Software Plan:

Excel Grading System

Prepared For:

Dr. Scott Hunter
Assistant Professor
Computer Science
Siena College

Ms. Jami Cotler
Instructor
Computer Science
Siena College

Prepared By:

NSG Software Development

Matt Warner
Justin Spegele
Kristen Dobreski
Dan Lomanto

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System Definition

a. Problem Definition

With the large number of students enrolling in Computer Science 010 and 011 at Siena College, grading their Excel labs has become a very time-consuming task. Our clients, Dr. Scott Hunter and Ms. Jami Cotler have requested that we create a program that will grade their students Excel labs. These labs are submitted online in Excel spreadsheet format, and so our programs task will be to read in each of those spreadsheets, grade them, and submit a report on each student to the instructor. Dr. Hunter and Ms. Cotler have asked that the program check all of the obvious answers to see if they are right or wrong. Answers that may have some "gray area" should be flagged and included in the report so that the instructor can examine them more closely. They have also asked that an overall class report be created. This report should include class averages of each question and the overall grade. Also, the instructors should be able to easily override an answer marked wrong and throw out questions that they feel should not have been included or may not have been fair.

b. System Justification

The purpose of our Excel program is to expedite the grading process that Dr. Hunter and Ms. Cotler go through each semester when grading their students Excel assignments. The program will grade all of the simple answers and examine font size, font type and spacing, which can be difficult for the instructor to grade. It will then produce a report on each student so that the instructor only has to grade the few problems that would be difficult for a program to grade, namely questions where partial credit is given.

c. Goals for the Project

The goal of this project is to create a program that will take an answer key, in Microsoft Excel spreadsheet format, and grade student spreadsheets that are submitted online. This software will save Dr. Hunter and Ms. Cotler a significant amount of time, since they will only have to examine a few questions from each student lab.

Our goal for this project is to further acquaint ourselves with Excel and develop a method of quickly reading spreadsheets into our program and grading them. We will be using the Classic Waterfall Method of Project Management along with the appropriate software engineering procedures to organize our work and engineer this program throughout the semester.

d. Constraints on the Project

The software agent must be able to take submitted Excel files off the web and read them into memory for fast grading. Also, the program must be able to determine which answers to grade and which to flag for further examination by the instructor. The program must then display a report for each student and allow the instructor to easily go into the system and change grades or disregard questions. Since this software will be web-based, there will need to be some security on the site, and so both students and instructors will have user logins and passwords.

e. Functions to be Provided

- There will be an online database to store students, their individual and overall grades, their instructor, and overall class averages.
- User logins for students who will only be able to submit work.
- User logins for instructors who will have complete access to the grading program and the database.
- Reports on individual students.
- Reports on class averages.
- Instructors will be able to change answer keys and disregard questions.

f. User Characteristics

The main users for this program will be Dr. Hunter and Ms. Cotler. Other instructors may use the program too, but it will be in the same manner as Dr. Hunter and Ms. Cotler. All of the users will use the program for the same purpose and in the same manner. It will be used to grade Excel spreadsheets inputted to them and it will submit reports to the users. Also, users will have the ability to disregard questions and manually grade certain questions.

g. Development / Operating / Maintenance Environments

The software will be developed at Siena College in the Software Engineering lab. Since the software will be web-based, it will be available anywhere where there is internet access, though only approved users will be issued logins and passwords. The system will be based on an outside computer and so will be maintained from that location.

h. Solution Strategy

The project team will follow the model known as the Waterfall Model in order to develop the appropriate software for the clients. This will require the folowing activities:

Project Definition: The team will work work together to solve the problem of the overwhelming work-load that Dr. Hunter and Ms. Cotler have from their CSIS 010 and CSIS 011 classes.

Analysis and Requirements – The project team will meet with our clients and document the requirements of their desired software.

Design of the Solution – The project team will translate the system requirements into software requirements.

Code and Test the Solution – The project team will translate the software requirements into a programming language. As time goes on the program will continuously be checked to make sure it is meeting the specifications of the clients. This step will not occur until the Spring 2006 semester.

Install and Maintain – This step involves the actual installation of the software product. Documentation that will assist the client in using and maintaining the system will be provided in the Spring 2006.

i. Priorities of System Failure

The main priority of our team is to make sure there are no ways for a student to place a certain input as an answer that will always be counted as a correct answer. This way the grading system will be fair to all students and it will make grading much easier for the professors who are teaching the class. To make the job of our clients easier is our main priority.

j. System Acceptance Criteria

The web-based program will allow for a number of online activities and will, at minimum, allow:

1.) Teachers to access student records of any assignment that has been completed.
2.) Allow users to see a correct example of the labs.
3.) Allow teachers to access summaries of overall class performaces after each exercise to see if there were problem areas for the students.
4.) Allow students to see what they got right and what they need to improve on in order to ensure future success.
5.) Allow students to see any changes that may have occurred to assignments.

k. Sources of Information

The major sources of information came from the bi-weekly meetings with Dr. Hunter and Ms. Cotler. Other information sources were the class lectures provided by Dr. Lederman and from text Software Engineering, A Practioner's Approach, by Roger S. Pressman.

l. Glossary of Items

GUI:

Graphical User Interface: A user interface based on graphics (icons, pictures, and menus) instead of text; uses a mouse as well as a keyboard as an input device.

