Software Plan

Requested By: Dr. Scott Hunter
Assistant Professor of Computer Science
Computer Science Department of Siena College

Ms. Jami Cotler
Instructor/Lecturer of Computer Science
Computer Science Department of Siena College

Dr. Tim Lederman
Professor of Computer Science
Computer Science Department of Siena College

Automated Excel Grading System

Oasis Technologies

Prepared By: Brian Salmon – Team Leader
Vincent Leone
Jim Dzembo
Chris Mahar
Josh Yerkie

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System Definition

I. Problem Definition

There are a large number of students that enroll in CSIS-010, Introduction to Computer Applications, and CSIS-011, Problem Solving with Spreadsheets at Siena College. Each of these students is required to hand in, at a bare minimum, a pre-lab and a lab a week. Every one of these assignments must be graded on how well the student met certain criteria. Due to this abundance of information that must be graded, and the fact that all grade-able information must be in spreadsheets, it makes little sense for students to hand in hard copies of their work and for their teachers to grade them manually when we have computers to do this work for them.

Dr. Scott Hunter and Ms. Jamie Cotler, instructors of these courses, have realized the need for an automated grading system and have hired us to develop a web-based program where students can submit their work. The website will give students the ability to create accounts and upload labs and pre-labs for grading. When labs have been graded by our system, students will be able to view their grades. When pre-labs are submitted students will receive an immediate evaluation of their work. This way, students can be more prepared for their labs and know what things they need to work on and what things they have a good handle on. Teachers will have separate accounts that will have the ability to upload solutions and answer keys that our system will use to grade the students work. Teachers will also have the ability to view submitted work and to change grades on each assignment. Since the pre-labs will be handed in before lab, the teacher can look at the evaluations before lab and gain a better knowledge of what area's students are having trouble with.

II. System Justification

The purpose of this software will be to lend a grading hand to instructors so they do not need to perform the tedious task of hand grading spreadsheets and also to provide the same instructors with the ability to see where students are having trouble. The second purpose of this software is to give meaning to the idea of pre-labs. Students will upload their pre-labs and have some idea where they stand with the material to be covered in the upcoming lab.

III. Goals for the System and on the Project

The goal of our project is to develop software that will be able to grade spreadsheets and provide the teacher and the student with information about why they received the grade they did.

IV Constraints on the System and on the Project

Constraints on our project are composed mainly of limited time and resources. We have only a five man team and only the resources provided to us by Siena College, also we have only one school year to work on this project.

V. Functions to be Provided

- Instructors will be able to upload solutions and answer keys for each assignment.
- Students will have personal accounts from which they can upload their work.
- Software will grade students work upon submission and save graded work for student and instructor to see.
- Instructors will have the ability to view all students work and change any grade.
- Instructors will be able to download spreadsheets of their student's grades or view them on the website.

VI. User Characteristics

The users of this software will be the students and instructors of CSIS-010 and CSIS-011. Students will submit their labs and pre-labs to our website and receive their grades. Teachers will review student's submissions and make any grading corrections necessary.

VII. Development / Operating / Maintenance Environments

The software will be developed in the Software Engineering lab in addition to other computer work stations provided by Siena College. It will be operated on the personal computers of both students and instructors in CSIS-010 and CSIS-011. The maintenance and upkeep of our software will have to be determined at a later time.

VIII. Solution Strategy

We will be using what is known as the Waterfall Method to come up with an effective solution to our problem. This method includes the following steps.

- Software Plan - Our team meets with our clients and we decide on what problems need to be fixed.
- Analysis - The team meets repeatedly with our clients to refine the problem and center in on the biggest issues.
- Preliminary Design - With our finished problem in mind, our team creates a fundamental way of tackling the problem.
- Detailed Design - The actual coding is written and then improved thoroughly. This will be done in the Spring 2007 Semester.

- Acceptance Test - The software is installed and the system goes live for our clients to use. This will also be done in the Spring 2007 Semester.

