

Project title - Tablet-Based Grading Tool Development and Analysis
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Purpose and Goals

With more and more institutions relying on web based course management systems or other means of electronic course work submissions, there could not be a better time than now to make use of the emerging Tablet-PCs to develop an application to help make the assignment markup process easier and more natural for the graders. Thus, our main goal was to develop an application that will allow graders to write comments on the student's submissions like they would on traditional paper-based assignments. Once marked with "electronic ink", this process allows not just electronic return of graded assignments back to the students, but also allows archiving of graded copies.

Research Process

1. *Requirement Analysis and Research* – We started off by researching already developed software for grading assignments e.g. "[Labrador](#)" - A Tool for Automated Grading Support in Multi-section Courses developed by Project Duplex at Drexel University and [Blaise](#) – A tablet-based paperless submission and grading system for writing courses developed at George Washington University. We worked with teaching assistants to study their grading techniques and patterns to identify their needs, which we then used to compile requirements for our application. We also participated in grading sessions with teaching assistants to get hands on experiences and to better understand the grading process.
2. *Design* - We were heavily involved in coming up with prototypes using techniques like paper prototyping and story boards. These techniques allowed us to quickly design numerous iterations of our application without much effort. Some of our prototypes are posted on the project website.
3. *Implementation* - During this stage, we took our prototypes and converted it into code. We used C# along with Visual Studio Tools for Office and Microsoft Tablet PC Software Development kit to design our grading application. Not all the requirements have been fully integrated into version

1.0 of the project. Current version allows the graders to create custom gradesheet templates, open all the student's submissions in one place next to a gradesheet, mark documents with the tablet pen, categorize and bookmark errors. Future enhancements will include cross reference between gradesheet and comments on the marked up document/s, capability of storing frequently used comments in central database for easy copy/paste/update, grading modifications tracking as well as grade synchronization with grade database.

Results and Conclusion

First version of our application is currently undergoing testing with students and teaching assistants. It will later be evaluated by professors. We hope to continuously enhance our application by integrating the remaining improvements as well as graders' and students' suggestions into the application to provide desired level of feedback to the students and to make electronic grading easy and enjoyable for the graders.

Project Publication/Presentation

- Project website: <http://www.cs.drexel.edu/~ss424/Research/>
- Poster presentation at Consortium for Computing Sciences in Colleges - Northeastern Region ([CCSCNE](#)), Rochester, NY, April 20-21 2007