

Software Plan

Proposed Project:

Javanet

Clients:

Dr. Darren Lim
Assistant Professor
Department of Computer Science
Siena College

Mrs. Pauline White
Visiting Instructor
Department of Computer Science
Siena College

Delivered By:

Phoenix Tech

Prepared By:

**Jessica Edmonds
Marc Iuliano
Anthony Torres
Erica Weisgerber**

September 18st, 2008

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System Definition

1.1 Problem Definition

The purpose of Javanet will be to provide a dynamic and interactive way for students to practice programming. The intent of Javanet is learning by doing. Students need easy access to a large range of questions with which they have rapid feedback from the program and instructors.

1.2 System Justification

Javanet will help instructors to track students' progress and ultimately identify who needs help. This will allow instructors to react more quickly to the needs of the students. Javanet will also ensure the standardization of course material between various instructors of the same courses.

1.3 Goals for the System and Project

The primary goals of Javanet are to expedite the grading of quizzes or homework and allow for the students to have limitless opportunities to practice problems. Javanet will look to assist instructors in tracking the progress of their students and help them identify any difficulties the students may be having during the learning process. The project will allow for questions from instructors to be presented to the student users through an interface with which they will input code and receive feedback.

1.4 Constraints on the System and Project

At a future point in the process of conception, an API must be selected and be clear to the client as to which version the code is being compiled on. Javanet must work with the Windows Vista and Mac Leopard operating systems. The clients have also voiced that they do not wish to purchase equipment to develop or run the software.

1.5 Functions to be Provided

- Instructor will be able to maintain question sets
- There will be a practice mode and a quiz mode
- All problems will be formatted for submission of code solutions
- One question will appear per page
- Software will automatically grade code upon submission
- Instructor will be able to override any grading
- User should have instant feedback after final submission of answers
- Statistics will track students' progress

1.6 User Characteristics

There will be three types of users; Administrators, Instructors, and Students. The primary users of this software will be the students in the Java sequence courses, as well as the instructors themselves. Every student who is enrolled in this course will be required to submit their assignments to be graded by this software. In addition, instructors will use this software to view grades and automatically generated reports of class statistics.

1.7 Developing/Operating/Maintenance Environments

Development of Javanet will take place in Roger Bacon 348 on the Software Engineering workstations. The workstations are comprised of a Dell Dimension 4550 operating on Windows XP and an iMac running on Mac OS X. Users will be able to access Javanet through MS Internet Explorer 6.0+, Mozilla Firefox 2.0+, or Apple Safari 3.0+. Maintenance of Javanet will be determined at a later date.

1.8 Priorities of System Features

The main feature of this software is its ability to provide Siena students studying Java of all levels a collection of questions that require source code as a solution. In addition, students and instructors will be able to statistically track their progress through immediate and long-term uses.

1.9 Solution Strategies

In order to reach our clients' needs, our team will use the Linear Sequential Model, also known as the Classic Waterfall Model, which involves the following activities:

- Software Plan: The project team will meet with the clients and determine an

idea for the problem as well as a solution towards the problem.

- Analysis and Requirements: Additional meetings with the client will be held in order to define the requirements for the project.
- Preliminary Design: Analysis gathered from the previous activity will be transferred into basic design code.
- Detailed Design: Translation from the basic design code into machine code will occur and as time passes, the program will continuously be checked to meet the requirements of the clients. This will take place in the Spring 2009 semester.
- Acceptance Test: Installation of the software product is set up. Maintaining the system will be done in the Spring 2009 semester.

1.10 System Acceptance Criteria

The final product will accomplish the following, but not be limited to:

