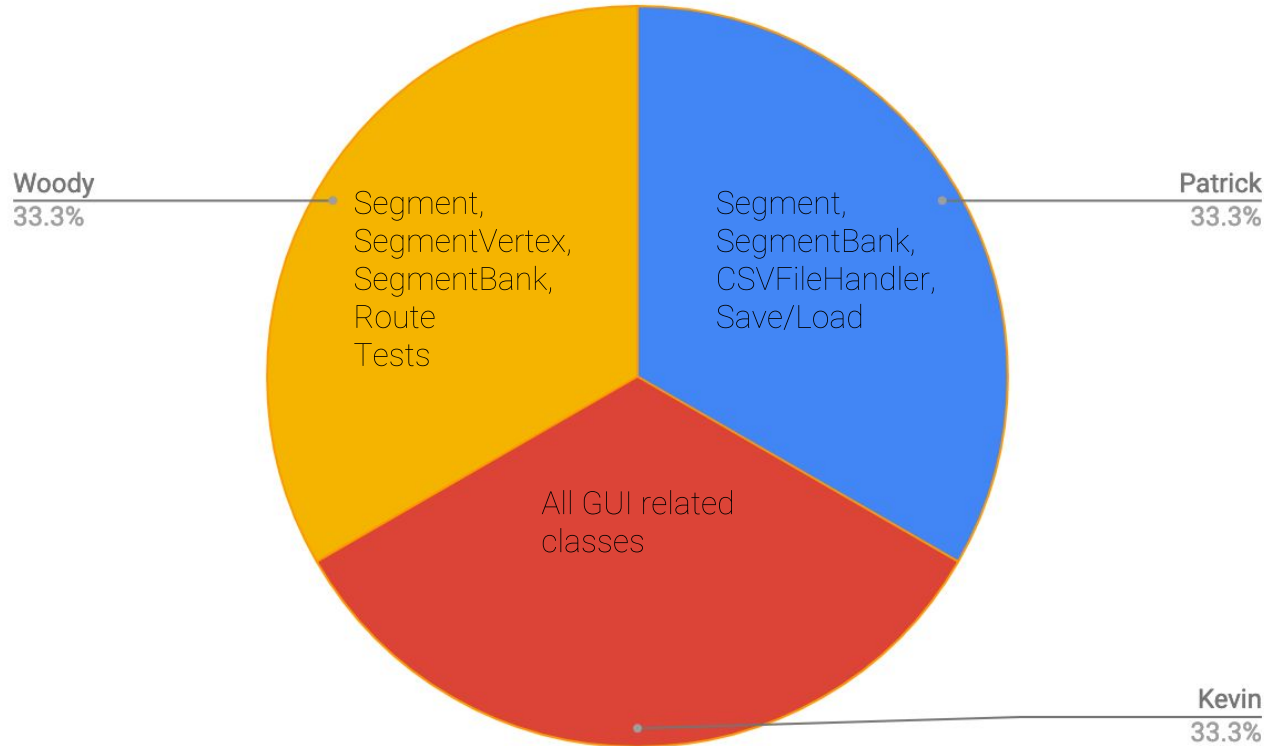
Defines all the buttons functionalities in CanvasDisplay