Gantt Chart:

A chart that depicts progress in relation to time, often used in planning and tracking a project

HMTL:

Hypertext Transfer Markup Language: A markup language used to structure text and multimedia documents and to set up hypertext links between documents, used extensively on the World Wide Web.

Linear Sequential Model:

Sometimes called the *classic life cycle* or the *waterfall model*, this model suggests a systematic, sequential approach to software development that begins at the system level and progresses through analysis, design, coding, testing, and support.

Software:

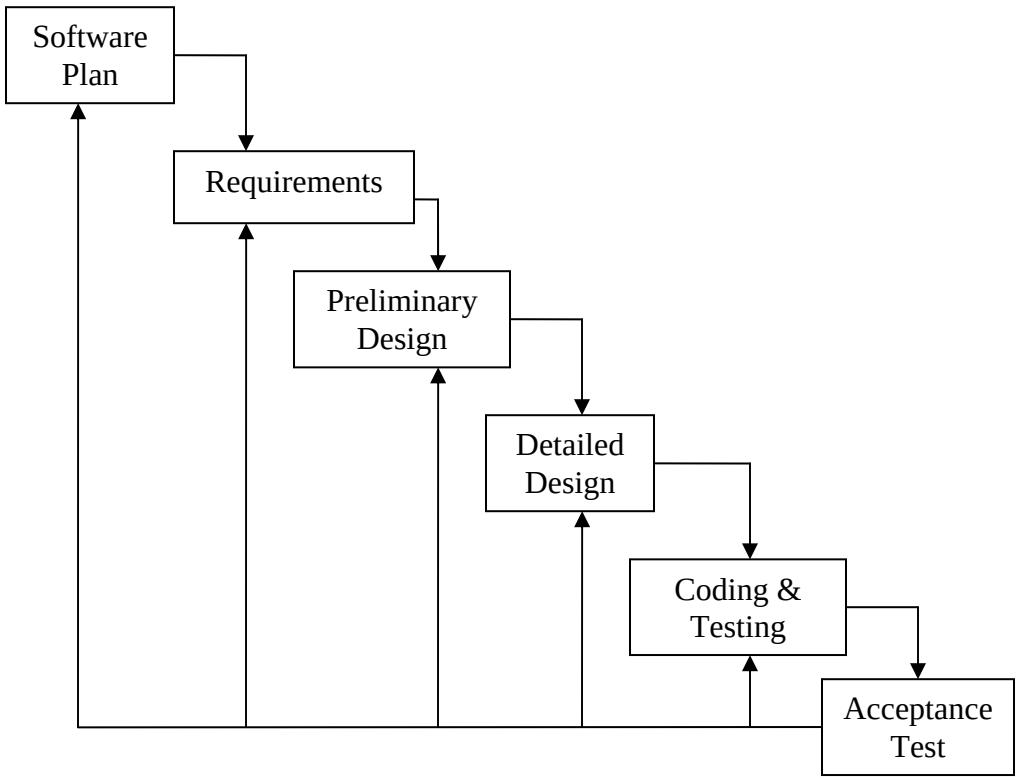
Written programs, procedures, or rules and associated documentation pertaining to the operation of a computer system and that are stored in read/write memory.

Excel:

A program that enables the organization of numbers and formulas for various businesses.

Project Plan

a. Classic Waterfall Model



- Software Plan – Define the problem presented by the client(s).
- Requirements – This is where the development team must study the problem proposed to them and determine the requirements for the software agent. This requires a detailed study of the needs of the clients.
- Preliminary Design – Once the study is completed and requirements are laid out, the development team can focus on creating a high-level model of the software to be created.
- Detailed Design – The preliminary design must then be coded into the chosen programming language.

- Acceptance Test – The software is then presented to the client for approval and maintained by the development team.

b. Organizational Structure

- NSG Software Development consists of:

Matt Warner matthew.warner@siena.edu
Justin Spegele justin.spegele@siena.edu
Dan Lomanto daniel.lomanto@siena.edu
Kristen Dobreski kristen.dobreski@siena.edu

- Excel Project Team Structure:

Matt Warner – Team Leader & Network Administrator
Justin Spegele – Webmaster
Dan Lomanto – Developer
Kristen Dobreski – Librarian

- Project decisions are made as a team and the workload is distributed as follows:

Team Leader – Organized group meetings, takes group attendance and maintains contact with the clients.