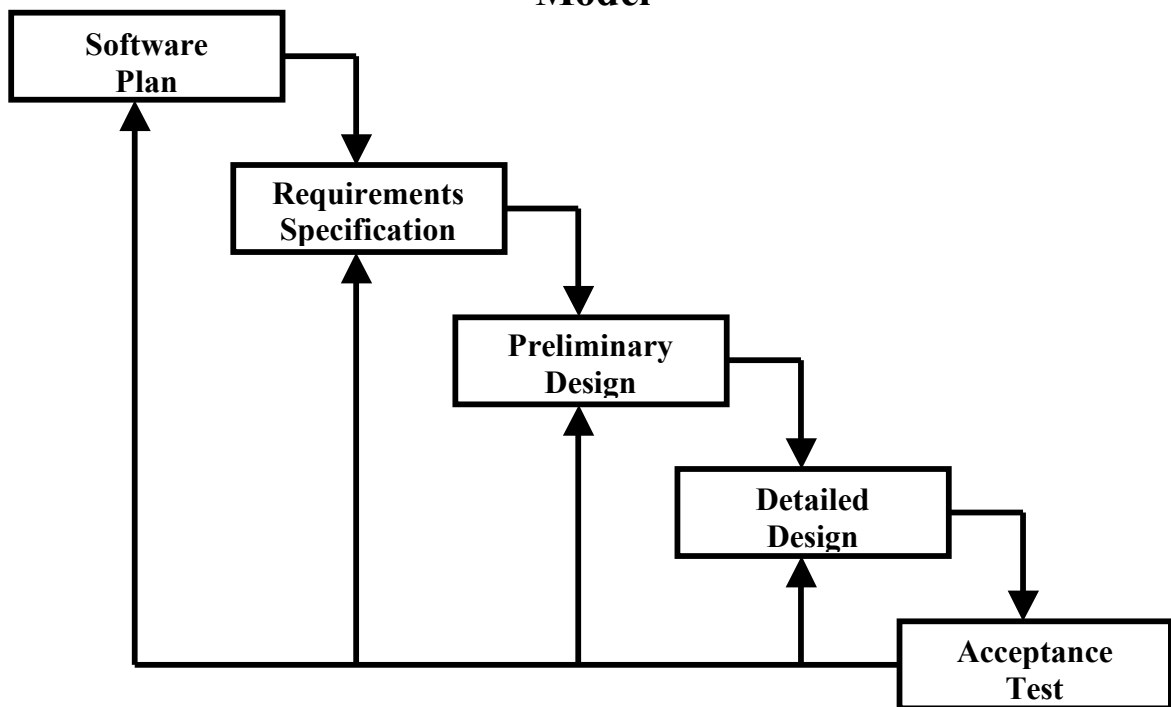
1. Users to choose between a “practice” or “test” mode.
2. Users to easily navigate through the site.
3. Users to see their progress statistically.
4. Instructors create and edit their own Java problems.
5. Instructors to override a student’s grade.

1.11 Sources of Information

The information presented in the System Definition portion of this Software Plan was obtained through meetings with our clients, Dr. Darren Lim and Mrs. Pauline White. Information was also acquired from Dr. Tim Lederman's Software Engineering lectures and various Internet resources. Additional information was collected from Software Plans created in previous years by students who were enrolled in the Software Engineering course.

Project Plan

2.1 Life Cycle Model: Linear Sequential (Classic Waterfall) Model



Software Plan

Examine and define the problem that needs to be solved and establish the goals and expectations of the final product.

Requirements Specifications

Develop a more thorough understanding of the problem, identify client requirements and specific needs that must be addressed during design phases.

Preliminary Design

Begin to define the hardware and software structures needed to satisfy the specified requirements by developing prototype representations for the interface and internal workings of the final product.

Detailed Design

Improve and expand upon the Preliminary Design to produce a sufficiently complete version of the project to begin testing.

Acceptance Test

Formal testing to determine whether the final product satisfies the acceptance criteria. In this phase, the final product is also demonstrated to show that all the functional and non-functional requirements are met.

2.2 Organizational Structure

Phoenix Tech is comprised of the following members:

<u>Name</u>	<u>E-mail</u>	<u>Phone Number</u>
Edmonds, Jessica	jll5edmo@siena.edu	(518) 527-3032
Iuliano, Marc	mp27iuli@siena.edu	(914) 589-8704
Torres, Anthony	am17torr@siena.edu	(518) 256-0072
Weisgerber, Erica	el09weis@siena.edu	(518) 847-4841

Team Resumes are accessible in Appendix 3.3

Phoenix Tech team members are organized in the following positions:

Weisgerber, Erica - Team Leader
Edmonds, Jessica - Webmistress
Torres, Anthony - System Administrator
Iuliano, Marc - Information Specialist

The team is structured as a democratic unit. All decisions are made by a majority vote, with the team leader making the final decision in the case of a tie.

Specific responsibilities for each position are outlined as follows:

Team Leader: Responsible for organizing and setting the agendas all team and client meetings, setting the goals for the team, and keeping the team productive and on task.

