Exercise No. 6
Address Book – Part II
Due Date: 05/02/2006

This is the second part of the address book application assignment. In this part of the assignment you will extend the functionality of the AddressBook class by using the default Serialization mechanism of Java for saving/loading data to/from files. Then, you will use the Standard Widget Toolkit (SWT) to implement a graphical user interface (GUI) for the address book. A special care should be given to the model-view separation paradigm, which dictates that the model (logic and functionality) of an application should be separated from the visual representation (the GUI in our case).

Model Extension: Saving/Loading Data to/from Files:

Add the following two methods to the `IAddressBook` interface and implement these methods in the `AddressBook` class:

- **`public void save(String filename)`** – save the whole address book to the given file
- **`public void load(String filename)`** – load an address book from the given file name

The requirements of the other methods should be as in exercise 4.

GUI View:

The GUI will be implemented in one class named `GUIAddressBookViewer`. This class will implement the `IAddressBookViewer` interface introduced in exercise 4, but will have some additional methods for supporting the GUI options described below (note that we are not changing the interface, so as not to invalidate the text UI). A template for this class can be found on the course web-site. If you run the application (instructions for installing and running an SWT-based application are below), you can see that the GUI is a window consisting of three parts (see the figure below for a snapshot):
- a menu bar
- a table for showing all the contacts (should be ordered by name alphabetically as in exercise 4)
- a form for showing the full details of the currently selected (in the table) contact

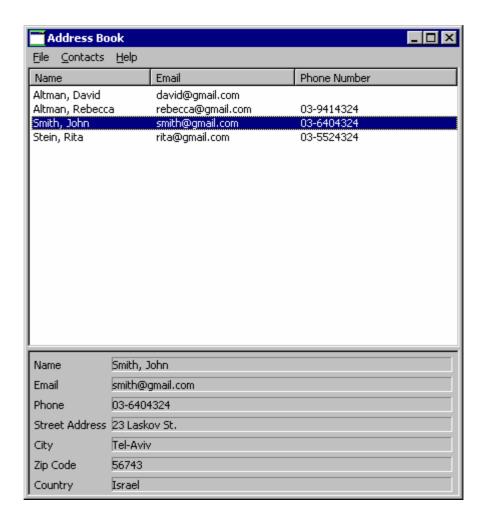Your assignment is to support all the options of the menu bar, that is:
- File→New Address Book: Create a new, blank, address book
- File→Open: Load an address book from a file, using the standard file open dialog
- File→Save: Save an address book. If it was open from a file, save it to the same file. Otherwise, request a filename in a standard file save dialog
- File→Exit: Exit the application
- Contacts→New: Open a dialog asking for the details of the new contact; create a new Contact accordingly.
- Contacts→Edit: Edit the details of the currently selected (in the table) contact; use the same the dialog box as the one for creating a new contact.
- Contacts→Delete: Delete the currently selected contact from the address book.

Notes:
- Before performing a File→New/Open/Exit operation, you should check that there are no unsaved changes to the current working address book, and if this is not the case, show a message box asking the user to confirm or allowing him to save the current address book before exiting.
- The table should always be consistent with the address book's content.
- Decide which exceptions should be handled and how (e.g. showing a message box telling the user about the problem). Any reasonable decision will be accepted.
- Fill in the table with the contacts of the address book, in alphabetic name order (as in exercise 4), including keeping it synchronized with the address book.
- On highlight (selection) of a table row, fill in the full details in the form below it. On double click (default selection) perform the Contact->Edit functionality.

Address Book

File   Contacts   Help

Name	Email	Phone Number
Altman, David	david@gmail.com	
Altman, Rebecca	rebecca@gmail.com	03-9414324
Smith, John	smith@gmail.com	03-6404324
Stein, Rita	rita@gmail.com	03-5524324

Name	Smith, John
Email	smith@gmail.com
Phone	03-6404324
Street Address	23 Laskov St.
City	Tel-Aviv
Zip Code	56743
Country	Israel

Configuring Eclipse to use the SWT Libraries and Running an SWT-based Application:

- Download the .zip of SWT 3.1 for your platform
  For Windows, you should download a zip file named "swt-3.1-win32-win32-x86.zip" by visiting http://www.eclipse.org/downloads/download.php?file=/eclipse/downloads/drops/R-3.1-200506271435/swt-3.1-win32-win32-x86.zip and choosing a mirror (e.g. [Germany] University of Applied Sciences Esslingen).
  For other platforms go to http://download.eclipse.org/eclipse/downloads/drops/R-3.1-200506271435/index.php
- Follow the instructions in http://www.eclipse.org/swt/eclipse.php
  Note: To open the properties dialog of your Java project, click right click on you project in the package explorer view.

What to hand in?

1. Softcopy:
   - `AddressBook.java`
   - `IAddressBook.java`
   - `IAddressBookViewer.java`
   - `GUIAddressBookViewer.java`
   - `Contact.java`
   - `Address.java`
   - `IContact.java`
   - `IAddress.java`

   The source files should be written under the package *il.ac.tau.cs.<your user name>.ex6.* You should then pack your project in a jar file named *ex6.jar* and give it proper permissions as explained in the submission guidelines.

   Note: In real applications it is recommend to define the model classes and the view classes in separate packages.

2. Hardcopy:
   - Printout of your source files. Make sure that the classes are well-documented (including DbC assertions)
   - On the first page of the hardcopy write your name, id and login.