Network Administrator – Maintains the user accounts for the other team members and their workstations in the Software Engineering Lab.

Webmaster – Creates and maintains the company webpage.

Developer – Helps to design software to clients' needs.

Librarian – Records notes during team meetings and client interviews, and keeps track of all other team documents throughout the semester.

c. Preliminary Staffing and Resource Requirements

For the development of this software we will need access to the Software Engineering lab stations and printers as well as several programs including Oracle, for database management, Dreamweaver, for web site development, and compilers for both C++ and PHP programs. Our main resources will be Dr. Scott Hunter and Ms. Jami Cotler, though we will also need several text and web-based resources which will be examined at a later date.

d. Preliminary Development Schedule

Please refer to the Gantt chart for our preliminary development schedule.

Our team will be using Microsoft Visual C++ and Dreamweaver to develop a website/backend combination to handle the grading system. Management of this system will be using the php coded front-end developed for this purpose. Documents will be developed using the Microsoft Office suite.

e. Programming languages

The programming languages we will be using include Dreamweaver and php for the website front-end, and Microsoft Visual C++ for the backend checking.

f. Testing Requirements

The team and outside students will test the program during the development process, and we will invite Dr Hunter and Professor Cotler to join to critique its progress.

g. Manner of Demonstration and Delivery

Our main manner of demonstration to our clients will be presentations. There are three presentations scheduled to review the most up to date information with the clients and to make sure we are doing what they're asking for. These presentations will consist of power point slides as well as handouts and a question and answer session with the client. Our goal is to make sure they are informed every step of the way and that they are satisfied with our plan and progress. Dates of demonstration and delivery of documents to our clients is as follows:

Project Definition/Project Plan Documents Delivered: September 20, 2005

Project Definition/Project Plan Presentation: September 21, 2005

Software Requirements Specifications Documents Delivered: October 24, 2005

Software Requirements Specifications Presentation: October 26, 2005

Preliminary Design Documents Delivered: November 28, 2005

Preliminary Design Presentation: November 30, 2005

Dates are subject to change.

h. Supporting Documents Required

The supporting documentation will be distributed to our clients as follows:

Project Definition/Project Plan: Due September 20, 2005

Software Requirements Specifications: Due October 24, 2005

Preliminary Design: Due November 28, 2005

Dates are subject to change.

i. Sources of information

At this point, most of the information we have is from Dr. Lederman's lecture as well as meetings from our clients, Dr. Hunter and Ms. Cotler. We also referred to the class text book, *Software Engineering: A Practioner's Approach* by Roger S. Pressman, and past Software Engineering teams' websites.

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Yaphank, NY 11980
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(631) 924-7217 (Home)
sjs1126 @ siena.edu

EDUCATION

Siena College, Loudonville, NY
BS in Computer Science, Minor in Business, May 2006

- Overall GPA of 3.26, Major GPA of 3.30
- Dean's List Spring 2003, Fall 2003

RELEVENT COURSEWORK

- Introduction to Computer Science, Procedural Design and Programming, Data Structures, Assembly Language, Object Oriented Programming, Analysis of Algorithms, Programming Languages, Database Management and Introduction to Artificial Intelligence.
- Currently enrolled in Web Design and Management and Software Engineering I

PROFESSIONAL EXPERIENCE

Student Consultant
Siena College Information and Technology Services, Loudonville, NY, Sept. 2004 – Present

- Maintain computers and printers in computer labs during shift.
- Help students with any problems they have in the labs using the computers and various programs such as Word, Excel, PowerPoint, Outlook and Explorer.
- Provide main helpdesk support for both students and faculty concerning any computing problems they may have and/or referring them to I&TS technicians.
- Assist students in connecting their personal computers to the Siena College network.

Cashier
The Home Depot, West Patchogue, NY, Summers of 2003, 2004 & 2005

- Worked both the main registers and returns registers.
- Frequently assisted customers in various departments.

COMPUTER SKILLS

- Knowledgeable in Microsoft Word, Excel, PowerPoint, Windows XP, UNIX and Research Databases including Lexis-Nexis, Jstor and ProQuest.
- Extensive experience programming in C++.
- Limited experience programming in Ruby, Scheme, SQL and Assembly Code.

COLLEGE ACTIVITIES

- Secretary of Siena College Computer Science Club, Sept. 2005 – Present.

Kristen M. Dobreski

Present Address
Address
Siena College, SPOB 2176
Downs Circle
515 Loudon Road
14450
Loudonville, NY 12211
(585)752-1718; E-mail: skd7014@siena.edu

Permanent
Address
99 Country
Downs Circle
Fairport, NY
14450
(585)223-5281

CAREER OBJECTIVE

An IT position using my programming and other computer skills I have learned through internships and course work.