Webmistress: Responsible for creating and maintaining the project web page, by performing updates as necessary.

Information Specialist: Responsible for the compilation and organization of all

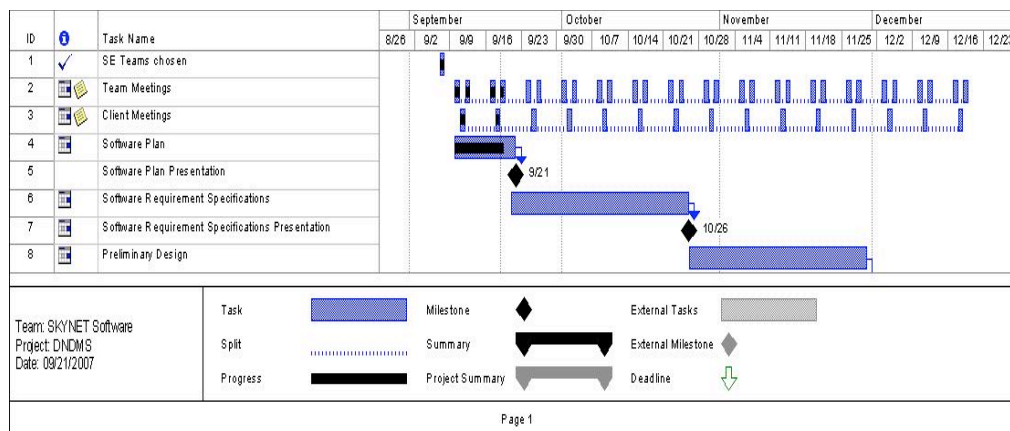
project related documentation, including, but not limited to team meeting notes, client meeting notes, and required documents.

Systems Administrator: Responsible for maintaining all hardware and software on the team workstations and administering user accounts.

2.3 Preliminary Staffing and Resource Requirements

Our project will require the use of various hardware, software, and human resources. The required hardware includes: a Dell computer running Microsoft Windows XP and an Apple iMac running Mac OS X. Until the requirements for the project have been more closely examined, it is not certain what software will be required, however, the required software may include: Adobe Dreamweaver, Adobe Fireworks, Microsoft Project, phpMyAdmin, and Oracle. Beyond these basic needs will be the guidance of the following staff members: our clients, Dr. Darren Lim and Mrs. Pauline White, both members of the Siena College Computer Science Department, as well as our Software Engineering Professor, Dr. Tim Lederman, also a member of the Siena College Computer Science Department.

2.4 Preliminary Development Schedule



The timeline (Gantt Chart) provided above is from currently outdated. Our Software Engineering facilities are in the process of being remodeled therefore the software used to produce the timeline was unavailable. An updated timeline will be provided at a later date. A larger version is shown below in Appendix 3.1

2.5 Tools and Techniques to be Used

Currently we will be working with two platforms Mac OSX and Windows XP. Phoenix Tech will have the Microsoft Office suite which includes Word, Excel, Power Point, and Project among others. In addition to Microsoft, Adobe Creative Suite 3 will be used heavily in Javanet development. Adobe's programs include Dreamweaver, Flash, Photoshop, and Fireworks.

2.6 Project Monitoring and Control Mechanisms

Our Client Meetings will take place at least weekly, this ensures that the client's expectations will be addressed, Javanet meets the criteria agreed upon between Phoenix Tech and Dr. Darren Lim and Mrs. Pauline White, and finally that the GUI provides a robust, functional, and user friendly environment. In addition the weekly team meetings will make certain that all parts of the project are being addressed and time is allocated appropriately. Should problems arise in any of these areas, the frequent meetings and rigorous testing will make sure Javanet performs as expected.

2.7 Programming Languages

To meet the needs of Dr. Darren Lim and Mrs. Pauline White, a variety of programming languages will be used in the development of Javanet. PHP, XHTML, CSS, MySQL, and JQuery are the most common, however additional programming languages may be used if requested or needed.

2.8 Testing Requirements

Throughout the creation of our project, there will be extensive testing of all features of Javanet. Members of our team as well as the clients will do the testing for this project. Clients will be notified when the project reaches milestones and their participation in testing is needed. Our clients will be encouraged to participate in the testing process to make certain that all aspects of Javanet meet the acceptance criteria and all functional and non-functional requirements.

