



**E.A.S.**  
**(Efficient And Simple)**

**Requested By:**

Ms. Mary Partridge-Brown and Ms. Roberta Sandler  
Co-Directors  
Grassroot Givers  
Albany, NY

**Prepared By:**

**Maroon Solutions**  
Kathleen Rotondo: Team Leader  
Mathew Banville: Web Master  
Kyle Flack: Database Administrator  
Marissa Gasparro: Data Analyst  
Kean Smullen: Head Developer

**September 23rd 2014**

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## **SYSTEM DEFINITION**

### **1: Problem Definition**

Our clients, Ms. Partridge-Brown and Ms. Sandler, of Grassroot Givers have been attempting to provide financially struggling individuals and families with quality products such as household supplies, clothing, cleaning supplies, and toiletries. Currently, they are in need of a system that would allow for them to better record their inventory, customer, and donor information. They request a system that would be very easy to use as many of their volunteers that would be the system users have little experience with computers.

### **2: System Justification**

It is a necessity to create a seamless way for employees and volunteers to store their important and confidential information in an easy to use method. Currently, record keeping is done via paper filing techniques with index cards to track information about customers, donors, and donations. The current system makes it difficult to obtain any meaningful data in regards to inventory and customer statistics; our system will allow for simple, fast retrieval of accurate and useful information. Also, because the system will be web-based, the records stored will be much safer in the case of unexpected events like fire or theft.

### **3: Goals for Project and System**

The primary goal of our project is to create a useful record keeping system that people with limited computer experience could use with ease. Moreover than ease of use, the software will ideally be able to accurately store and retrieve information with limited or no maintenance. It also will be important to view history of all donations, customers, and donors and supply useful warning messages for unusual data such as customers receiving an unusual amount of product.

### **4: Constraints to the System and Project**

As the system will be a web-based application, it is a constraint in that it will need to be compatible with various internet browsers. Also, because it is web-based, the system will have to use a secure method so that users can safely use the system. The system will have to be able to handle multiple users accessing it at the same time, both making changes to the inventory records. It is important that the system is very user friendly and perhaps even look visually pleasing and clear so as to better enable users to interact with it.

## 5: Functions to be Provided

- Database Containing
  - Record Donor information – Name, Address, Donated items, Dates donated
  - Record Customer information- Name, Address, # of members of household, # of children, referrals, Items purchased, Dates of purchases
  - Record inventory information- Name, Value, Size, Color, Received/purchased dates
- User friendly interfacing with database
- Ability to search/sort database by item/customer attribute
- Warning messages for customers who receive more than a variable number of items in certain categories

## 6: User Characteristics

This software will keep a record of and update the inventory of Grassroot Givers' Community Store. It will also keep a record of Grassroot Givers' customers and donors. Directors and employees will have access to the interface to make any updates to the information.

## 7: Environments

### Development

*SE Lab hardware/software specs - PC:*

- Dell
- Windows 7
- 6GB RAM
- 499.78GB disk space, 427.84GB free
- 3.20Hz Intel® Core™ i5-3470 CPU
- Adobe AIR
- Adobe Flash Player
- Google Chrome
- Mozilla Firefox
- Microsoft IE, Office OneNote, Outlook, SQL Server, Office 2010, Visual Studio
- SmartDraw
- Oracle SQL Developer, Java SE7, Netbeans IDE 8.0
- Eclipse
- BlueJ
- WinSCP
- Audacity
- IDLE Python GUI
- Notepad++
- PUTTY

*SE Lab hardware/software specs - Mac:*

- iMac
- OS X Lion 10.7.5
- 4GB RAM
- 499.25GB disk space, 450.54GB free

- 2.5GHz Intel® Core™ i5
- Adobe reader
- Mozilla Firefox
- Google Chrome
- Microsoft Excel, Word, Query, Powerpoint
- XCode

*Server:*

- Hostname: oraserv.cs.siena.edu/~perm\_maroon/

### **Operating**

Maroon Solutions will be using a web based application located on Siena's database server, oraserv. The web based application will consist of an Oracle database with an Apache Web server.

### **Maintenance**

Maintenance will be hosted on client equipment, which is not specified at this time.

