

---

# SOFTWARE DESIGN SPECIFICATION

## PROJECT 1 : ADDRESS BOOK

---

EDITED BY

FRAZER BAYLEY  
HALEY WHITMAN  
ABDULAZIZ AL-HEIDOUS  
ALISON LEGGE  
JEREMY BRENNAN

PROJECT 1 - TEAM 3

## Contents

<b>1</b>	<b>Introduction</b>	<b>4</b>
1.1	Intended Audience . . . . .	4
1.2	How to Use this Document . . . . .	4
<b>2</b>	<b>Summary</b>	<b>4</b>
<b>3</b>	<b>User Interface Architecture</b>	<b>4</b>
3.1	GUI Handbook . . . . .	4
3.2	Expected Input . . . . .	4
3.2.1	Output . . . . .	5
3.3	GUI Window . . . . .	5
3.3.1	Buttons . . . . .	5
3.4	Back-End Architecture . . . . .	5
3.5	Contact Class . . . . .	5
3.5.1	Attributes of Contact Class . . . . .	5
3.5.2	Functions of Contact Class . . . . .	5
3.5.3	AddressBook Class . . . . .	7
3.5.4	Sorting . . . . .	7
<b>4</b>	<b>Module/Class Explanations</b>	<b>8</b>
4.1	Driver . . . . .	8
4.2	MainFrame . . . . .	8
4.3	AddEntryFrame . . . . .	8
4.4	EditContactFrame . . . . .	8
4.5	AddressBook . . . . .	8
4.6	Contact . . . . .	8
4.7	TSV_Reader . . . . .	8
4.8	TSV_Writer . . . . .	8
<b>5</b>	<b>Appendices</b>	<b>8</b>
5.1	Definitions and Acronyms . . . . .	8
5.1.1	Definitions . . . . .	8
5.1.2	Acronyms and Abbreviations . . . . .	8

## Revision History

Revision	Date	Author(s)	Description
.1	23.01.17	Haley Whitman	Created initial outline of document
.2	25.01.17	Haley Whitman	Added all code snippets

## BACK-END

### AddressBook Class

ArrayList<Contact> AB	Open(File Path)
File Path	Save(File Path)
	Add(Contact)
	Delete(Index)
	getBook()
	getContact(Index)
	getFilePath()
	Search(String)
	getFilePath()
	SortByName()
	SortByZip()

### Contact Class

First Name	COMPARE BY NAME
Last Name	COMPARE BY NAME
Phone	
Email	get< Attribute >
First Address	set< Attribute >
Second Address	
City	
State	
ZIP	

### TSV\_Writer

writer(AddressBook, File Path)

### TSV\_Reader

reader(AddressBook, File Path)

## KEY

Class Attributes	Public Class Functions
	Private Class Functions
	Protected Class Functions
Code Organization	
	Initiates Class/Object/Function

Team 3 - Last Updated: 1/31/2017

## FRONT-END

### MainFrame Class

File	MainFrame()
Contact List	showContacts()
	getAB()
	setAB(Address Book)
	refreshAB()
	Initialize()
	setupTable()
	populateTable()
	setupMenuBar()
	checkToSave()
	save()
	saveAs()
	setFile()
	search()
	viewItem()
	addEntry()

### Driver Class

main()

### AddEntryFrame Class

AddressBook	AddEntryFrame(MainFrame)
MainFrame	closeWindow()
	addEntry()
	entriesAreEmpty()

### EditContactFrame Class

AddressBook	EditContactFrame(MainFrame, Contact)
MainFrame	
Temporary Contact	closeWindow()
New Contact	saveEntry()
	editEntry()
	deleteEntry()
	setEditable()
	viewContactInfo()
	makeContactNow()
	isNumber(String)
	compareContacts(Contact, Contact)

# **1 Introduction**

## **1.1 Intended Audience**

The following document covers all functionality of the front and back end code and how they relate with the user's experience. This document is intended for programmers, team managers, and quality assurance on the developing team to ensure that the code is running to this specification.

## **1.2 How to Use this Document**

This document is intended to help organize all modules, classes, and functions found in the Address Book code. It is meant to help all team members design their components to this specification, as well as having a straightforward method of analyzing interactions between different components. Reasonings for why design choices have been made are found at the end of the document.

# **2 Summary**

The entirety of the program is based off of Java JDK 8, which is using a TSV file format to both load and export address book files. This document itself was created from the list of customer specifications which, with customer meetings, guided the creation of the Software Requirements Analysis, which was used to create the requirements needed to begin programming. This document will help create an Quality Assurance documents needed to test the quality of the resulting application.

This document will contain all programming interactions between modules, classes, and functions. This will be achieved by both diagrams and showing all function headers and descriptions of what they achieve and their interactions.

# **3 User Interface Architecture**

## **3.1 GUI Handbook**

## **3.2 Expected Input**

The user is prompted to enter values for the following variables via text fields:

1. First name
2. Last name
3. Phone number
4. Email
5. Address: Street and 2nd Address
6. City
7. State
8. ZIP code

Other use inputs are included as buttons and from file menus, which are accessed by mouse clicks.