2.9 Supporting Documents Required

The following supporting documents will be delivered to our clients by either the afternoon of the following dates:

1. Software Plan - September 17, 2008
2. Software Requirements Specifications - October 22, 2008
3. Preliminary Design – December 1, 2008

2.10 Manner of Demonstration and Delivery

Throughout the development process of Javanet this semester, we will be presenting the status of the project to our clients. The purpose of each presentation will be to update our clients of the progress being made on the project and to ensure that our clients' goals and expectations are being accurately understood. The presentations will include PowerPoint slides, handouts, speeches, and other demonstrations. The dates of the presentations are as follows:

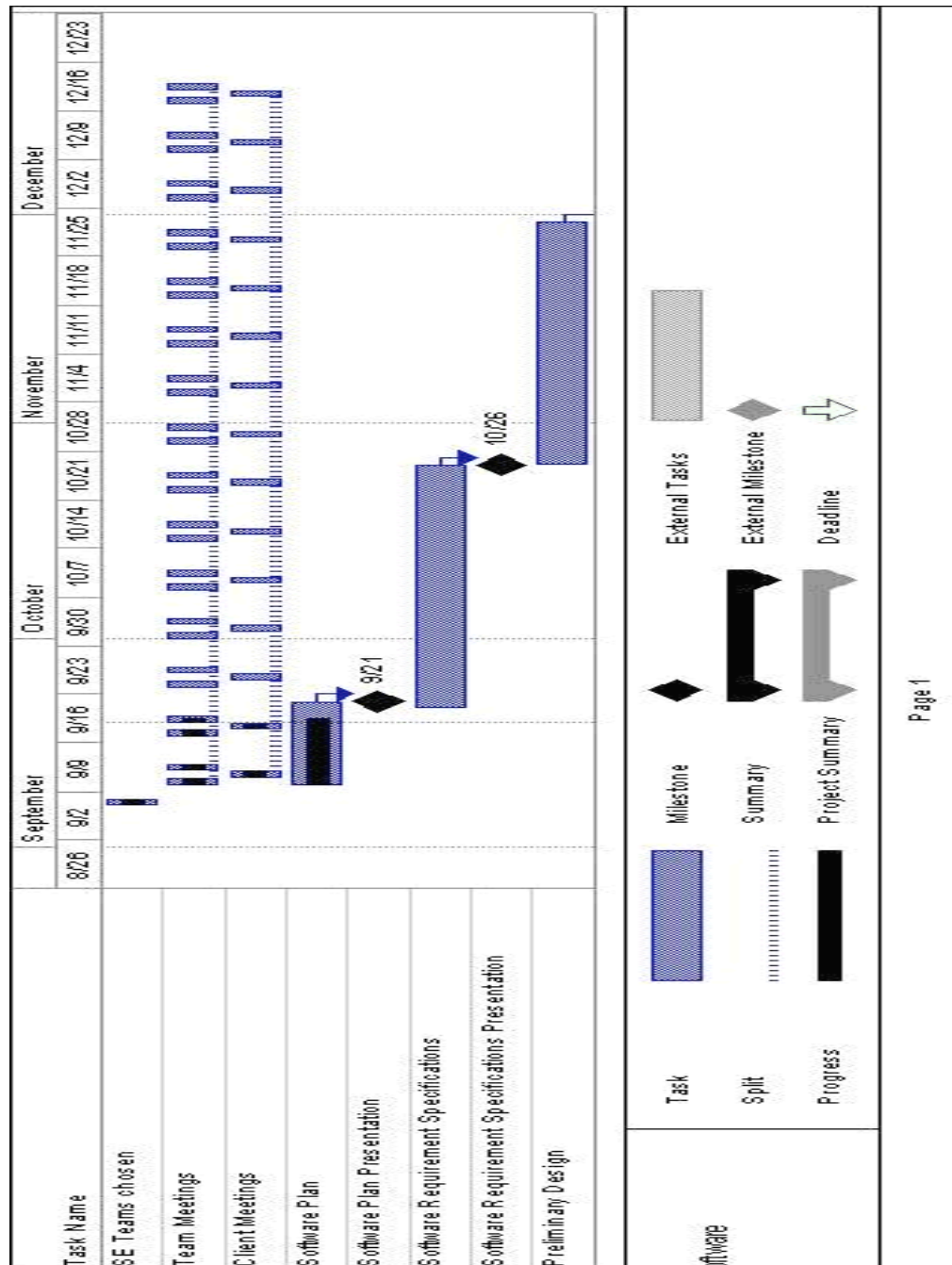
1. Software Plan – September 19, 2008
2. Software Requirements Specifications – October 24, 2008
3. Preliminary Design – December 3, 2008