**8: Solution Strategy**

Our team will follow the Spiral Method to fulfill all requirements requested and to complete the project in a timely manner.

- Define and Obtain Requirements
- Development of Design
- Implementation/Coding of Project
- Testing the Solution
- Installation and Maintenance of System
- Repeat until the project is complete

**9: Priorities of System Features**

The main goal for this system is the organization and record of Grassroot Givers' inventory. Other priorities include the history and current information of customers and donors. Other features consist of searching through the inventory database for particular items, options to apply values to items within the inventory, recording donated items and receipts for donors' tax purposes

**10: System Acceptance Criteria**

Directors/employees will be able to:

- Add/remove/edit items to the inventory database
- Add/remove/edit customer profiles
- Add/remove/edit donor profiles

## PROJECT PLAN

### 11: Project Management & Development Model



Figure 11: Spiral Model of project development.

#### Analysis

##### Software Plan

Maroon Solutions will identify and define the need we will fill with Grassroot Givers.

##### Requirements & Specifications

Problem refinement, in this stage Maroon Solutions will gather information such as hardware limitations and how they envision our product to work.

#### Evaluation

##### Preliminary Design

Using the Requirements and Specifications found in the previous stage, Maroon Solutions will begin laying out diagrams to get a better idea of the system as a whole. Laying out modular designs to solidify the system from idea to goal.

##### Detailed Design

In this stage the preliminary design is expanded on looking at each module and breaking those down into smaller systems or objects to prepare for the Development phase. This is also where the physical look and feel is laid out to meet specification.

**Development****Development & Testing**

Taking the detailed design, Maroon Solutions will begin programming each piece of the system until it performs the desired task.

**Planning****Acceptance Test**

The final phase, the product is taken to Grassroot Givers for continued use.

**12: Organizational Structure****Kathleen Rotondo: Team Leader**

The team leader is responsible for organizing both client and team meetings. The team leader is responsible in making sure the team members are handing in any deliverables on-time and makes sure the deliverables are of good quality. The team leader is also responsible for keeping track of attendance at all class periods and all meetings.

**Mathew Banville: Web Master**

The web master is responsible for the creation and maintenance of the team website. Duties include but are not limited to, updating relevant information, uploading important documents, and keeping the timeline up to date.

**Marissa Gasparro: Data Analyst**

The data analyst is responsible for collecting data, compiles information, and provides information gathered to the team and client. The data analyst also has the ability to study data and will provide the best solution through many resources.

**Kyle Flack: Database Administrator**

The Database Administrator is responsible for the design and maintenance of the database created for Grassroot Givers. Entity-relationship diagrams and relationship schemas of this database will also be made and documented by the Database Administrator.

**Kean Smullen: Head Developer**

The role of the head developer is to design and implement a plan that will create the system in an efficient and timely manner. The job requires overseeing the development process of the system and providing ways to make sure the development process is running efficiently.