IX. Priorities of System Feature

The key feature of this software will be to provide an automated system that will grade pre-labs and give immediate feedback to students which includes a grade and a helpful explanation of what errors the student made. Other features will include the ability for teachers to change grades and download spreadsheets of their student's grades.

X. System Acceptance Criteria

The software will accomplish the following tasks:

- Instructors will be able to upload solutions and answer keys.
- Students will be able to create accounts and upload spreadsheets onto website.
- Spreadsheets will be graded automatically and grades along with explanation of grades will be posted for student and instructor to see.
- Pre-labs will be graded and posted with explanations of what area's students need more work on before their upcoming lab.
- Instructors will have the ability to view student submissions and change grades as needed.
- Instructors will have the ability to download a spreadsheet of their students grades

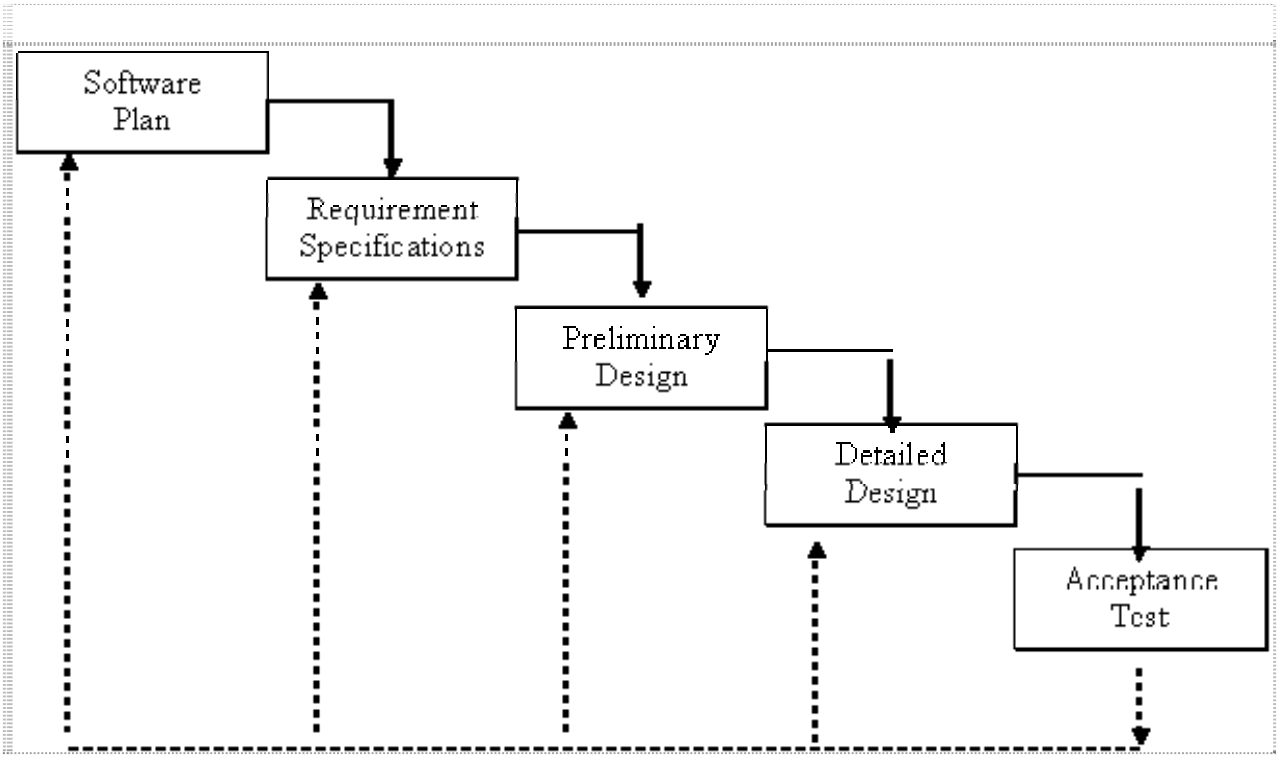
Project Plan

I. Life Cycle Model

Our project plan follows the Linear Sequential Model commonly found in the software engineering and development practice. This approach helps in keeping our team focused and productive.