1. Close (Both program, and for adding a contact)
2. Edit (Accessed by mouse clicking on a contact)
3. Delete (Accessed within the edit contact menu)

4. Search (Accessed by mouse clicking the search button next to the search bar)
5. New (Accessed in file menu, creates and loads a new address book)
6. Open (Accessed in file menu, opens an existing address book from a file directory)
7. Save (Accessed in file menu, )
8. Save As... (Accessed in file menu)
9. Quit (Accessed in file menu, quits application completely.)

### 3.2.1 Output

The user receives a list of contacts that they are able to view through, by scrolling a scroll bar on the side of the menu. They are able to access any visible contact by mouse clicks, and able to sort through this displayed list by sorting or searching. A user is allowed to edit or add a contact, which once changed can be elected to be saved and added to the current address book for future use. Upon loading any address book the current address book will be updated visually with the new address book.

## 3.3 GUI Window

```
1 public class AddressEntryFrame extends JFrame {}

1 public AddressEntryFrame() {}
```

### 3.3.1 Buttons

```
1 Void deleteButton() {}

1 void editButton() {}

1 public class NewEntry {}

1 public void addEntry() {}

1 public void closeWindow() {}
```

## 3.4 Back-End Architecture

## 3.5 Contact Class

The contact class is where all data regarding each entry in the address is kept. This class utilizes strings to hold all information about each entry.

### 3.5.1 Attributes of Contact Class

```
1 public Contact(String fn, String ln, String phone, String email,
2               String add, String city, String state, String zip) { }
```

*This class holds the String data for first name, last name, phone number, email, address, 2nd address, city, state, and ZIP code.*

### 3.5.2 Functions of Contact Class

*Functions: All Getters and Setters for Contact Class*

*Precondition:*

*Caller has a Contact Object if using a getter, or a String and a Contact object for input as a*

setter. *Postcondition: All getters will return a String, all setters will return void, but set the inputted String for the corresponding contact.*

```
1 public String getFirstName() {
2     return _firstName;
3 }
4 public void setFirstName(String value) {
5     _firstName = value;
6 }

1 public String getLastName() {
2     return _lastName;
3 }
4 public void setLastName(String value) {
5     _lastName = value;
6 }

1 public String getPhone() {
2     return _phone;
3 }
4 public void setPhone(String value) {
5     _phone = value;
6 }

1 public String getEmail() {
2     return _email;
3 }
4 public void setEmail(String value) {
5     _email = value;
6 }

1 public String getAddress() {
2     return _address;
3 }
4 public void setAddress(String value) {
5     _address = value;
6 }

1 public String getCity() {
2     return _city;
3 }
4 public void setCity(String value) {
5     _city = value;
6 }

1 public String getState() {
2     return _state;
3 }
4 public void setState(String value) {
5     _state = value;
6 }
```

```

1 public String getZip() {
2     return _zip;
3 }
4 public void setZip(String value) {
5     _zip = value;
6 }

```

### 3.5.3 AddressBook Class

*This class contains an arraylist of Contact objects and a few series of functions that allow different manipulations of these list of Contact objects. On constructing an Address Book, an ArrayList of Contacts is created and the following functions can be applied to this Address Book object:*

```

1 public void Save(String filepath) { }

```

*Functions: Save*

*Precondition: String of intended file path for AddressBook object to be exported to.*

*Postcondition: A boolean value, True if save was successful.*

```

1 public void Add(Contact data) { }

```

*Functions: Add*

*Precondition: A Contact Object*

*Postcondition: Inputted Contact is saved into the applied Address Book.*

```

1 public void Delete(Contact data) { }

```

*Functions: Delete*

*Precondition: An Integer Index of the desired Contact to delete*

*Postcondition: The Contact at the specific instance will be deleted from the Address Book.*

```

1 public Contact SearchBy(Integer key) { }

```

*Functions: Search*

*Precondition: An Address Book and an inputted String to search for.*

*Postcondition: An ArrayList of Contacts is returned, which will contain all Contacts with any set of the inputted String found in any of the Contacts fields. This will be displayed on the Main GUI window.*

### 3.5.4 Sorting

```

1 public void SortByName() { }

```

```

1 public void SortByZip() { }

```

```

1 public static Comparator<Contact> COMPARE_BY_NAME =
2     new Comparator<Contact>() {
3     public int compare(Contact one, Contact other) { }
4 }

```

```

1 public static Comparator<Contact> COMPARE_BY_ZIP =
2     new Comparator<Contact>() {
3     public int compare(Contact one, Contact other) { }
4 }

```

## 4 Module/Class Explanations

### 4.1 Driver

### 4.2 MainFrame

### 4.3 AddEntryFrame

### 4.4 EditContactFrame

### 4.5 AddressBook

### 4.6 Contact

### 4.7 TSV\_Reader

### 4.8 TSV\_Writer

## 5 Appendices

### 5.1 Definitions and Acronyms

#### 5.1.1 Definitions

#### 5.1.2 Acronyms and Abbreviations

GUI	Graphical User Interface
SDS	Software Design Specification
SRS	Software Requirement Specification
TSV	Tab-Separated-Values