E.A.S.
(Efficient And Simple)

Requirement Specifications

Requested By:

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Grassroot Givers
Albany, NY

Prepared By:

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Kean Smullen: Head Developer

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INTRODUCTION

1: Purpose and Origin for the Need for This System

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: Development and Production Elements

Development Enviornment

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/
- CentOS 5.2 (final)
- Kernel: 2.6.18-92.el5
- Intel Xeon 2.66 GHz CPU
- 8 GB of Memory
- Java SE Runtime Enviornment (build 1.6.0 10-rc-b28)
- GCC Version 4.1.2 20071124 (Red Hat 4.1.2-42)
- Python 2.4.3

Operating Environment

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

Maintenance

A bulk of the maintenance will be done in the security of the Software Engineering lab with the appropriate applications. These applications include, but are not limited to programs such as Adobe Photoshop, Dreamweaver, and Notepad++ as well as internet browsers such as Google Chrome, Internet Explorer, Safari, and Mozilla Firefox.

3: User Case Narratives

Employee

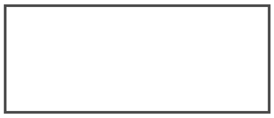
A user will go to the systems site and log on as an employee. This employee will be taking donations from a donor. If the donor is a new donor the employee can create a new donor profile. The employee will add each item into the donated inventory with the specified donor id and print a list of the items as a receipt for the donor. The employee then adds processed items to the stores inventory. The employee then can sell items to a customer. The employee can create a new customer profile and add items that were purchased by a customer to a customer's profile. The employee can search through a customers purchase history. The employee can also create, add, edit, or delete donor and customer profiles.

Administrator

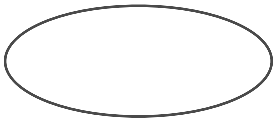
A user will go to the systems site and log on as an administrator. The administrator has all of the abilities of an employee. Additionally, the administrator can create, add, delete or edit other administrator or employee accounts. The administrator can edit any inventory item values, including the appraised value of any bag not yet processed into the store inventory.

4: UML Use Case Diagram

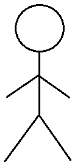
UML Use Case Legend



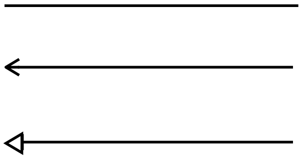
System Boundary: This is where all the interaction occurs. Represents what is within the system and outside of it. Uses go on the inside and actors go on the outside.



Scenarios: The actions that occur within a system and how the user interacts with the system.

