

Department of Software Engineering
RWTH Aachen University
Prof. Dr.-Ing. Manfred Nagl, Emeritus,
Dipl.-Math. Michael von Wenckstern
(vonwenckstern@se-rwth.de)

Exercise course: *Ada*
WS 2014 / 15
October 29, 2014

Exercise Sheet 3

Submission:

When: Thu, **November 4th**, 2014. 11:59 pm
Where: L²P-eLearning room of Ada or e-mail

Organization

Exercise sheets must be submitted in groups of two to four students. The submission must be delivered electronically via the L²P-eLearning room of Ada.

Exercise 3.1 Text Input-Output (3 points)

Create a simple data processing system which stores and processes structured data of persons.

- Complete the type definition of the provided incomplete program `ea.adb`. The program can be downloaded from the L²P-elearning room of Ada. Person data includes a name, address, age, and gender. Use appropriate data types as possible!
- Provide a procedure for storing datasets in a file. Consult the API reference of the GNAT system (<http://www.cs.uofs.edu/~beidler/Ada/gnat/gnattoc.html>) if necessary.
- Provide another procedure for processing the stored data, so that the age of each person is increased by one. Execute both procedures successively.

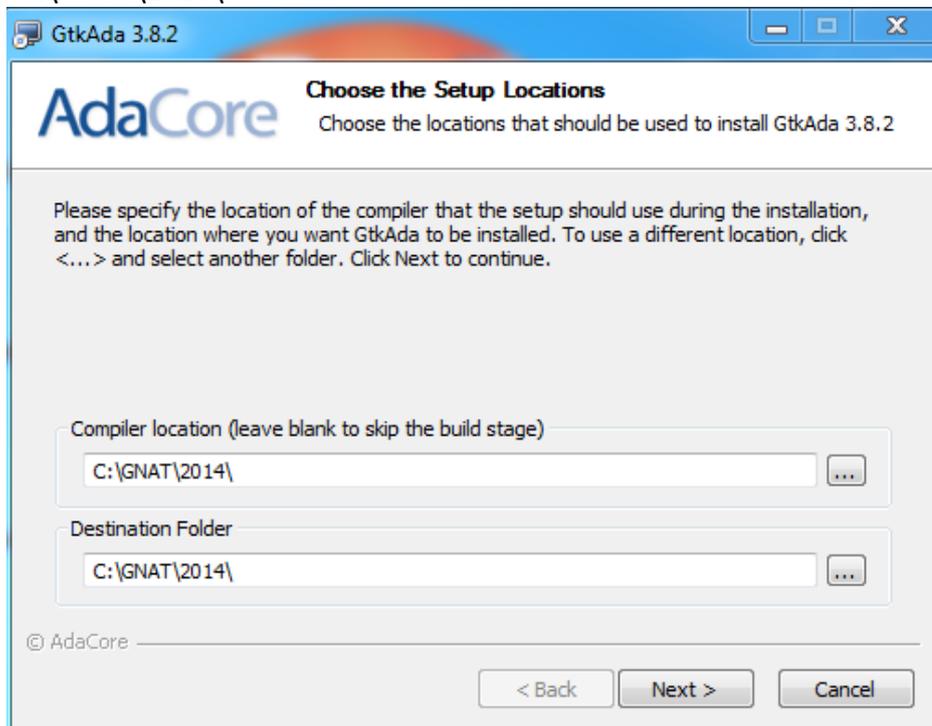
Exercise 3.2 Programming Task – Clicker (8 points)

Firstly you need to install GtkAda to build this application. The user guide is available at http://docs.adacore.com/gtkada-docs/gtkada_ug/build/html/.

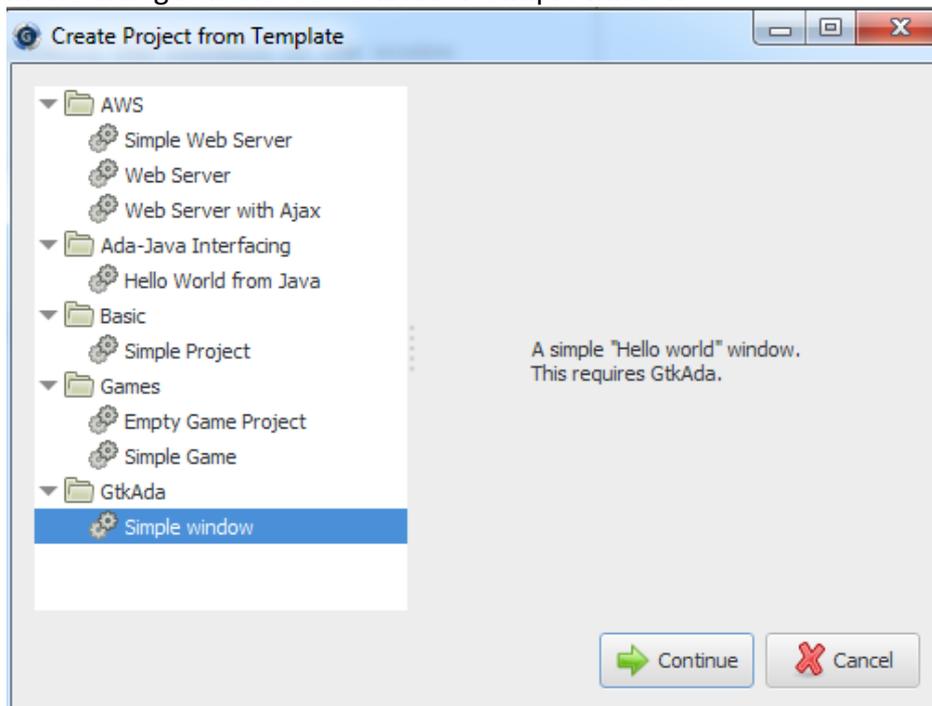
Some installing hints for Windows:

