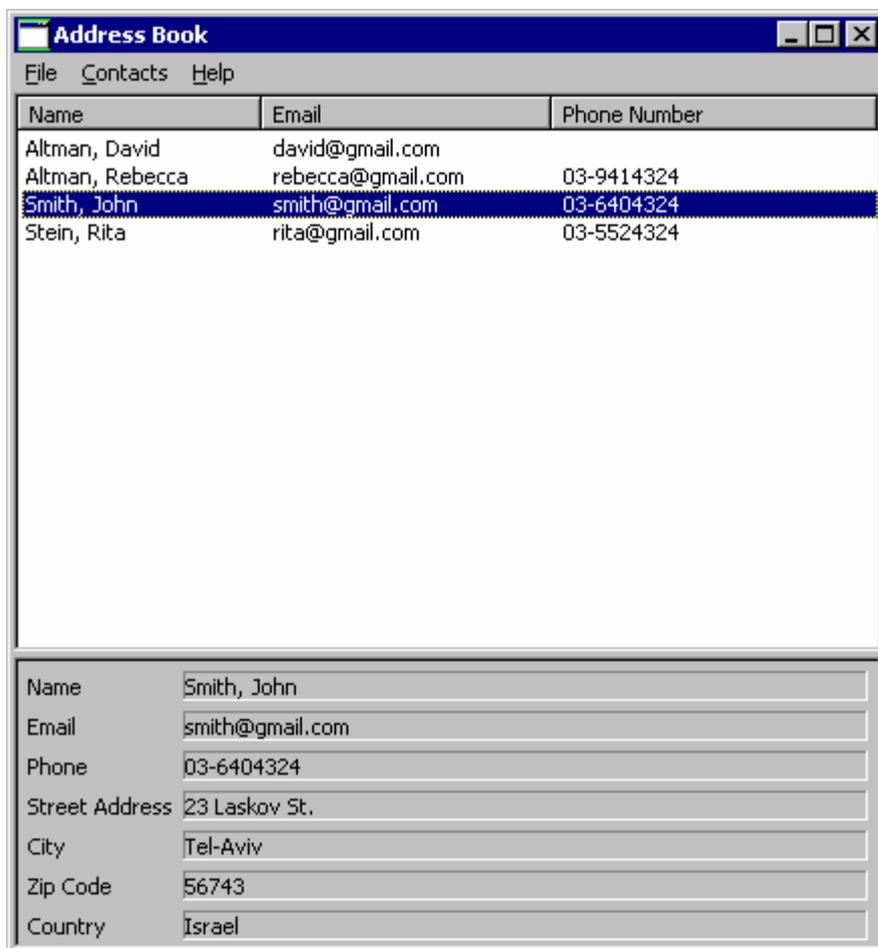


Assignment No. 7

In this part of the assignment you will use the Standard Widget Toolkit (SWT) to implement a graphical user interface (GUI) for your address book.

The GUI will be implemented in one class named *AddressBookEditor*. A template for this class can be found on the course web-site. If you run the application (instructions 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)
- 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.
 - On exception, show a message box telling the user about the problem.
- Fill in the table with the contacts of the address book, in alphabetic name order, 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.
 - Implement the application based on the model-view separation paradigm.

Configuring Eclipse to use the SWT libraries:

SWT comes with eclipse, but you cannot use its libraries automatically. Instead, you need to supply your program with the locations of both the Java classes for the SWT libraries and the native (platform dependent) routines that the Java classes use at run-time. The Java classes are in *swt.jar* and the run-time native code is in the SWT DLL file. The DLL filename depends on the platform and current SWT version, e.g. for a Windows platform the name of the DLL file is *swt-win32-2133.dll*.

To locate the *swt.jar* file, right-click on the project name in the Package Explorer view, and choose Properties. In the opened dialog select "Java Build Path". Then, in the Libraries tab click the "Add External JARs..." button. Now, find *swt.jar*. Its location is dependent on your platform. On Windows, the file is located under "*<installation_folder>\eclipse\plugins\org.eclipse.swt.win32_3.0.0\ws\win32*" (by default, eclipse is installed under the "Program Files" folder). The locations of the file on other platforms are listed in <http://www.cs.umanitoba.ca/~eclipse/1-Install.pdf>. Once you have found *swt.jar*, click on the Open button and then hit OK. The *swt.jar* file should now be displayed under your project in the Package Explorer view.

There are several ways for supplying the location of the DLL file. The easiest way is to specify the location of the DLL as an argument to the Java virtual machine when you run the program. To do so, choose "Run..." from the Run menu. Then, select the Arguments tab and in the "VM arguments" text area type: "-Djava.library.path=<DLL folder>". The DLL's location is also platform dependent. See

<http://www.cs.umanitoba.ca/~eclipse/1-Install.pdf> for the locations on different platforms. For Windows, it is "<installation_folder>\eclipse\plugins\org.eclipse.swt.win32_3.0.0\os\win32\x86".