2.11 Sources of Information

The information presented in the Project Plan portion of this Software Plan was obtained through meetings with our clients, Dr. Darren Lim and Mrs. Pauline White. Information was also acquired from Dr. Tim Lederman's Software Engineering lectures and various Internet resources. Additional information was collected from Software Plans created in previous years by students who were enrolled in the Software Engineering course.

Appendix

3.1 Enlarged Timeline (Gantt Chart)



3.2 Glossary of Terms

All glossary definitions provided by Wikipedia.org.

API

An Application Programming Interface (API) is a set of functions, procedures or classes that an operating system, library or service provides to support requests made by computer programs.

Classic Waterfall Model

The Waterfall Model is a sequential software development model (a process for the creation of software) in which development is seen as flowing steadily downwards (like a waterfall) through the phases of requirements analysis, design, implementation, testing (validation), integration, and maintenance.

CSS

Cascading Style Sheets (CSS) is a style sheet language used to describe the presentation of a document written in a markup language. Its most common application is to style web pages written in HTML and XHTML, but the language can be applied to any kind of XML document, including SVG and XUL.

Gantt Chart

A Gantt chart is a type of bar chart that illustrates a project schedule. Gantt charts illustrate the start and finish dates of the terminal elements and summary elements of a project.

GUI

A Graphical User Interface (GUI) is a type of user interface which allows people to interact with electronic devices like computers, hand-held devices (MP3 Players, Portable Media Players, Gaming devices), household appliances and office equipment.

Hardware

Hardware is a general term that refers to the physical artifacts of a technology. It may also mean the physical components of a computer system,

Java

Java refers to a number of computer software products and specifications from Sun Microsystems that together provide a system for developing application software and deploying it in a cross-platform environment.

Linear Sequential Model

The Linear Sequential Model is a software process model that involves a systematic progression through analysis, design, coding, testing and maintenance phases. It is also referred to as the "waterfall model".

Mac OS X v10.4 “Tiger”

Mac OS X version 10.4 “Tiger” was the fifth major release of Mac OS X, Apple’s desktop and server operating system for Macintosh computers. Tiger was released as the successor to Mac OS X v10.3 “Panther”

MySQL

MySQL is a relational database management system (RDBMS) which has more than 11 million installations. The program runs as a server providing multi-user access to a number of databases.

Operating System

An operating system (commonly abbreviated *OS* and *O/S*) is the software component of a computer system that is responsible for the management and coordination of activities and the sharing of the resources of the computer.

PHP

PHP Hypertext Preprocessor is a computer scripting language. Originally designed for producing dynamic web pages, it has evolved to include a command line interface capability and can be used in standalone graphical applications.

Software

Software is a general term used to describe a collection of computer programs, procedures and documentation that perform some tasks on a computer system.

Source Code

In computer science, source code (commonly just source or code) is any sequence of statements or declarations written in some human-readable computer programming language. Source code is written in a programming language, which is usually a simplified form of the English language to reduce ambiguity. Source code allows the programmer to communicate with the computer using a reserved number of instructions.

SVG

Scalable Vector Graphics is an XML specification and file format for describing two-dimensional vector graphics, both static and animated.

Workstation

A workstation, or *engineering workstation*, is a high-end microcomputer designed for technical or scientific applications. Workstations are intended primarily to be used by one person at a time, although they are commonly connected to a local area network and run multi-user operating systems.

Windows Vista

Windows Vista is a line of operating systems developed by Microsoft for use on personal computers, including home and business desktops, laptops, Tablet PCs, and media center PCs.

XHTML

The Extensible HyperText Markup Language, or XHTML, is a markup language that has the same depth of expression as HTML, but also conforms to XML syntax.

XML

The Extensible Markup Language is a general-purpose *specification* for creating custom markup languages. It is classified as an extensible language because it allows its users to define their own elements. Its primary purpose is to help information systems share structured data, particularly via the Internet, and it is used both to encode documents and to serialize data.