RouteControl

Enable segment end-point to be draggable
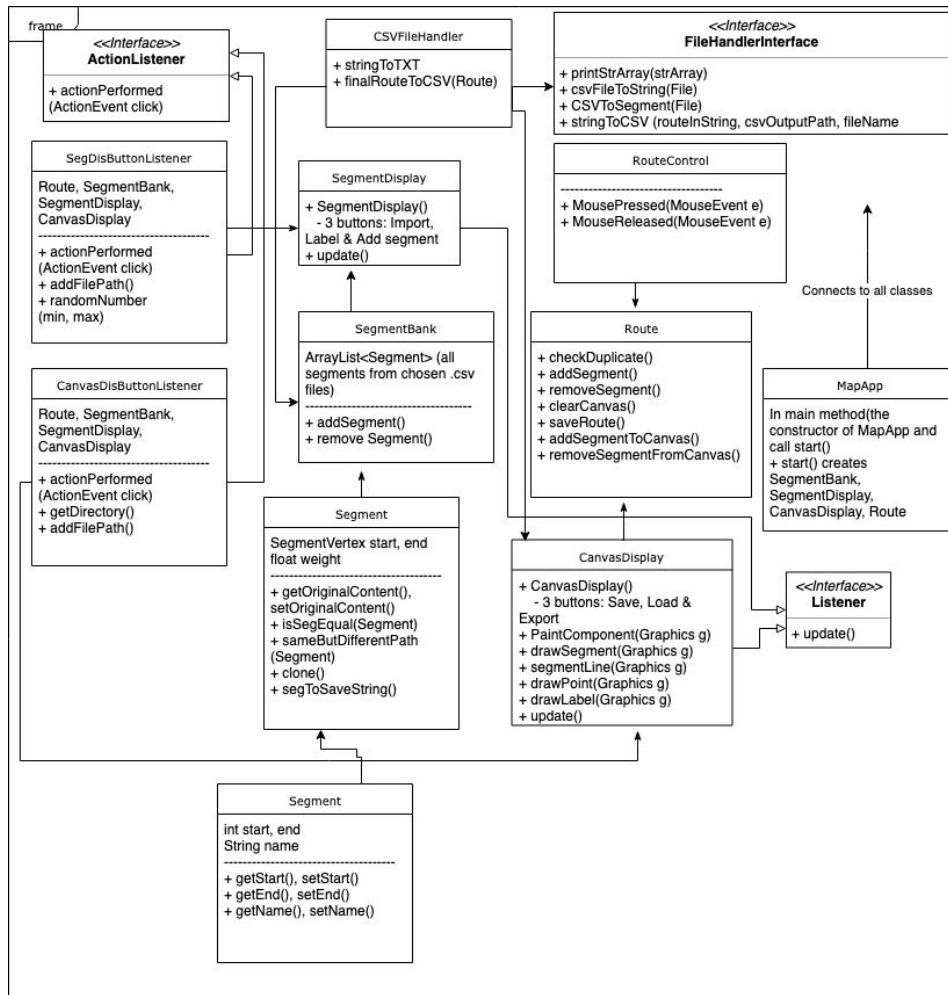
5.
Work Distribution

Work Distribution

Woody
33.3%

Segment,
SegmentVertex,
SegmentBank,
Route
Tests

Patrick
33.3%

Segment,
SegmentBank,
CSVFileHandler,
Save/Load

All GUI related
classes

Kevin
33.3%

11

6.
Class Diagram

frame

<<Interface>>
ActionListener
- + actionPerformed (ActionEvent click)

CSVFileHandler
- + stringToTXT
- + finalRouteToCSV(Route)

<<Interface>>
FileHandlerInterface
- + printStrArray(strArray)
- + csvFileToString(File)
- + CSVToSegment(File)
- + stringToCSV (routeInString, csvOutputPath, fileName)

SegDisButtonListener
Route, SegmentBank, SegmentDisplay, CanvasDisplay

- + actionPerformed (ActionEvent click)
- + addFilePath()
- + randomNumber (min, max)

SegmentDisplay
- + SegmentDisplay()
- - 3 buttons: Import, Label & Add segment
- + update()

RouteControl

- + MousePressed(MouseEvent e)
- + MouseReleased(MouseEvent e)

Connects to all classes

CanvasDisButtonListener
Route, SegmentBank, SegmentDisplay, CanvasDisplay

- + actionPerformed (ActionEvent click)
- + getDirectory()
- + addFilePath()

SegmentBank
ArrayList<Segment> (all segments from chosen .csv files)

- + addSegment()
- + remove Segment()

Route
- + checkDuplicate()
- + addSegment()
- + removeSegment()
- + clearCanvas()
- + saveRoute()
- + addSegmentToCanvas()
- + removeSegmentFromCanvas()

MapApp
In main method(the constructor of MapApp and call start()
- + start() creates SegmentBank, SegmentDisplay, CanvasDisplay, Route

Segment
SegmentVertex start, end
float weight

- + getOriginalContent(), setOriginalContent()
- + isSegEqual(Segment)
- + sameButDifferentPath (Segment)
- + clone()
- + segToSaveString()

CanvasDisplay
- + CanvasDisplay()
- - 3 buttons: Save, Load & Export
- + PaintComponent(Graphics g)
- + drawSegment(Graphics g)
- + segmentLine(Graphics g)
- + drawPoint(Graphics g)
- + drawLabel(Graphics g)
- + update()

<<Interface>>
Listener
- + update()

Segment
int start, end
String name

- + getStart(), setStart()
- + getEnd(), setEnd()
- + getName(), setName()