- 1) Download the gtkada x86 installer

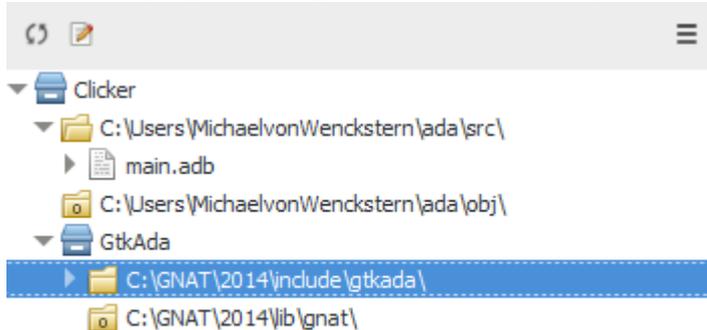
- 2) Set the installation folder the same folder where the gnat compiler is installed, e.g. "C:\GNAT\2014\"



- 3) In Gnat Programming Studio choose the menu: "Project → New from Template ...". In the dialog box choose "GtkAda → Simple window"



The demo project configures the GtkAda for you.



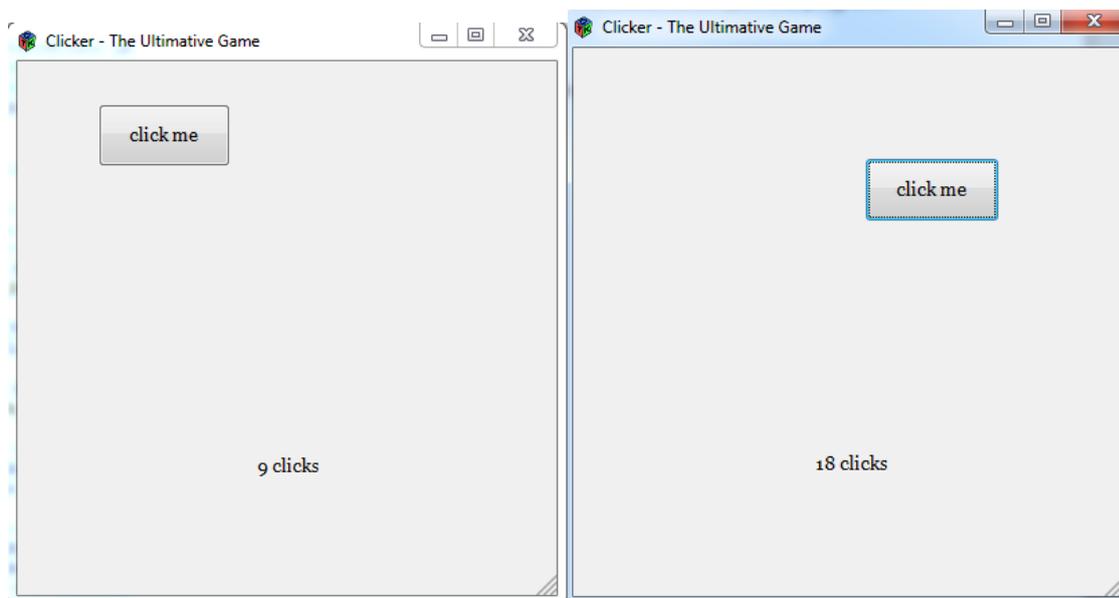
- Execute the simple window project after compiling it. If it cannot be executed from the IDE, then double click at the generated main.exe file to open the program.

In this exercise, a clicker game should be implemented. Each time the user clicks at the button, the button moves its position inside the window and the counter is increased. After 30 clicks the game will be finished and a highscore-table will be shown where the user can enter its name. The highscore-table should be saved as plain text in an extra file. The content of the file can look the following way:

12.5 Martin

13.9 Ulrike

15.3 Anton



Some extra tip: The main file of the project which is used for linking can only have one procedure. So if you create a package containing a function for the window layout and one for the click-signal of the button, then the main procedure in the main file will just invoke the layout-window-function. Otherwise GPS will not link your project.