

Senior Project Proposal

Department of Computer Science

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Title: Microsoft Word Pogil Plugin

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Background and Problem

POGIL is a teaching method where students are split into small groups and assigned roles to complete a worksheet. In order to efficiently create these worksheets, Clif Kussmaul created a Google Docs extension which allowed an author of a POGIL activity to create one "template" file, with instructions, questions, and answers, and notations, and then from that template file, create separate "Teacher" and "Student" versions.

Some of the other features of the extension is the ability to replace tags with values, such as `{{Date}}` for the current date or `{{Title}}` for the title, the ability to compute readability scores and flag difficult to read text, and to insert headers and footers.

The problem arises that many Professors prefer to use Microsoft Word to create POGIL activities instead of Google Docs.

Brief Description of Solution Being Provided

We are proposing to develop a Microsoft Word extension that can be used to properly generate the requested documents from .DOCX and PDF formats.

Development Objective

This project is a **software development project** for creating a Microsoft Word extension to facilitate the creation of POGIL (Process Oriented Guided Inquiry Learning) activity sheets.

OBJECTIVE: The extension will automate the process of generating distinct "Teacher" and "Student" versions of a POGIL activity from a single template document.

This will involve:

- 1) **Template Processing:** The extension will parse a template .DOCX or PDF file, identifying sections for instructions, questions, answers, and annotations using predefined notations in the form of tags.
- 2) **Document Generation:** The extension will generate two versions of the document:

- a) **Teacher Version:** Includes all content, such as instructions, questions, and answers, as well as annotations that provide additional guidance for facilitating the activity.
 - b) **Student Version:** Excludes answers and annotations, providing only the instructions and questions for students to complete.
- 3) **Export Functionality:** The extension will support exporting these versions in both .DOCX and PDF formats to accommodate diverse teaching and sharing needs.
- 4) **Extra (Possible) Features:**
- a) **Unit Testing**
 - b) **Other File Types**
 - c) **Headers / Footers / Macros**

Schedule of Monthly Deliverables

Note: This is a single semester project.

September	Project Proposal
October	Proof of Concept, at least Teacher and Student sections
November	Any “Extras” (Unit Testing, Other File Types) Finishing Touches
December	Final PogilProject Deliverable

Your Interest and Qualifications

We are interested in this project because we think that POGIL is a valuable learning tool and our advisor has heard requests for the ability to make POGIL activities in Word. There is nothing keeping us from working 6 hours a week on the project, and we can utilize Clif Kussmaul as well as his Google Docs extension as resources in creating our plugin.

Collaboration with Advisor, Outside Experts and Users

THINGS TO DO:

- 1) We will speak to Google Docs POGIL creator Clif Kussmaul.
- 2) We will search and reach new names for feedback or any help

- 3) Research books, websites about POGIL, Word, Word extensions.
- 4) Profesor Norman