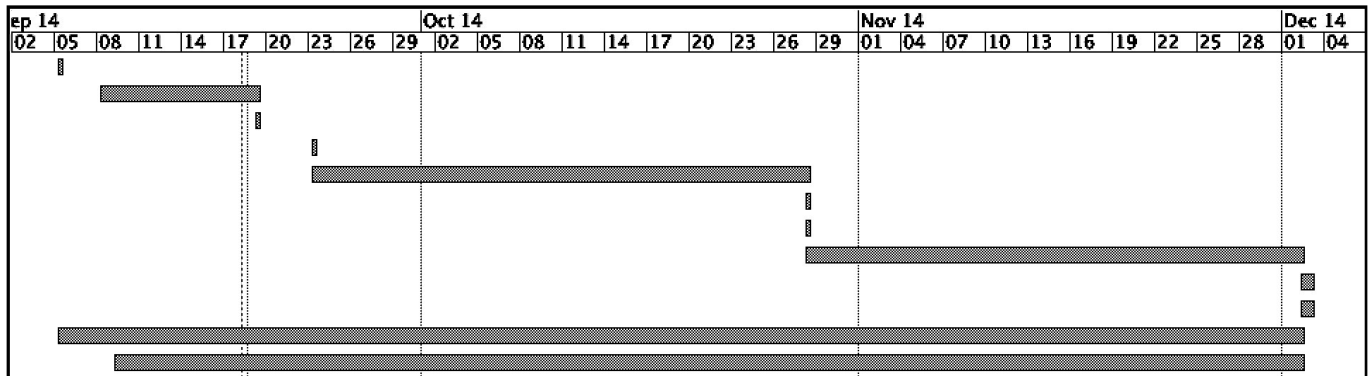
**13: Preliminary Staffing**

Maroon Solutions will work together, with the client, and Dr. Fryling and Dr. Lim. We will use the materials that are available in the Software Engineering Lab (Roger Bacon 348). Maroon Solutions will be using the information of which was learned from previous classes and experiences.



**14: Preliminary Development Schedule**

Task	Duration	Start	Finish
Establish Team	1 day	9/5/14	9/5/14
Software Plan	10 days	9/6/14	9/19/14
Software Plan Due	1 day	9/19/14	9/19/01
Software Plan Presentation	1 day	9/23/14	9/23/14
Requirement Specifications	26 days	9/23/14	10/28/14
Required Document Due Date	1 day	10/28/14	10/28/14
Requirement Presentation	1 day	10/28/14	10/28/14
Preliminary Design	26 days	10/28/14	12/2/14
Preliminary Design Due Date	1 day	12/2/14	12/3/14
Preliminary Design Presentation	1 day	12/2/14	12/3/14
Team Meetings	63 days	9/5/14	12/2/14
Client Meetings	61 days	9/9/14	12/2/14



**15: Project Monitoring and Control Mechanisms**

Maroon Solutions will have team meetings at least twice a week to ensure the design and system are being developed to the client’s specifications. Maroon Solutions communicates through email with the team and the client to keep all personnel involved informed on meetings and project times. Regular meetings will be held with the client to notify the progression of the project.

**16: Tools and Techniques to be Used**

To create E.A.S., Maroon Solutions will use a culmination of previous experience and knowledge. Relevant courses taken include Object-Oriented Design and Programming, Analysis of Algorithms, Data Structures, Web Application Development, Database Management, Communication and Networks, and Robotics. Members of Maroon Solutions will also use the experience gained from internships through successful companies. Specific applications that will be used are: Google Chrome, Mozilla Firefox, Safari, Internet Explorer, Notepad++, SQL Developer, and Eclipse.

**17: Programming Languages**

Maroon Solutions will be using the following programming languages in order to develop Efficient And Simple: HTML, CSS, PHP, SQL, and Java. More languages may be considered as the project enters the preliminary design phase.

**18: Testing Requirements**

Maroon Solutions will be thoroughly testing all progress made during development in order to ensure that errors are at a minimum. As development continues, detailed test cases will be made and the results of the test cases will be documented and discussed with the client, Ms. Mary Partridge-Brown and Ms. Roberta Sandler. The acceptance test will be the final test conducted by Maroon Solutions and ensure that the application fully meets the client's needs and requirements.

**19: Supporting Documents**

Five documents will be written as the project develops. The documents will be made available to the client as soon as they are completed in order to provide to the client with an idea of the progress being made on the project. These documents are as follows:

- Software Plan
- Requirements Specification
- Preliminary Design
- Detailed Design
- Acceptance Test

**20: Time of Delivery and Presentation**

Throughout the fall semester the supporting documents will be delivered and presented on the following dates:

<b>Event</b>	<b>Date of Delivery</b>	<b>Date of Presentation</b>
Software Plan	Friday, September 19th 2014	Friday, September 23rd 2014
Requirements Specifications	Tuesday, October 28th 2014	Tuesday, October 28th 2014
Preliminary Design	Tuesday, December 2nd 2014	Tuesday, December 2nd 2014

**21: Sources of Information**

The primary source of information necessary for Efficient And Simple will come from the client, Ms. Mary Partridge-Brown and Ms. Roberta Sandler. The supervisors, Dr. Lim and Dr. Fryling, will provide extra information and help in class, while the supervisors, Dr. Lim and Dr. Fryling, will give us instructions through labs. In preparing this documentation, the format is similar to that of Quantum Technologies' Software Plan for P.R.I.S.M. (Project Recording Information System Management).