XUL

The *XML User Interface Language*, an XML user interface markup language developed by the Mozilla project, operates in Mozilla cross-platform applications

such as Firefox and Flock. The Gecko layout engine provides the only complete implementation

3.3 Team Resumés

Jessica L. Edmonds

Email: jl15edmo@siena.edu

Current Address:
Siena College SPOB 3442
515 Loudon Road
Loudonville, NY 12211

Permanent Address:
4209 Bostonian Drive
Schenectady, NY 12306

OBJECTIVE

Obtain a position that takes advantage of my experience with computer science and complements my leadership and time management skills.

EDUCATION

Siena College, Loudonville, NY
B.S. in Computer Science, May 2009
GPA: 3.5/4.0; Dean's List 2007-2008; MAAC All-Academic Team 2007-2008

CS EXPERIENCE

Web Development Intern, NYS Assembly, Albany, N.Y., Summer 2008

- Produced HTML documents from portable document format references for online posting
- Worked with Adobe Photoshop for image editing
- Followed guidelines for compatibility with screen readers

ADDITIONAL LEADERSHIP EXPERIENCE

Siena Girls' Basketball Overnight Camp Dorm Supervisor, Siena College, Loudonville, N.Y., Summer 2007 & 2008

- Directed dormitory services
- Organized and supervised rooming assignments and check-ins
- Addressed concerns and facilitated communication with parents

Siena Girls' Basketball Evening Camp Counselor, Siena College, Loudonville, N.Y., Summer 2007 & 2008

- Team coach – led a group in activities and workouts
- Station leader – taught and explained specific skills to groups

EXTRACURRICULAR ACTIVITIES

Collegiate Division I Women's Basketball, 2005 – Present

COMPUTER & PROGRAMMING SKILLS

Applications: Microsoft Word, Adobe Photoshop, Adobe Dreamweaver, Macromedia Homesite, BlueJ, Microsoft Visual Studio

Languages: HTML, CSS, XML, PHP, MySQL, Java, C++, x86 Assembly Language

COMMUNITY ACTIVITIES

Cooked and served dinner, Ronald McDonald House of Charities, Fall 2005-2008

Basketball Counselor, Burke Adams Special Needs Sports Program, Fall 2006

Waitress, Mousetrap Breast Cancer Awareness Fundraising Dinner, Winter 2006

Marc P. Iuliano
mp27iuli@siena.edu

Present Address :
Siena College, SPOB 3128
515 Loudon Road
Loudonville, NY 12211
(914) 589 – 8704

Permanent Address:
332 Cedar Drive West
Briarcliff, NY 10510
(914) 762 - 9556

Objective :

To obtain an entry-level position in Computer Science that will utilize my abilities and skills.

Education :

Siena College, Albany NY
Bachelor of Science in Computer Science, Minor in Business, May 2009

Computer Skills :

Experience with Java, Visual Basic, C++, Blue J, Assembly, Linux, Microsoft Word, Excel, PowerPoint, Internet, Windows 98/NT/2000/XP, Mac OS X

Relevant Courses :

Software Engineering, Communications and Networking, Computer Architecture and Assembly Language, Data Structures, Introduction to Computer Science, Introduction to Programming Languages.

Experience :

Inventory Processing Team / Bookseller , **Borders** , Mt. Kisco, NY, Summer 2008

- Received and processed daily inventory
- Assisted customers in finding books and multimedia
- Operated register in store and cafe

Volunteer Coordinator , **Westchester Parks** , White Plains, NY, Summer 2007

- Recruited Empire State Game volunteers for sign up
- Organized souvenir hand outs

Stock / Delivery Clerk , **Vitols Deli** , Briarcliff Manor, NY, Summer 2006

- Delivered customer orders
- Stocked weekly deliveries

Cashier , **Key Foods** , Pleasantville, NY, Summer 2004

Camp Counselor , **Briarcliff Day Camp** , Briarcliff Manor, NY, Summer 2002, 2003

Childcare , **Private Employers** , Briarcliff Manor, NY, 2000 – 2005

Activities :

- Member, **Intramural Floor Hockey** , Fall 2006 – Present
- Member, **Intramural Softball** , Fall 2006 – Present
- Member, **Intramural Football** , Fall 2006 – Present

OBJECTIVE

COMPUTER ANALYST AND NETWORK SPECIALIST

Aspiring to become a well rounded computer technician, including troubleshooting and repair, as well as setting up networks and workgroups on a business level .