13
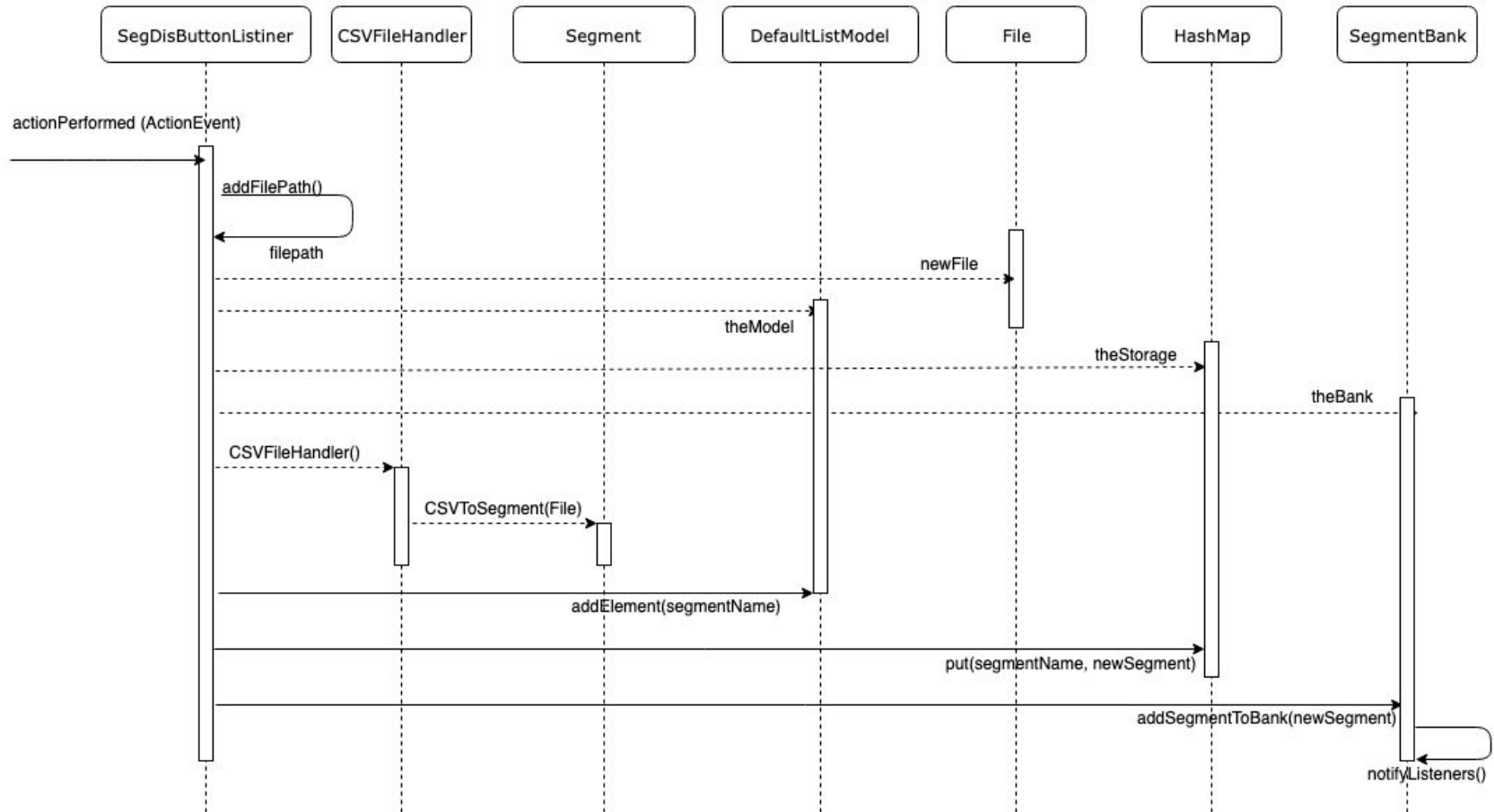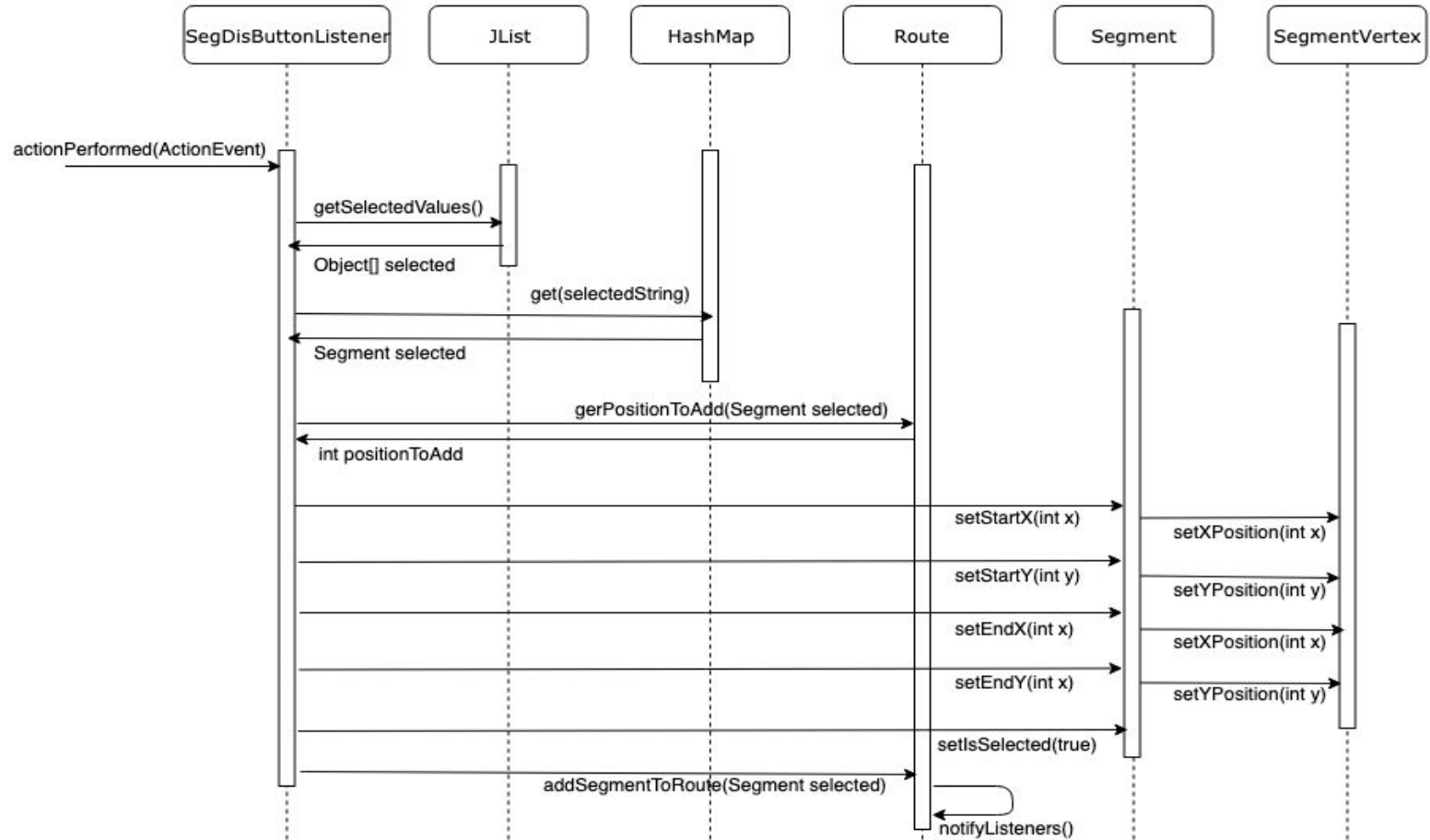