In general, it is organized as follows:

Software Plan
Requirement Specifications
Preliminary Design
Detailed Design
Acceptance Test



Software Plan

Examine our given problem and determine the overall expectations and goals for the final product.

Requirement Specifications

Develop a more precise understanding of the problem and address specific requirements that the client wants included in the software.

Preliminary Design

Once the specifications and needs are made clear by the client our team will be able to observe the requirements and create a high level model of the software we will be making.

Detailed Design

The project is now coded using the Required Specifications and the Preliminary Design set forth by the client.

Acceptance Test

This is the last part of the Life Cycle Model; it's where we present our software to the client for his approval. The client will verify that the software meets his requirements.

II. Organizational Structure:

Oasis Technologies has assigned the following employees to this project:

Name	**E-Mail Address**	**Phone**
Brian Salmon	brian.salmon@siena.edu	(518)598-3982
Jim Dzembo	james.dzembo@siena.edu	(518)207-6911
Josh Yerkie	josh.yerkie@siena.edu	(315)794-1946
Vincent Leone	vincent.leone@siena.edu	(518)859-0779
Chris Mahar	christopher.mahar@siena.edu	(518)257-6393

The team structure of *Oasis Technologies* is Democratic. All project decisions are decided by majority rule. Any ties will result in the Team Leader making the final decision. The responsibilities are as follows:

Vincent Leone – *Librarian*: The task of the librarian will be to keep track of our group's progress and document it for the team throughout the software design process. He will also document our team's meetings.

Josh Yerkie – *Systems Administrator*: The systems administrator will be responsible for maintaining the team's hardware resources consisting of two team databases.

Brian Salmon – *Team Leader*: The team leader will organize meetings and interviews with the clients. He will also keep the team being productive and efficient.

Jim Dzembo – *Webmaster*: It is the responsibility of the webmaster that the team's project status is reflected correctly and up to date on our website.

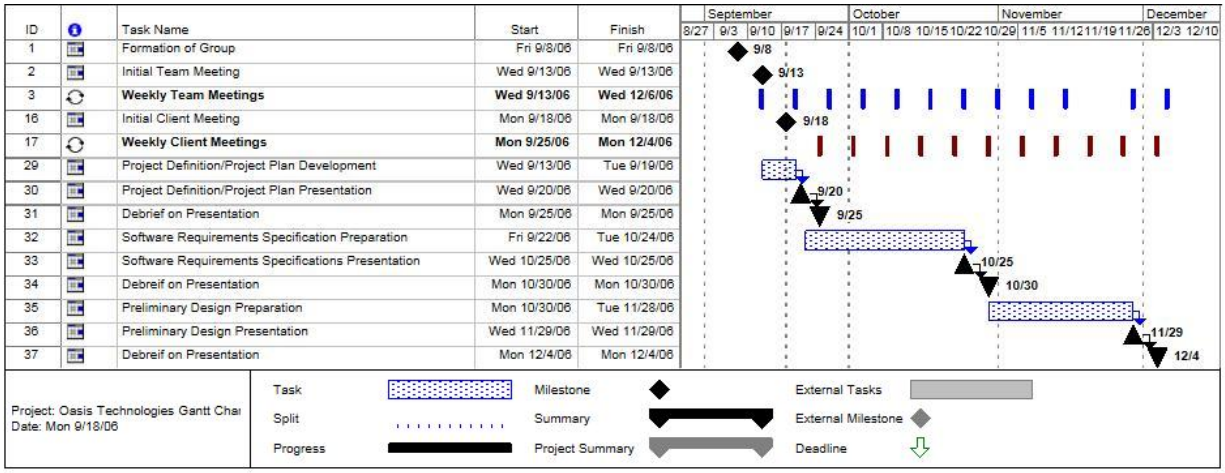
Chris Mahar – *Web Developer*: The developer position allows the member to assist with the web-site and the member will also be to assist the rest of the group at short notice without having to worry about his own scheduled tasks.

