Scheduling System

Project Plan

CS 499

Developed by:

Andrew Beussink
Adam Estel
Ohtsuki Motomu
Bert Sanders
Abigail Young

Table of Contents

Overview

Brehm Preparatory School is a private school in Carbondale, IL that works with students with complex learning disabilities. The primary client for this project is Joe Viscomi, head of Information Technology at Brehm. The secondary clients are the administrative staff at Brehm that will use the software to assist in creating schedules, primarily for Parent Teacher Conferences.

Breakdown of Responsibilities

The primary responsibilities for different parts of the project have been divided among the team members in one of our group meetings based upon the class requirements, individual knowledge and skill sets, and individual interest. Each team member must keep a log of work that they have done on the project. It was also decided that some tasks, such as meetings with the client and with faculty advisors, should be done as a group. Although each team member will do some work in almost every area of the project, the responsibilities for each team member are as follows:

Andrew Beussink

- IO Design Specification
- IO Implementation
- Project Document Editing and Writing

Adam Estel

- Algorithm Design Specification
- Algorithm Implementation
- Project Document Editing and Writing

Motomu Ohtsuki

- IO Design Specification
- IO Implementation
- Project Document Editing and Writing

Bert Sanders – Project Leader

- Database Design Specification
- Database Implementation
- Project Document Editing, Writing, and Compilation

Abigail Young

- Algorithm Design Specification
- Algorithm Implementation
- Project Document Editing and Writing

Functionality

Our web-based scheduling software consists of three major parts: input system, scheduling system, and output system.

Input system will be on the web interface. Students' information, and teachers' schedule can be inputted as a *.csv* (comma delimited) file.

Scheduling system automatically schedules parent-teacher meetings. A parameter, such as meeting length and break length, can be set to generate scheduling system. Scheduling system also provides the function of manual modification. When parents confirm their schedule, the program will lock their meetings.

Output system will also be on the web interface. When a meeting is compiled, specific teacher or students can see the information.

Software Process

The primary software process to be used in this project is the evolutionary model. This will allow us to provide the client with functioning programs to be tested for usability and functionality. Due to the strict time constraints allowed to the project due to the course schedule and school year, this process will also allow us to remove later iterations of the program if there is a problem with the project, while still allowing the client to receive a functioning product.

Software Engineering Methods

The primary software engineering methods we will be using for this project will allow us to work during class and meeting times as well complete the project outside of class hours. During class and meeting times, we will be implementing a Pair Programming system, where developers take turns coding and proofreading code simultaneously. We will also be implementing a concurrent versioning system (using either CVS or Subversion) to allow coding to be done in parallel without overwriting others' work.

Schedule

The development team has determined three general aspects of the project that must be completed.

- Database System
- File I/O
- Algorithm Design and Implementation

All three aspects will be worked on in parallel throughout the project with the following milestones:

- Feb 1
    - Initial Database design and construction must be done to allow File I/O to begin testing.
    - Basic Algorithm should be written out roughly, with implementation in progress.
- Feb 22
    - Basic functionality should be complete, including file input, arranging the schedule, and output to file.
- March 7
    - Web Input/Output should be functional, allowing file upload and review of schedule
    - Advanced Algorithm features should be in place, allowing adjustment of schedule and making allowances for additional options

Potential Problems

The design team is aware of a few areas that could raise future problems and will need to be addressed as the project progresses. They are as follows:

- The program may require a second language to implement the algorithm depending on the algorithm's complexity. If this is the case the design team has discussed the possibility of using a language such as Java which will communicate well with the projects primary database, MySQL.
- Since the project will consist of several different software elements in addition to the primary program itself installation of the system might become rather cumbersome. The design team has discussed the possible need for an automated script to facilitate installation and will consider this further when more solid details are known.

Measurements

The development team will be using two different metrics throughout the project. Each developer will maintain a daily log that will be posted to the project website. The team as a whole will make bi-weekly status reports to discuss progress made on the project as a whole.

Software Tools

The software tools to be used in the project are Eclipse IDE, XAMPP, Php via Apache, and MySQL. All software tools to be used are free as well as being either open source or released under the GPL (Gnu Public License)

Test Plans

Testing plans at this time are tentative, but will include systematic testing of any versions of the product, as well as the testing of portions of the program on completion. Any add-ons to the program will also be tested. It is likely the the client will desire to test any version and provide feedback.

Review

A review of the progress made on previous goals and the setting of new ones will take place every two weeks, with the faculty advisor as well as with the client. Progress and planning will likely be discussed weekly when the group meets.

Documentation

Documentation will be provided both for the administrative and user level on completion of the product. The user-level documentation will be a nontechnical guide to the use and functions of the program.

Installation Plans

Once complete, the installation of the system will require a unix based server running Apache2 with Php5 and MySQL 5. The complete source code will be given for execution. Time permitting, a setup shell file will also be included that will allow the system administrator to set up the system automatically with minimal input.