**APPENDICES**

**Appendix A: Team Resumes**

*Kathleen Rotondo*.....13  
*Mathew Banville*.....14  
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**Kathleen M. Rotondo**

2 Sean Michael Court  
 Farmingdale, NY 11735  
 P: (516) 983-4804 E: [k20roto@siena.edu](mailto:k20roto@siena.edu)

**EDUCATION**

**Siena College**, Loudonville NY  
 Bachelors in Science in Computer Science  
 Bachelors in Arts in Creative Arts  
 Projected Graduation: May 2015  
 GPA: 3.18

**RELEVANT COURSE WORK**

Introduction to Computer Science	Introduction to Programming
Assembly Languages and Computer Architecture	Algorithms Analysis
Discrete Mathematics I	Discrete Mathematics II
Data Structures	Object Oriented Programming
Cryptography	Robotics
Database Management	Software Engineering I

**SKILLS**

Proficient in:

- Java, SQL, Python
- Microsoft Office, with both Windows and Apple products

Familiar with:

- MIPS, XML, ROS
- Android development

**EXPERIENCE**

**Office Assistant**, Creative Arts Department, Siena College, Loudonville, NY Sept. 2011 - current

- Create posters and programs for the past twelve choral concerts
- Maintain rosters and collecting dues
- Design and coordinate the distribution of uniform shirts for the choirs
- Lead vocal warm ups for the chorus and chamber choir

**Vice President**, Stage III, Siena College, Loudonville, NY April 2014 - current

- Directed the Siena College Student Life Plays—a series of short skits and song parodies to help incoming freshman and transfer students to understand life at Siena
- Run club and executive board meetings, developing a roster for the club, designing club shirts, and organizing all main events, such as the end of the year banquet and the Christmas banquet.

**Research Assistant**, Siena College, Loudonville, NY June 2013 – August 2013

- Created an application for Android phones designed to promote logic and inductive thinking for children
- Performed extensive research on what would interest younger children in computer science and programming then turned the findings into a fun and easy to understand game

**Mathew A. Banville**

96 Oak Street Dunstable, MA 01827  
 ma21banv@siena.edu | 1-978-496-6010

**Education**

Siena College, Loudonville, NY

Bachelor of Science: Computer Science ; minors: Math, Buisness

May 2015

**Technical skills**

Programming Languages : JAVA, C, C++ and Python

Knowledge of HTML, PHP, MySQL, Windows, OO concepts, MIPS Assembly Language, Microsoft Office tools

**Employment**

Resident Assistant for Residential Life at Siena College, Loudonville, NY  
 Present

August 2013 -

- Foster a healthy living environment for newly enrolled freshman, stimulate personal growth, and encourage personal responsibility. As well as Conflict resolution and enforce college policies.

Research Assistant for Computer Science Department at Siena College, Loudonville, NY Summer 2012

- Collaborated with Dr. Small and Dr. Booker, professors of Computer Science and economics respectively at Siena College, investigating the public comments on hydrofracking and determining their relevance to water quality.
- Developed an annotator tool and a mini search engine that would retrieve the key words from annotated sets and then extract relevant comments.
- Created and presented research findings to students and professors at annual Academic Celebration;

**Leadership**

- Eagle Project: Worked with my local Conservation and Pathways government Committee to create GPS maps of nature trails in Dunstable. Coordinated a team to map out, clear and mark trails, design brochures with map and background information, and built map distribution boxes  
2009-2011
- Captain FIRST Robotics Team 1277 : Collaborated and lead a team of 15 people to construct a robot for a regional competition at Groton Dunstable Regional School District  
2010-2011
- Captain Varsity Tennis GDRSD  
2010-2011

**Community Service**

- Volunteered at Hope 7, assisted with elementary students with projects. Albany NY  
2011-2012
- Coach U-6 Soccer in Dunstable  
2008-2011
- Relay For Life in Dunstable and at Siena college  
2008-present
- building/ installing a handicapped ramp, clearing/ leveling land for parking lot at the Dunstable Rural Land Trust, creating a PowerPoint presentation on facilitating Blood Drives, cleaning brush around town library, building bridges for a bike trail, locating and marking Dunstable town borders, and constructing Lego Tables for the Jimmy Fund  
2007-2011
- Scout community service: church clean-up, cleared a nature trail, removed invasive pepper plants in the Florida Keys, caroling at convalescent home, wreath sale, deliver town reports, deliver Grange fliers, library clean-up, chopped firewood, Summer fest clean-up, Mother's Day Pancake Breakfast  
2007-2011