III. Preliminary Staffing and Resource Requirements:

For the development of our software we will need to use two work stations in the Software Engineering Lab. Including the printers as well as Oracle for database management, Dreamweaver and the rest of the Macromedia Studio for our Team website along with Java, mySQL, HTML, Apache Web Server and PHP coding. We will be guided by Dr. Scott Hunter and Ms. Jami Cotler to meet their requirements for the software.

IV. Preliminary Development Schedule:

Gantt Chart:



ID	Task Name	Start	Finish
1	Formation of Group	Fri 9/8/06	Fri 9/8/06
2	Initial Team Meeting	Wed 9/13/06	Wed 9/13/06
3	**Weekly Team Meetings**	**Wed 9/13/06**	**Wed 12/6/06**
16	Initial Client Meeting	Mon 9/18/06	Mon 9/18/06
17	**Weekly Client Meetings**	**Mon 9/25/06**	**Mon 12/4/06**
29	Project Definition/Project Plan Development	Wed 9/13/06	Tue 9/19/06
30	Project Definition/Project Plan Presentation	Wed 9/20/06	Wed 9/20/06
31	Debrief on Presentation	Mon 9/25/06	Mon 9/25/06
32	Software Requirements Specification Preparation	Fri 9/22/06	Tue 10/24/06
33	Software Requirements Specifications Presentation	Wed 10/25/06	Wed 10/25/06
34	Debreif on Presentation	Mon 10/30/06	Mon 10/30/06
35	Preliminary Design Preparation	Mon 10/30/06	Tue 11/28/06
36	Preliminary Design Presentation	Wed 11/29/06	Wed 11/29/06
37	Debreif on Presentation	Mon 12/4/06	Mon 12/4/06

V. Project Monitoring and Control Mechanisms:

Even though we will have client meetings once a week, the project team members will have to discuss the requirements and the state of the project on a regular basis. Our team will always analyze the Problem Definition/Project Plan, Software Requirements Specifications and Preliminary Design to make sure the project is going in the right direction. Our software will be observed throughout this project and if it's found to be unfit for our client we will take proper actions to resolve the problem

VI. Tools and Techniques to be Used:

We will be using Microsoft Project and Microsoft Office on the two computers in the Software Engineering Lab for the project planning phase. To design our web site and web based applications we will be using PHP, HTML, Javascript and Java. Our system will be based off of the specifications and requirements provided by Dr. Hunter and Ms. Cotler.

Our team will be using Java, HTML, Apache Web Server, and Dreamweaver to develop a website/backend combination to handle the grading system. Management of this system we will be implementing PHP code for the front-end development. Our documents will be made using Microsoft Office suite.

VII. Programming Languages:

To develop our automated excel grading system the team will utilize Java, HTML, Javascript, PHP and MySQL.

VIII. Testing Requirements

The team and Dr. Hunter and Ms. Cotler will participate in testing many times throughout development. These tests will provide the team with knowledge of what the problems are with the work already completed, and also what does and does not meet the client's expectations.

IX. Supporting Documents Required

The following documents will be given to the clients on the dates shown:

1) Problem Definition/Project Plan - September 19, 2006
2) Software Requirements Specifications - October 23, 2006
3) Preliminary Design - November 27, 2006

X. Manner of Demonstration and Delivery

Presentations will be given throughout the development process. The presentations will include PowerPoint presentations and demonstrations. These presentations will show how the development process is progressing and to what extent the team's work is meeting the client's expectations. The presentations will be given on the following dates:

1) Problem Definition/Project Plan - September 20, 2006
2) Software Requirement Specifications - October 25, 2006
3) Preliminary Design - November 29, 2006

Appendices

I. Sources of information

The sources of information for this project plan included the meeting conducted with Dr. Hunter and Ms. Cotler, lectures from Dr. Lederman's Software Engineering I class, and software plans from years past done by previous students.