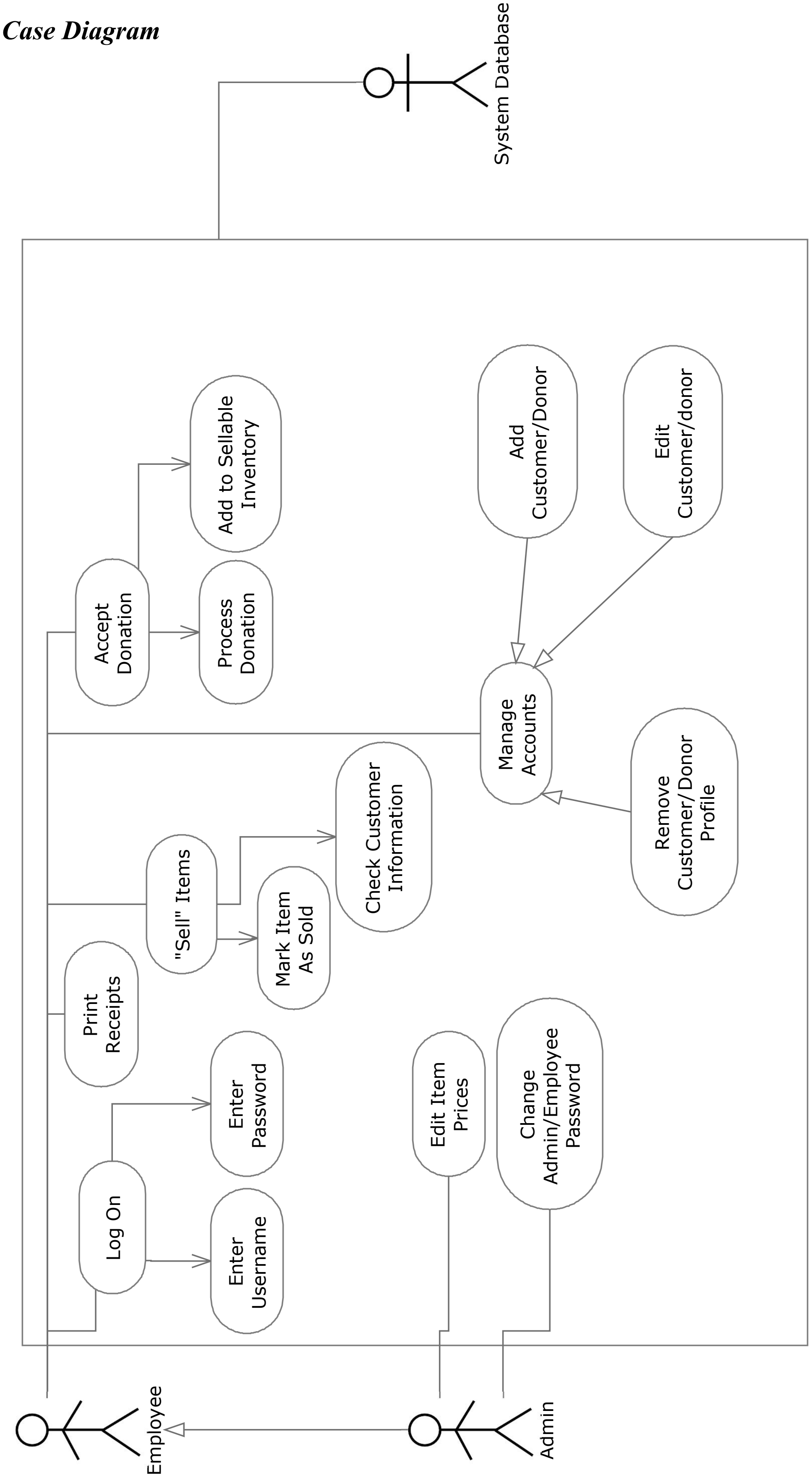


Actor: Actors interact with the system through uses. Actors can be human or non-human. Human actors go on the left side of the system boundary. Non-human actors go on the right side. Actor name gets displayed below the actor.



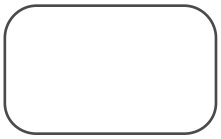
Participation Line: Shows what scenarios an actor can interact with.
Inclusion Arrow: An arrow that points from a scenario to another scenario to show that something must be included for the scenario.
Inheritance Arrow: An arrow that points from one use to another. The use being pointed at is the parent and the other is the sub.

UML Use Case Diagram

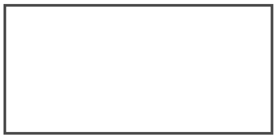


5: Data Flow Diagram

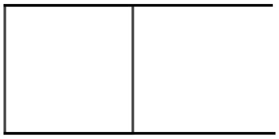
Data Flow Diagrams represent the movement of data between processes in the system as well as the movement of data between processes and external entities outside the system. The diagrams are a tool for analyzing the structure of the system and the ways in which data will be stored and retrieved by different processes. These diagrams model data flows at different levels of detail in the system. The following symbols will be used within the Data Flow Diagram:



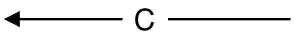
Process: Transforms or manipulates data.



External Entity: Contributes data or information to the system or which receive data/information from it.