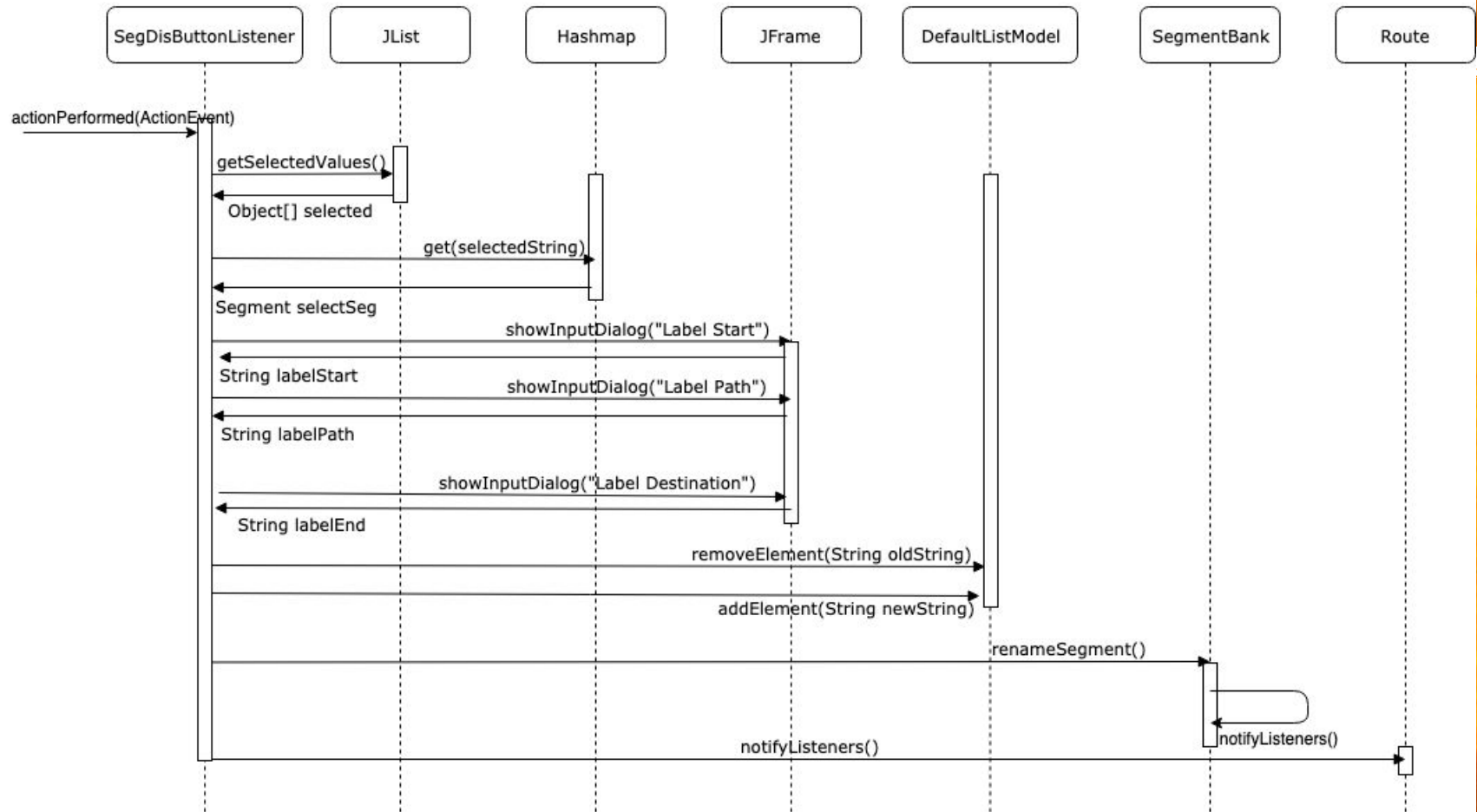
7.