II. Glossary of Terms

Java: A programming language used for developing object oriented programs.

PHP: PHP hypertext preprocessor is a widely-used general-purpose scripting language that is especially suited for web development.

JavaScript: Javascript is a scripting language developed by Netscape that can interact with HTML source code, enabling Web authors to spice up their sites with dynamic content.

HTML: Hypertext Markup Language (HTML) is programming language used in the creation of Web pages.

MySQL: An open source relational database management system (RDBMS) that uses Structured Query Language (SQL), the most popular language for adding, accessing, and processing data in a database.

Gantt Chart: A popular type of bar chart that illustrates a project schedule including start and finish dates, tasks, and events that are to occur to complete the project.

III. Resumes

177 Meehan Rd. Mechanicville NY 12118	Home- 518-664-4714 Cell- 518-598-3982 Email Brian.Salmon@siena.edu

Brian Salmon

Objective	To pursue a challenging and interesting career in computer science and technology.
Work Experience	New York State Department of Taxation and Finance June 2006-present • Developed prototype for corporate tax return processing software • Assisted in designing other of the departments programming projects
	New York State Police Computer Crimes Unit September 2006-present • Assisted investigators in computer related work for investigations
Education	2003-present Siena College Loudonville, NY • B.S. Computer Science • Business minor • Expected graduation May 2007

Website Development	Websites for small businesses • Morgan's Paving and Excavation www.morganspaving.com • ERNO Tree Service www.ernotreeservice.com • SDS Tree and Stump Removal www.sdstree.com
Technical Experience	Programming Languages (in order of proficiency): Java, Html, JavaScript, CSS, SQL, PHP, Visual Basic, Intel Assembly Other Skills/Programs: XML, XSD, IBM Websphere Integration Developer, Macromedia Suite, Oracle DBMS, Microsoft Office, Linux
Computer Science Coursework	• Intro to Computer Science, Intro to Programming, Data Structures, Assembly Language and Computer Architecture, Object Oriented Programming and Design, Database Management, Analysis of Algorithms, Web Design, Communications and Networks, Software Engineering (in progress)
Other Work Experience	2003-2005 SDS Tree and Stump Removal Mechanicville, NY
	2001-2003 Mangino's Restaurant Saratoga Springs, NY
	2001, 2002, 2003 Martins Haunted Hayrides Ballston Spa, NY

James T. Dzembo
90 Brinker Drive
Rensselaer, NY 12144
(518) 207-6911; James.Dzembo@siena.com

EDUCATION

Siena College, Loudonville, NY
BS in Computer Science, Minors in Business, Mathematics, May 2007
Cumulative GPA: 3.66/4.0
Computer Science Major GPA: 3.79/4.0
Business Minor GPA: 3.25/4.0
Mathematics Minor GPA 3.44/4.0

RELEVANT COURSES

Software Engineering I, Operating Systems, Web Design, Analysis of Algorithms, Object-Oriented Design and Programming, Assembly Language and

Computer Architecture, Data Structures, Intro. To Computer Science, Intro. To Programming, Intro to Computer Applications

PROGRAMMING LANGUAGES

Visual Basic, Java, HTML, C, C++, PHP, JavaScript, Pascal, Q-Basic.

RELEVANT WORK EXPERIENCE

W.B. O'Connor's Inc., ***Computer Systems Advisor / Data Entry,*** October 2004 – Present

- Entered data such as inventory, pricing, customers, contract prices, standing orders, and other information into new system used by the store.
- Altered and imported data from Microsoft Excel spreadsheets and Access databases into the system.

