MEMORANDUM

To: B.Arch. B.Sc. Darlene Kilian

From: Dimitrij Becher and Falk-Jonatan Strube

Date: April 20, 2016

Subject: Object oriented programming and modelling

The following represents the written proposal for our *English for Special Purposes Seminar*. The subject of our seminar will be "Object oriented programming and modeling" as agreed upon during class. Our proposal outlines the subject and how it will be presented to at the seminar.

Background

Although having very diverse backgrounds and fields of study, students in the *English C1* class are expected to have a basic understanding of logic and mathematics – as is needed in this computer science subject. Taking that into consideration and regarding the circumstance of some students not being fluent in any kind of programming language, the seminar presents the concepts of the topic with simplified *pseudocode* and easy to understand figures.

Proposal

The seminar will teach the students the basic concept of object oriented programming by illustrating the elemental designs via simple *pseudocode* and comprehensible figures. There will be a basic comparison between *generic* and *object oriented programming* to highlight the differences. The *Unified Modeling Language (UML)*, a visual modeling language, will be used to present the most important principles of object oriented programming.

Benefits

Our seminar is advantageous to get a deeper understanding of programming by learning the basics of this more advanced way to model and program an application. Even for students studying different fields than computer science, the seminar will be beneficial as almost all fields of study have at least one *informatics* module.

Results

The seminar will be held based on our research and preparation and will last about 45 minutes. As listed below in the tentative outline, the seminar will consist of the

presentation, an explanation of the important vocabulary, a language exercise and a discussion.

There will be a complete handout on the afore mentioned parts.

Following the seminar we will write a follow-up report with an evaluation and conclusion to the seminar and the topic itself.

Projected Schedule

This is the projected schedule for our seminar:

April 20	Filing of the proposal
April 22	Beginning research
April 27	Participating in seminars by fellow students; evaluating the good and the bad for our own seminar
April 29	Completing seminar research
May 2	Completing seminar contents; uploading handouts
May 4	Seminar; starting project portfolio and written report
June 10	Uploading project portfolio
June 17	Uploading written report

Our Qualifications

As computer science students we can offer experience in the general field of programming based on our successful first and continuing second semester.

Our skills do not only include knowledge of the programming language *C* but also abstract subjects such as programming algorithms as taught in our first semester.

With our experience regarding the topic and knowledge of the typesetting language LATEX, we can offer a handouts and reports with quality content and a professional design.

Tentative Outline

    I. Introduction

        A. Generic programming

        B. Object oriented programming

   II. Object oriented programming

        A. Inheritance

        B. Polymorphism

  III. Glossary

  IV. Language Practice

   V. Discussion

Tentative Bibliography

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[2] Oracle. *Object-Oriented Programming Concepts*. [Online; accessed 20-April-2016]. URL: `https://docs.oracle.com/javase/tutorial/java/concepts/`.

[3] James Rumbaugh, Ivar Jacobson, and Grady Booch. *The unified modeling language reference manual*. 2. ed. Boston: Addison-Wesley, 2005. ISBN: 0321245628. URL: `http://slubdd.de/katalog?TN_libero_mab213692831`.

[4] Al Sweigart. "Why is Object-Oriented Programming Useful? (With a Role Playing Game Example)". In: *The "Invent with Python" Blog* (Dec. 2014). [Online; accessed 20-April-2016]. URL: `http://inventwithpython.com/blog/2014/12/02/why-is-object-oriented-programming-useful-with-an-role-playing-game-example/`.

[5] Matt Weisfeld. "The Importance of Object-Oriented Programming in the Era of Mobile Development". In: *informIT.com* (Apr. 2013). [Online; accessed 20-April-2016]. URL: `http://www.informit.com/articles/article.aspx?p=2036576`.