Interaction Diagram

Scenario: When the user clicks the button 'import' in segment display and imports a file to segment bank
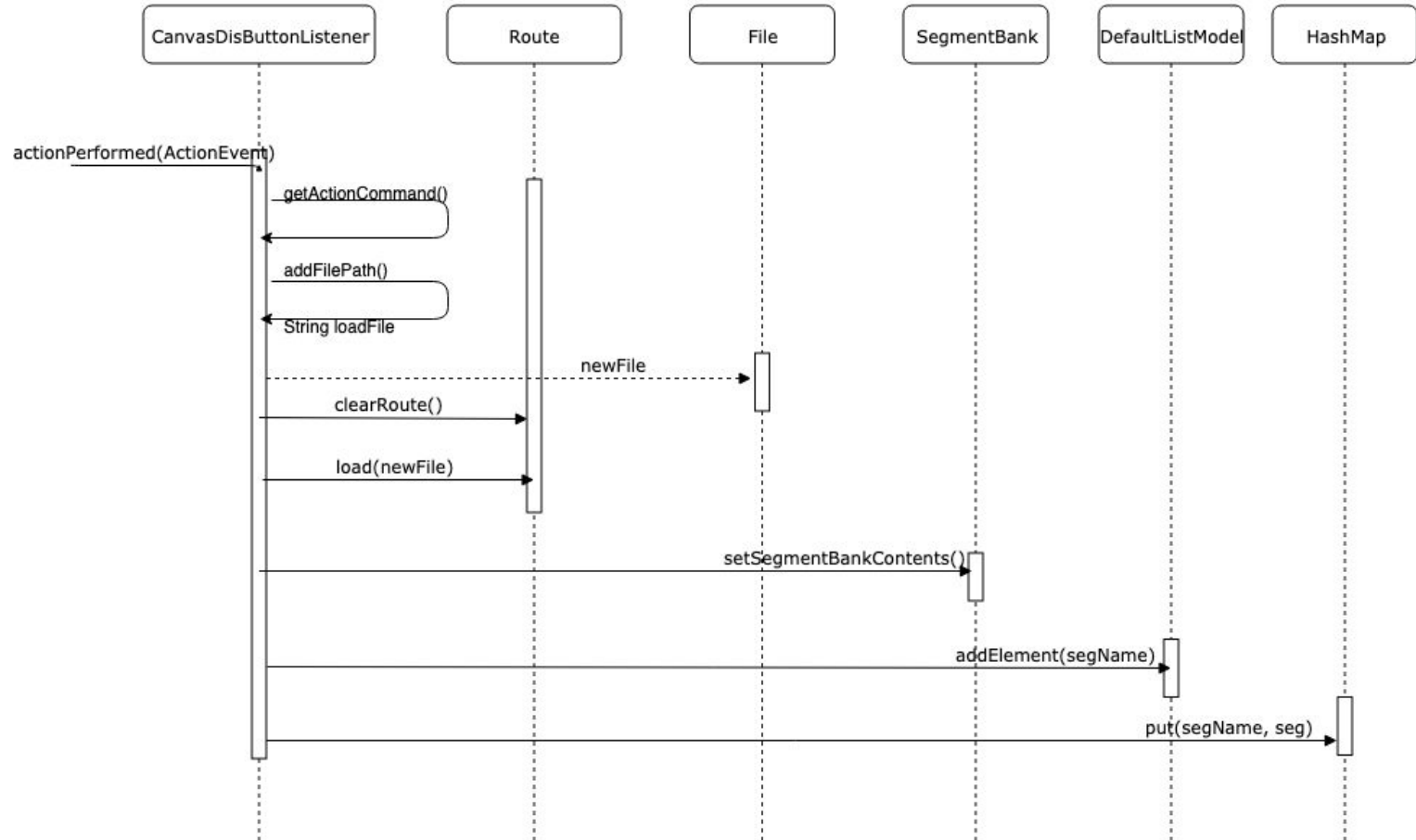