# Kyle Flack

35 Hillside Avenue

Caldwell, New Jersey, 07006

(973)-800-7795

kj09flac@siena.edu

## Education

Siena College, Loudonville, NY

B.S. Computer Science, Anticipated graduation May 2015

Siena College Presidential Scholarship

## Summary of Qualifications

- Comprehensive formal education in the Java programming language
- Good understanding of object oriented programming paradigm
- Experience working in teams to complete programming projects

## Computer Skills and Languages

**Extensive knowledge:** Java

**Intermediate knowledge:** Python

**Working knowledge:** C++/C#, HTML, Visual Basic

## Relevant Coursework

Data Structures; Object Oriented Design and Programming;  
Analysis of Algorithms; Computer Graphics; Database Management;

Android App Development; Software Engineering

## Relevant Experience

*Programmer, Team Class Project Siena College Object Oriented Des & Prog, Loudonville, NY; Spring 2012*

- Designed a GUI to play the board game Ticket to Ride
- Collaborated with teammates in the development process to create

UML diagrams, test designs, and deliver final result in a timely manner

## Work / Volunteer Experience

*Telephone Interviewer, Siena College Research Institute, Loudonville, NY; Fall 2013 - present*

- Telephoned general public to conduct political opinion polls
- Handled confidential information regarding respondents' answers

using Voxco Online Survey Software

*Tennis Instructor, West Caldwell Recreation Department, West Caldwell, NJ; Summers 2010-2014*

- Planned and taught group lessons for children aged 6 - 16 in beginner and intermediate tennis
- Managed other instructors during large classes
- Handled student registration, collected payment information, and cash transactions



# Marissa Gasparro

mr09gasp@siena.edu | (518) 268-3951  
8 Foxford Rd., Troy NY 12180

## Education

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**Siena College**, Loudonville, NY May 2015  
B.S. in Computer Science

**Hudson Valley Community College**, Troy, NY August 2013  
Associates in Computer Science, Honors GPA: 3.60

## Technical Skills

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**Familiar with:** Java, HTML, CSS, PHP, JavaScript, JQuery, AJAX, C++, Linux, Bootstrap, MySQL

## Significant Class Projects

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**Ticket To Ride**, Object-Oriented Design and Programming Spring 2014  
Worked on a team of five as Programmer/Lead QA  
Recreated a board game as an Applet/GUI  
Created proper JavaDocs and UML documentation

**NBA Database Interface**, Web Application Development Spring 2014  
Worked on a team of two as Lead Developer  
Created a web application using AJAX, JQuery, MySQL, and PHP that interfaced with a  
database of NBA players

## Relevant Coursework

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Web Application Development, Object-Oriented Design and Programming, Assembly Language and  
Computer Architecture, Discrete Structures I, Data Structures, C++, Linux

## Work Experience

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**Old Navy (Gap Inc.)**, Albany, NY October 2012 – Present  
Sales Associate  
Leader of assigned department  
Responsible for store's cash  
Assist customers with transactions

**Hoffman's Playland**, Latham, NY June 2010 – August 2013  
Ride Operator/Customer Service  
Supervised and ensured safety of children

## Activities and Awards

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Volunteer, Siena College High School Programming Contest March 2014  
Assisted High School students in contest participation  
Siena College-Concordia University Conference on Globalization March 2014

Fair Trade As A Sustainable Practice Presentation

Equestrian Club

Phi Theta Kappa

Capital Region Sponsor-A-Scholar

Fall 2013 – Present

Spring 2013 – Present

Fall 2008 – Present

## Kean Smullen

47 Hyspot Rd.  
Greenfield Center, New York, 12833  
(518)-817-5041  
[kean2057@gmail.com](mailto:kean2057@gmail.com)

### EDUCATION

Siena College, Loudonville, New York  
B.S., Computer Science and Math, May 2015  
3.71 Computer Science, 3.46 Mathematics