PROFILE

- Familiar with Microsoft Windows XP, Microsoft Windows Vista , Microsoft Productivity Software including Word, Excel, PowerPoint, Adobe Productivity Software including Flash, Fireworks, Dreamweaver .
- Knowledge of PC setup and installation, as well as various peripherals, data entry , file updating, and hardware and software installation and replacement.
- Experienced in system -operations training , and customer service.
- Programming Languages: Java, PHP, XHTML, Ajax, CSS , MySQL, Actionscript

EMPLOYMENT

Xerox Litigation Services , Albany, NY November 2007
-Present

Network Operations Center Operator

- Monitoring overall health of multiple databases including Apache and Oracle .
- Filtering and assigning task to appropriate departments.
- Improving upon the NOC monitoring application using XHTML PHP and Javascript.

Circuit City , Albany , NY February 2007 –
October 2007

Firedog Computer Technician

- Troubleshoot various problems both over the phone and on site .
- Installed software, hardware, and other peripherals.
- Optimized overall computer performance.

Circuit City , Albany , NY November 20 06
- February 2007

Computer Sales Representative

- Trained staff and customers in computer -system setup and operations.
- Gained excellent experience in system operations and various types of hardware and software.

Staples , East Greenbush , NY 2005-2006

Business Machines Sales Representative

- Promoted the sale of printers, computers, fax machines, etc.
- Trained customers in machine set -up and operations.

INTERNSHIPS

Vicarious Visions , Troy, NY 2005-2007

Debugged gaming software, programming, spreadsheet management , and audio manipulation.

EDUCATION

Siena College , Loudonville, NY 2005-Present

Major: Computer Science

Minor: Mathematics

Courses include Calculus III, Operating Systems, Web Design, and Software Engineering .

Erica L. Weisgerber

(518) 847-4841
el09weis@siena.edu

Present Address:

Siena College ,SPOB 4398
515 Loudon Road
Loudonville, NY 12211

Permanent Address:

1256 Washout Road
Scotia, NY 12302

EDUCATION

Siena College , Loudonville, NY
B.S. in Computer Science , Minor in Multimedia , May 2009
GPA: 3. 25/4.0 ; Dean's List 2005 -2006

RELEVANT EXPERIENCE

Multimedia Intern , **Office of the State Comptroller**, Albany, NY, 6/08 -present

- Assist Multimedia design staff in the Retirement Communications bureau in developing the functionality of multimedia projects using Adobe Flash
- Assist in developing web applications using Adobe Dreamweaver
- Research and explore new skills and concepts which have not been used previously

Computer Science Department Assistant , **Siena College**, Loudonville, NY, 9/06 -5/08

- Assist ed systems administrator with installing software and other administrative tasks
- Assist ed professors with various tasks such as photo -copying

ADDITIONAL EXPERIENCE

Information Desk Assistant , **Siena College**, Loudonville, NY, 2008 -present
Computer Science Departmental Tutor , **Siena College**, Loudonville, NY, 2006 -present
Intern , **Siena College Office of Residential Life**, Loudonville, NY , 2008
Resident Assistant , **Siena College**, Loudonville, NY 2006 -present
Summer Orientation Leader , **Siena College**, Loudonville, NY, 2006 , 2007, 2008
Ryan Hall Office Assistant , **Siena College**, Loudonville, NY, 2005 -2006
Part-Time Deli Clerk , **Price Chopper**, Glenville, NY, 2005 -present

ACTIVITIES

Member , **Siena College Student Finance Committee**, 2008
Member , **ACM -W & Siena College Computer Science Club**, 2007 -present
Fellow , **Siena Leadership Institute**, 2007
Member , **Habitat for Humanity**, 2006 -2008
Member , **Ambassadors Club**, 2006 -2007
Volunteer , **Siena College Students IMPACT Contest**, 2006
Participant , **Relay for Life**, 2006

HONORS/AWARDS

Member , **Upsilon Pi Epsilon**, 5/08 -present
Franciscan Scholar , **Siena College** , 2005 -2008

RELEVANT SKILLS AND COURSEWORK

Computer Skills: HTML/XHTML, PHP, CSS, Java, Visual Basic, Adobe Dreamweaver, and Flash, Microsoft Office Word, Excel, PowerPoint, and Publisher