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Eiffel: Analysis, Design and Programming

Fall Semester 2007

Exercise 1

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Interfacing C

“Libjpeg” is a standard encode/decode for jpeg images written in C. To make the functionalities of this library available for Eiffel, the goal is to create a wrapper around the library, exposing the structures and functions defined by the library to the user.

The goal of the exercise is to create a simple Eiffel application that displays a JPEG image. There might be some library already available to decode JPEG images, please do not use these, but try to decode the library only using libjpeg and its Eiffel wrapper.

You can either create the wrapper yourself or use the Eiffel Wrapper Generator to do it for you. The Eiffel Wrapper Generator will create a number of classes representing C structs and functions, but is not easy to use itself and some documentation is missing.

Resources:

Independent JPEG Group (provide libjpeg)
<http://www.ijg.org/>

External C routines
http://docs.eiffel.com/eiffelstudio/tools/eiffelstudio/reference/30_compiler/30_external_features/index.html

Eiffel Wrapper Generator
<http://ewg.sourceforge.net/>

CECIL – C to Eiffel Call-In Library
<http://docs.eiffel.com/eiffelstudio/technologies/cecil/index.html>
<http://archive.eiffel.com/doc/manuals/library/cecil/page.html> (old)

Remark: Solving the exercise is not mandatory for passing the course, but it will provide you with insights into the Eiffel language and can be seen as good preparation for the exam at the end of the semester.

If you want us to look at your solution, please give us a precise description about your development environment (which Eiffel compiler, which C compiler, which OS) and other information on how to get your code compiled, together with the source code (without the EIFGENs directory!).

You can send questions to **bernd.schoeller@inf.ethz.ch** at any time and we will try to answer them.