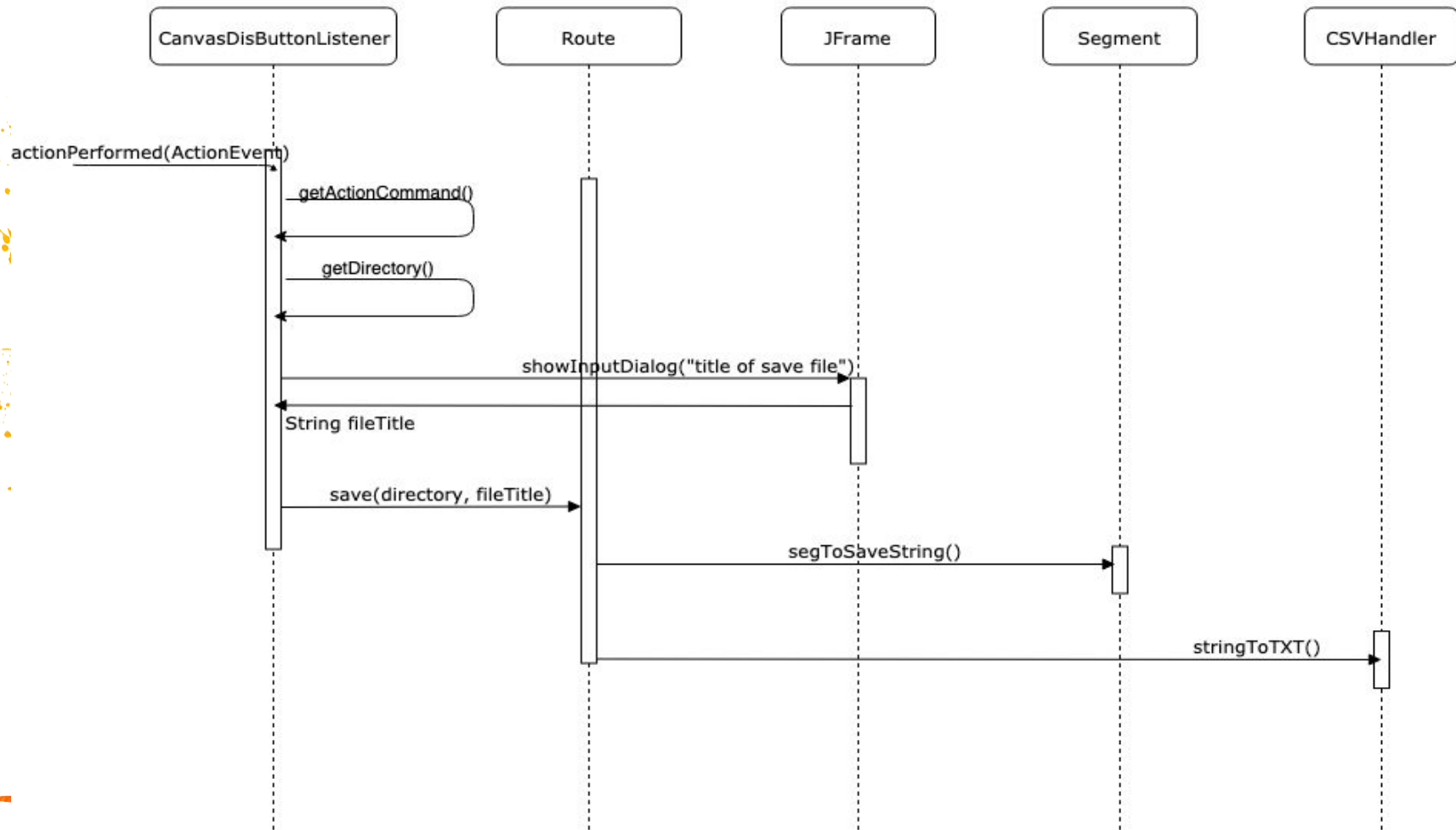Scenario: The user selects a segment from segment bank and clicks 'add' button to add it to the route