EDUCATION

Siena College, Loudonville, NY
B.S. in Computer Science, May 2006

RELEVANT EXPERIENCE

IT Intern, Nixon Peabody LLP, Boston, MA; Summer 2005

- Specialized in helping the Attorneys at Law better their computer skills and fix user problems.

ADDITIONAL EXPERIENCE

***Cashier*, Wegmans Food Markets**, Rochester, NY; 6/2000- Present

- Focused on customer satisfaction and friendly interaction.
- Received the 2003 Wegmans academic scholarship for great work performance.

RELEVANT COURSES

Object Oriented Design and Programming, Siena College, Spring 2004
Very challenging class emphasizing programming in C++ using objects. Had a chance to design many programs of my own including the game Master Mind.

Computer Applications, Siena College, Spring 2005
Learned to use many basic computer programs such as Word, Access, Power Point, and Excel. Emphasized the ideas that I learned in programming and enhanced my skills even more.

Database Management, Siena College, Fall 2005

Learned the basics of programming databases. Used SQL to demonstrate how a database works and how it is used.

Programming Languages, Siena College, Fall 2005
Introduced to new programming languages such as Ruby and Scheme. These new languages helped to enhance my C++ skills and to get practice with other languages.

Daniel M. Lomanto
Daniel.Lomanto@siena.edu

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Queensbury, NY 12804

Home: (518) 743-0707
Cell Phone: (518) 222-5107

Career Objectives:

To continue to grow in leadership and knowledge, while tackling computer science and mathematical related problems.

Education:

Siena College, Loudonville, NY
B.S. in Computer Science with a second major in Mathematics

Working Experience:

May 2005 – August 2005
Pizazz Painting
1-800-PAINTJOB

- Employer – Michael McGrath
- Laborer while doing commercial work with a team of workers on multiple styles of house/building painting and cleaning.

May 2004 – August 2004
New Way Lunch
(518) 761-3356

- Employer - Susan Gazetos
- Cashier and Short Order Cook who dealt with customers on a regular basis.
- Had responsibility of closing down restaurant and keeping track of funds at night.

May 2003 – August 2003
Atlantic Testing Laboratories
(518) 383-9144

- Employer – Greg Wischer
- Concrete and Construction Material Tester
- ACI (American Conrete Institute) certified until 2008
- Worked on various contruction sites with Foremans and Engineers to create consitent working materials for large corporations.

Computer Skills:

Proficient in Microsoft Word, Excel, PowerPoint, Windows XP
Sofware Languages: C++ and Java
Also comfortable with using Macintosh Computers

Matthew **W**arner

Email: smw3158@siena.edu
15 Spruce Run
East Greenbush, New York 12061
(518) 479-3933

OBJECTIVE

A position as a **network intern** to enhance my knowledge of network security.

EXPERIENCE

Student Consultant, Siena College, Loudonville, NY, 2001-present.

- Student employee of Siena's Information and Technology Services(I&TS).
- Assist students in various office products, along with general technical support.

Student tutor, Siena College, Loudonville, NY, 2003-2004.

- Assisted students in computer science programming homework assignments.
- Able to communicate clearly to students, and listen to their needs.
- Analytical approach to problem solving.

Collaborative skills

- Able to work well in a team environment.
- Experience planning large group projects and overseeing their completion.
- Experience taking obscure ideas from clients, and changing them to a usable form.

Programming

- Proficient in C++, Visual Basic, Java, BASIC, Intel 86 assembly language, SCHEME, and SQL(oracle databases).
- Background in both hardware and software.
- Experience setting up large scale network schema.

General computer skills

- Thorough knowledge of the Microsoft office suite, including Access, Excel, Word, FrontPage, and PowerPoint.

EDUCATION

Siena College, Loudonville, NY. BS in Computer Science, GPA 3.1/4.0, May 2006.

ACTIVITIES

- ***Vice President:*** Computer Science Club, Siena College, September 2003 - September 2004.
- ***President:*** Computer Science Club, Siena College, September 2004 – present.
- ***Student Member:*** Association of Computing Machinery, September 2004 – present.
- ***Member:*** American Statistical Association, 1999-present

ACCOMPLISHMENTS

- Built a computer system for use involving baseball score keeping.
- Maintain the Education Club, History Club, Computer Science Club, and Urban Youth Scholars websites for Siena College.
- Comptia Student of the Year, 2001.
- Well organized.
- Excellent communication and team skills.

ID	Task Name
1	NSG Software Design
2	**Meetings**
3	Team Meetings
4	Client Meetings
5	**Project Definition Plan**
6	Definition Plan
7	Definition Presentation
8	**Software Requirements Specification**
9	Software Requirements
10	Software Requirements Presentation
11	**Preliminary Design**
12	Preliminary Design
13	Preliminary Design Presentation