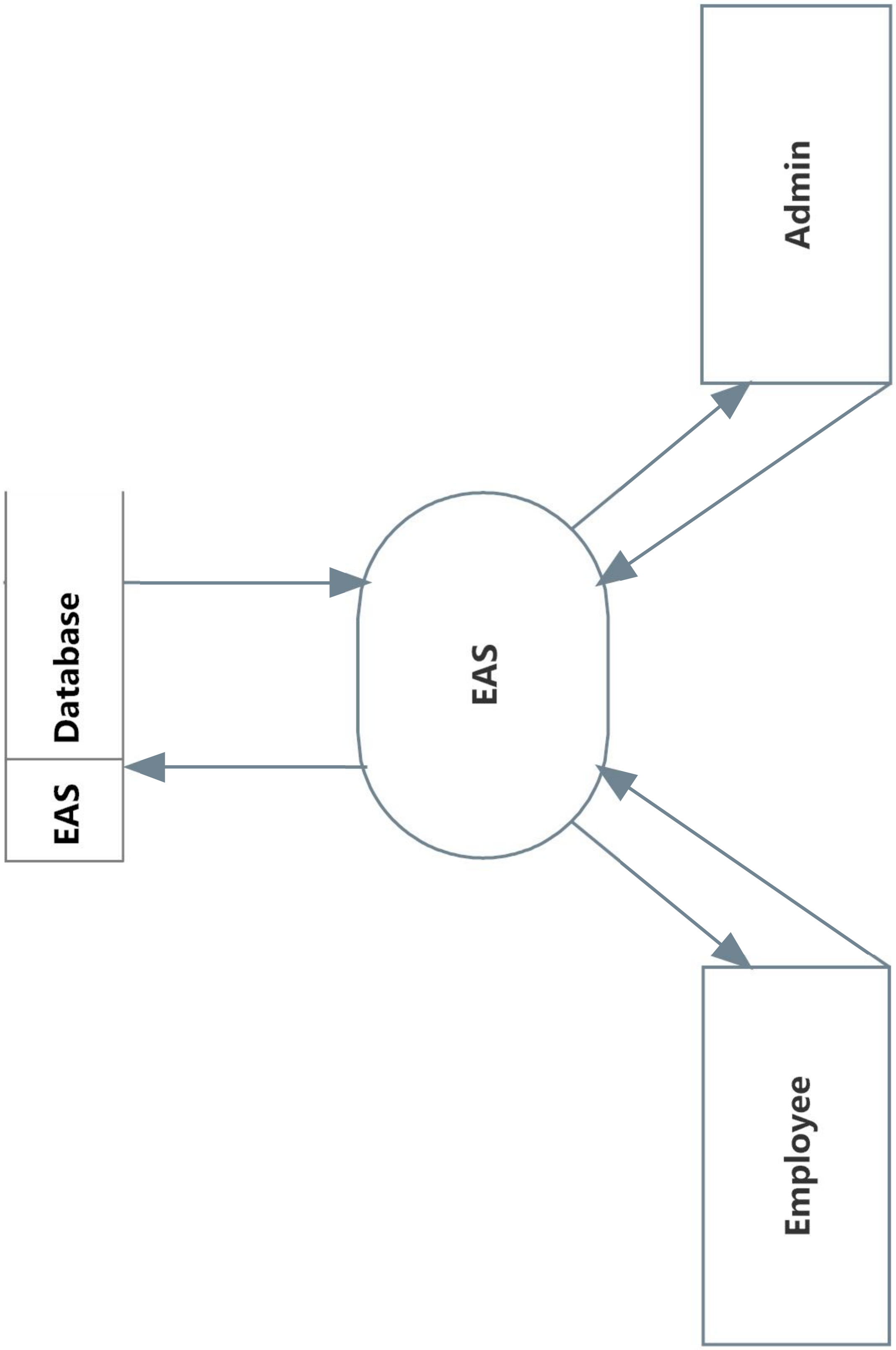


Data Store: Location where data is held temporarily or permanently.