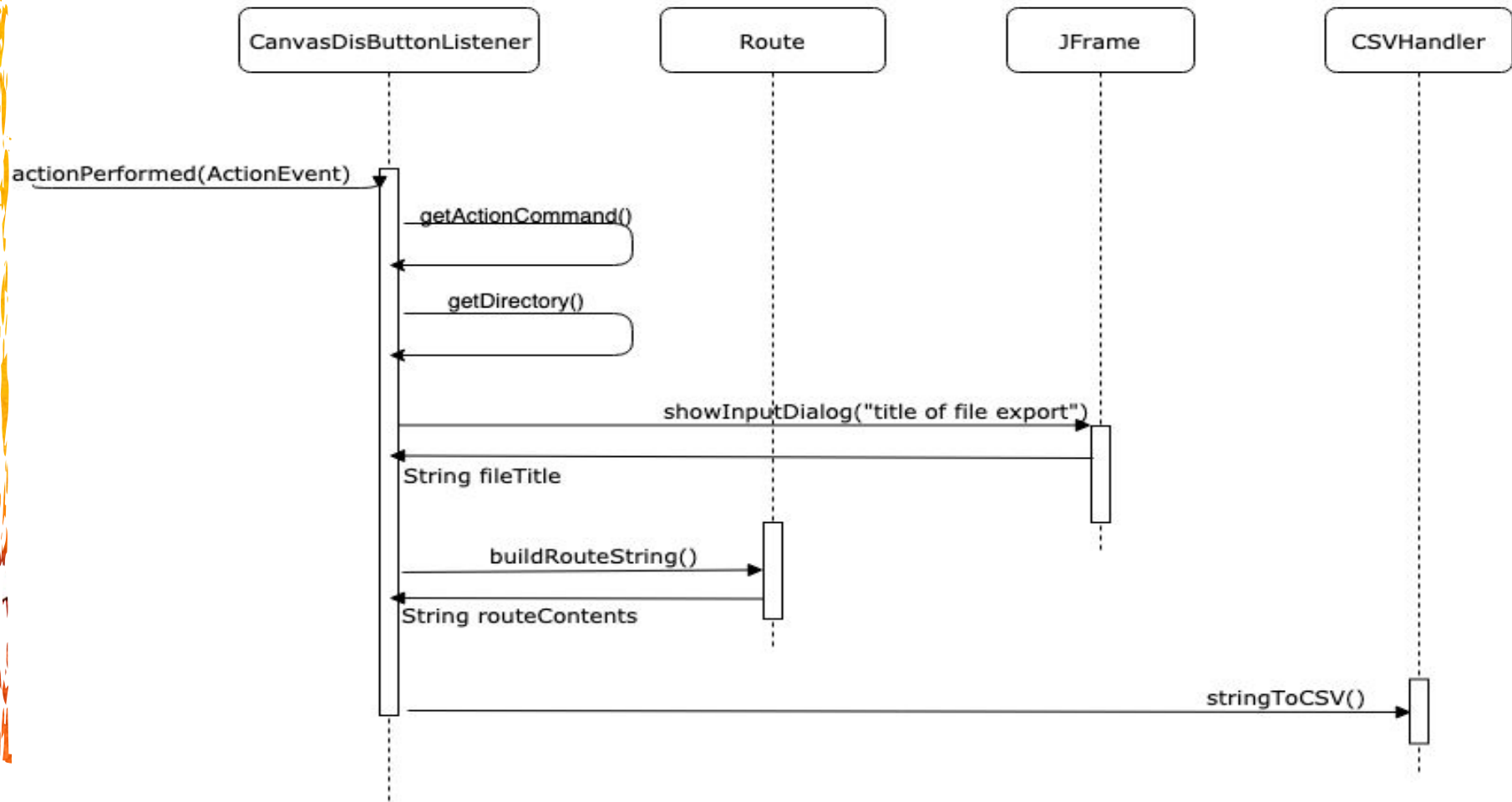# Scenario: the user selects a segment from segment bank and clicked label button

SegDisButtonListener | JList | Hashmap | JFrame | DefaultListModel | SegmentBank | Route

actionPerformed(ActionEvent)

getSelectedValues()

Object[] selected

get(selectedString)

Segment selectSeg

showInputDialog("Label Start")

String labelStart

showInputDialog("Label Path")

String labelPath

showInputDialog("Label Destination")

