

Wrapping a complex C++ library for Eiffel

PROJECT PLAN

Semester project

Project period: 4. April - 1. Juli, 2005

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6th Semester

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1. PROJECT DESCRIPTION

Overview

This projects goal is to wrap Ogre3d, a library for 3d graphics, into an Eiffel environment. In contrast to most other library wrappers for Eiffel, which aim at providing a clean object oriented interface for a procedural library, this projects target is a carefully designed object oriented C++ library. While many methods of other wrapper projects can be applied, this approach also introduces different problems: Which parts of the design can be kept, which parts have to be changed and where are improvements possible?

Scope of the work

- **Wrapping of Ogre3d:** Creating an Eiffel wrapper for Ogre3d.
- **Example applications:** Creating Examples for the wrapper.
- **Report:** Writing down the results of my work and my experiences.

Intended results

- **Partial wrapping of the Ogre3d library:** A library suitable for writing simple applications for Ogre3d in Eiffel, embracing all of the most important concepts used in the C++ library.
- **Example applications using the library:** Small examples demonstrating the use of the library. Conversions of examples of the original library if appropriate.
- **Report:** A report of my work and its results.

2. BACKGROUND MATERIAL

Reading list

- Object Oriented Software Construction [2]
- Ogre 3D Documentation [3]
- Eiffel Wrapper Generator Presentations [4]
- Cecil Documentation [5]

3. PROJECT MANAGEMENT

Objectives and priorities

<i>Objective</i>	<i>Priority</i>
Approach to Wrapping	1
Wrapping of Ogre3d	2
Example Applications	3
Report	1

Priorities: 1 highest, 2 middle and 3 lowest

Criteria for success

Even though the goal of the project is a wrapping for the library, the criteria for success is the method used to wrap the library. It should be systematic, keeping the design as close as possible to the original and changes should be well reasoned.

Method of work

I'm going to use ISE Eiffelstudio for the implementation. Since i am working alone on this project i plan to use a local subversion repository for version control.

Quality management

Regular meetings with the project supervisor.

Documentation

A report of my work will be written, partly in parallel to the work and finished at the end of the project. Additionally, all source code written for the project will be documented.

4. PLAN WITH MILESTONES

Project steps

Planning

- analysis of Ogre3d and Cecil
- aproach for wrapping

Implementation

- library
- examples

Documentation

- Report

Deadline

Project Start: 4. April, 2005

Project End: 1. Juli, 2005

Tentative schedule

	W14	W15	W16	W17	W18	W19	W20	W21	W22	W33	W34	W35
Planning												
analysis												
approach												
Implementation												
library												
examples												
Documentation												
Report												

5. REFERENCES

- [1] Chair of Software Engineering: *Semester-/Diplomarbeiten*, Online at: <http://se.inf.ethz.ch/projects/index.html>, consulted in March 2005.
- [2] Bertrand Meyer: *Object-Oriented Software Construction, 2nd edition*, Prentice Hall, 1997.
- [3] OGRE 3D : *Open source graphics engine*; Online at: <http://www.ogre3d.org>, consulted in March 2005.
- [4] Eiffel Wrapper Generator, Online at <http://ewg.sourceforge.net>, consulted in March 2005.
- [5] Cecil, Online at <http://docs.eiffel.com/eiffelstudio/technologies/cecil/index.html>, consulted in March 2005.