### COMPUTER/LANGUAGE SKILLS

#### Languages

- Java
- HTML
- Objective-C
- Python
- XML
- CNC milling

#### Software/Programs

- SQL Server management studio
- Pyxis - Supply management tool
- Digimax MMIS
- SQL Queries
- ROS (Robot Operating System)
- SmartStream
- Actionscript 2 and 3
- Microsoft Access
- Eclipse - Java IDE
- Ubuntu/Linux command line
- PTS
- BMC - System Helpdesk Tool
- Autodesk Inventor
- SART - System Account Request Tool
- Microsoft Office 2010

### RELATED EXPERIENCE

Business and Financial Systems IT Intern, **Albany Medical Center**, Albany, New York, 06/2014-09/2014

- User Account Management – Set up new user accounts for various systems.
- System Administration – Assisted with systems updates and upgrades.
- Technical Writing – Developed System Support Documentation for systems administration, help desk and end users utilizing AMC's standard documentation templates.
- Second Level Support – Provided systems support for applications. Worked with end users to resolve issues, answer questions and provide general support.
- Developed catalog of software, manuals, and files to assist with office relocation.
- Cross Database Analysis – Analyzed two asset databases for separate site locations to compare and combine into a single database.
- Trained in HIPAA requirements.

Programmer, **Doctored Apps**, Albany, New York, 05/2013-12/2014

- Programmed and tested apps on both Android and IOS devices in Objective-C and Java.
- Provided assistance to head programmer with daily workload.
- Worked as part of think tank to collaborate on ideas to best achieve desired application results.
- Program and test apps on both Android and IOS devices
- Worked on development team responsible for the apps Mapplt and Dumbstruck.
- Communicated with the graphic design team to program and test the user interface.

Circulation Desk Organizer, **Siena's Library**, Loudonville, New York, 02/13-Current

- Monitor loaned laptops - made sure user credentials were not saved by the computer.
- Organize books using the Library of Congress Classification system assuring that they were in the proper location for easy access for students and faculty.
- Database Administration - Keeping the library's database up to date by ensuring that older books not correctly in the database were updated and entered correctly. Using iii's Millennium as the ILS.

Desk Assistant, **Siena's Liberal Art's Department**, Loudonville, New York, 09/2011-12/2012

- Website Design - Built a simple web page for a professor in HTML.
- Administered the meeting schedule.
- Coordinated through Email student assignments and departmental communications.

- Distributed and communicated department events by posting fliers and through Email.

**ACTIVITIES/COMMUNITY SERVICE**

Habitat for Humanity, Loudonville, New York, May 2011

Ronald McDonald House, Albany, New York, September 2010

## Appendix B

### Glossary of Terms

**Adobe Dreamweaver:** Tool used for web application development

**Adobe Photoshop:** Graphic editing application

**Apache HTTP Server:** Web server application

**Apple Safari:** Web browser designed by Apple

**Classic Waterfall Model:** Software development process where each phase flows down into the next. This process makes it difficult to go back up the process

**CSS:** Cascading Style Sheets, language used for stylizing web pages

**Database:** Organizes data, typically through a computer, so that the data is easily accessible

**E.A.S.:** Efficient And Simple: Team name

**Eclipse:** Programming environment developed by the Eclipse Foundation

**Gantt Chart:** Bar chart typically used to project scheduling

**Google Chrome:** Web browser designed by Google

**HTML:** Hypertext Markup Language, main language for creating web pages

**Internet Explorer:** Web browser designed by Microsoft

**Java:** Object-oriented programming language developed by and maintained by the Oracle Corporation

**JavaScript:** Computer programming language used primarily in web browsers for based client-side scripts

**Mozilla Firefox:** Web browser designed by Mozilla Foundation and the Mozilla Corporation

**Notepad++:** Text editor specializing in syntactic highlighting of various programming languages

**PHP:** PHP: Hypertext Preprocessor, a programming language used for developing client-side scripts for web browsers

**P.R.I.S.M.:** Project Recording Information System Management, a software engineering project from last year. Software used to improve team work and collaboration.

**SQL:** Structured Query Language, language used to develop databases SQL Developer: Program used to create and modify database

**User Interface:** Space where a user can interact with a computer through inputs and outputs