String labelEnd

removeElement(String oldString)

addElement(String newString)

renameSegment()

notifyListeners()

notifyListeners()

Scenario: The user wants to work on the file that was saved previously

18

Scenario: The user wants to save the route for future edition

Scenario: The user finishes the route and exports it as csv file

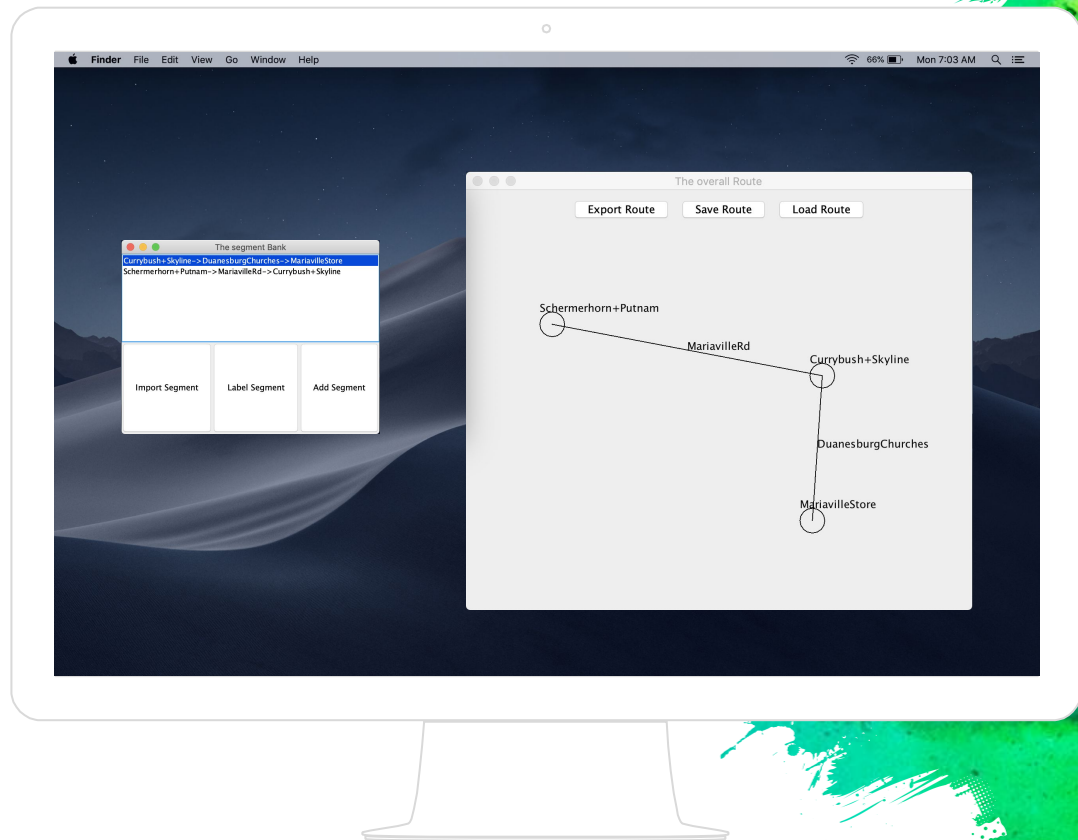# 8.
Testing

Testing

SegmentTest

- testSegmentGetters

- testSegmentSetters

- testSameButDifferentPath

- testCloneMethod

RouteTest

- testAddSegmentInRoute

- testRemoveSegment

- testGetPositionToAdd

- testClearRoute

- testBuildRouteString

9.

Application Demo

Application Demo

24

10.
Lessons Learned

Lessons Learned

- ×   Clear initial concept design.
- ×   Clear communication about roles
- ×   Effective use of git (i.e. merge conflicts)
- ×   Swing was ouch…

11.
Version 2 Features

Version 2 Features

Select file formats to export

Currently only supporting .csv file exports. V2 will allow users to select between .csv and .txt and maybe .pdf.

Load multiple segments to bank

Ability to select multiple .csv files and load into segment bank display

Add/Remove Middle Route Segment

App now supports users to remove end segments from the canvas. V2 will support intermediate segment add/remove

Fancy Drag (Optional)

Make GUI fancier by showing the path of dragged segment vertices

On-the-canvas rename (Optional)

Make GUI fancier by allowing users to rename start/end/intermediate parts of the route on the canvas.

28

12.
Version 2 Timeline

Version 2 Timeline

Select file formats to export		Add/Remove Middle Route Segment		Fancy rename		Fancy Drag
Load multiple segments to bank						

| **Thurs 2/28** | **Tue 3/5** | **Thurs 3/7** | **Tue 3/12** |

Thanks!

Any questions?

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