Siena College, ***Group Tutor – Computer Science,*** September 2004 – May 2006

- Helped students enrolled in Intro. to Computer Science with labs and homework in Visual Basic.
- Helped students enrolled in Intro to Programming with labs and homework in Java.
- Required good knowledge of Visual Basic and Java programming languages.

RESEARCH EXPERINECE

- Will be working with Dr. Eric Breimer on research project related to Proteins and Computer rendering/prediction of protein folds.

ADDITIONAL WORK EXPERINECE

W.B. O'Connor's Inc., ***Sales Associate / Shipping / Receiving,*** October 2004 – Present

- Ran cash registers and billed Accounts Receivables.
- Packed and shipped orders through UPS and USPS.
- Received incoming shipments.

Target, ***Electronics Cashier,*** June 2003 – August 2003

- Worked register in Electronics department.
- Stocked shelves in Electronics department and Home and Garden Department.
- Required basic knowledge of electronics such as cameras, DVD players, TV's, cables, etc.

Christopher P. Mahar

Present Address Permanent Address
Siena College, SPOB 4015 74 Riley Cove Road
515 Loudon Road Ballston Spa NY, 12020
Loudonville NY 12211 518-587-0310
PHONE: 518-257-6393
E-MAIL: scm1714@siena.edu

OBJECTIVE

To obtain a position in the computer science field.

EDUCATION

Siena College, Loudonville, NY
B.S. in Computer Science
Minor in Creative Arts , May 2007

RELEVANT COURSE WORK

Database Management, Object Oriented Design, Procedural Design and Programming, Data Structures, Analysis of Algorithms, Discrete Mathematics I and II, Calculus I and II, Introduction to Computer Science, Digital Electronics I and II, Computer Architecture and Assembly Language, Computer Graphics, Marketing, and Software Engineering I.

COMPUTER EXPERIENCE

* Programming in C++, HTML, Assembly Language, PHP, JavaScript, Dynamic HTML, Java, Visual
Basic, XML, Intel Assembly and Flash.
* Familiarity with Oracle, Windows 95/2000/XP/NT, UNIX.
* Working knowledge of Web Design, Internet Explorer, Flash, Oracle, and various search engines.

RELEVANT COMPUTER EXPERIENCE

Software Engineering, **Siena College**, Loudonville, NY Fall 2006-Present

* Working with five peers to design and build an automated Excel grading program for Dr. Hunter.

WORK EXPERIENCE

Web Developer, **Siena College**, Loudonville, NY Fall 2006-Present

* Further my knowledge in HTML, PHP, and Java Script by designing our teams Web Site and Web
Application.

ACTIVITIES

Member, **Siena College Computer Science Club**, 2004-Present.

Vincent J. Leone

Present Address:
Siena College
515 Loudon Road
Loudonville, NY 12211
Telephone: (518) 859-0779

Permanent Address:
43 Knollwood Dr.
Saratoga Springs, NY 12866
Telephone: (518) 859-0779
E-Mail: vincent.leone@siena.edu

Objective

To obtain a position in the field of computer science; special interest in Web Design.

Education

Siena College, Loudonville NY
Working toward a B.S. in Computer Science, Minor in Business,
Expected Graduation: May 2007

Relevant Course Work

- Introduction to Computer Science, Introduction to Programming, Data Structures, Assembly Language and Computer Architecture, Object-Oriented Design and Programming, Analysis of Algorithms, Web Design
- Financial Accounting, Managerial Accounting, Organization & Management, Marketing, Macroeconomics, Microeconomics

Computer Skills

- Programming in Java, Assembly, VB, HTML, XML, SQL
- Proficient in Windows & Internet
- Experience with Excel, PowerPoint, Word

Work Experience

Waiter, Buca di Beppo, Albany, NY, June 2005 – Present
Barback, Saratoga Race Track, Saratoga Springs, NY, August 2004/2005
Food Prep/Pantry Chef, Saratoga Brewpub, Saratoga, NY Spring 1999-Fall 2003