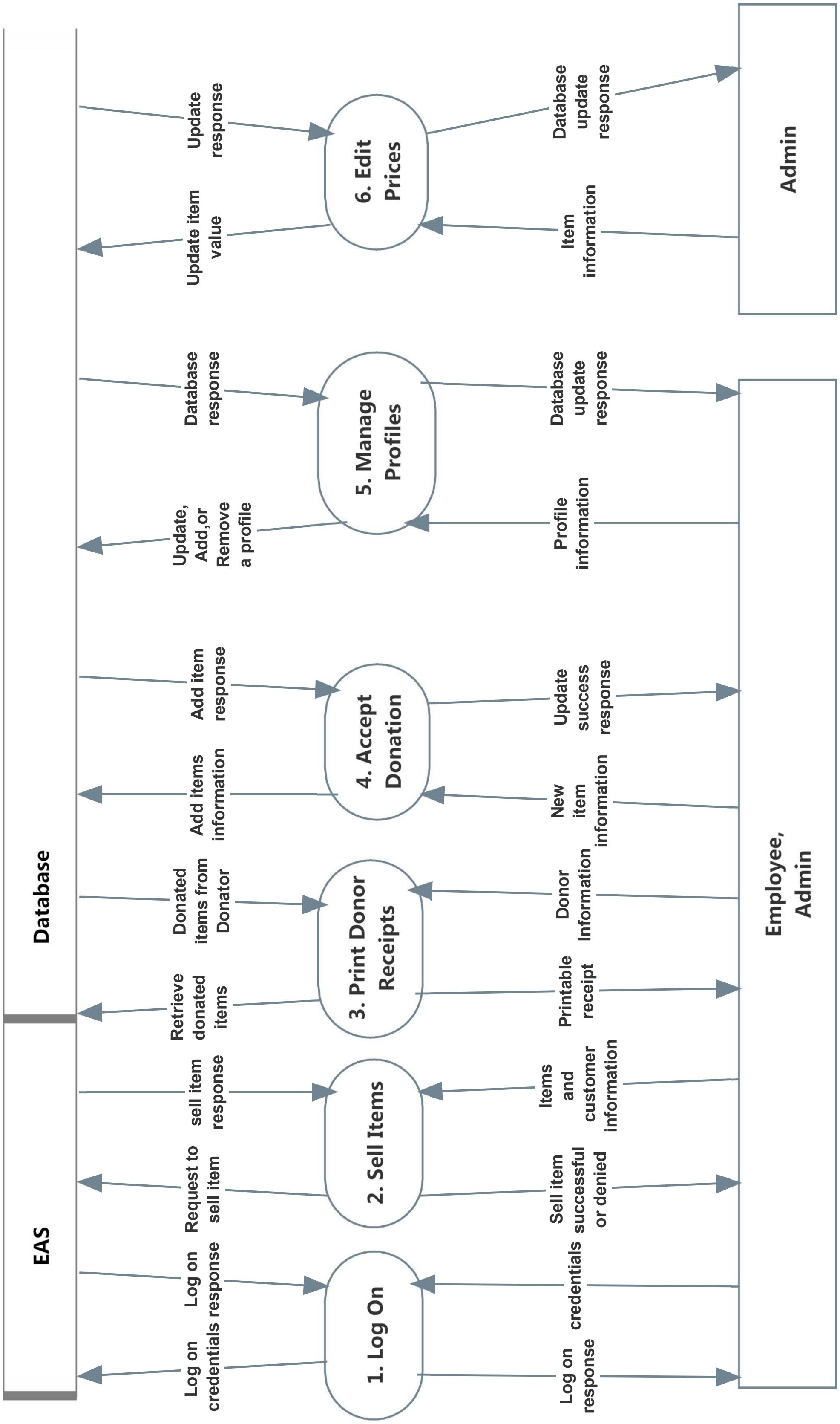


Data Flow: Data/information flowing to or from a process where C is the data/information.

Context Diagram

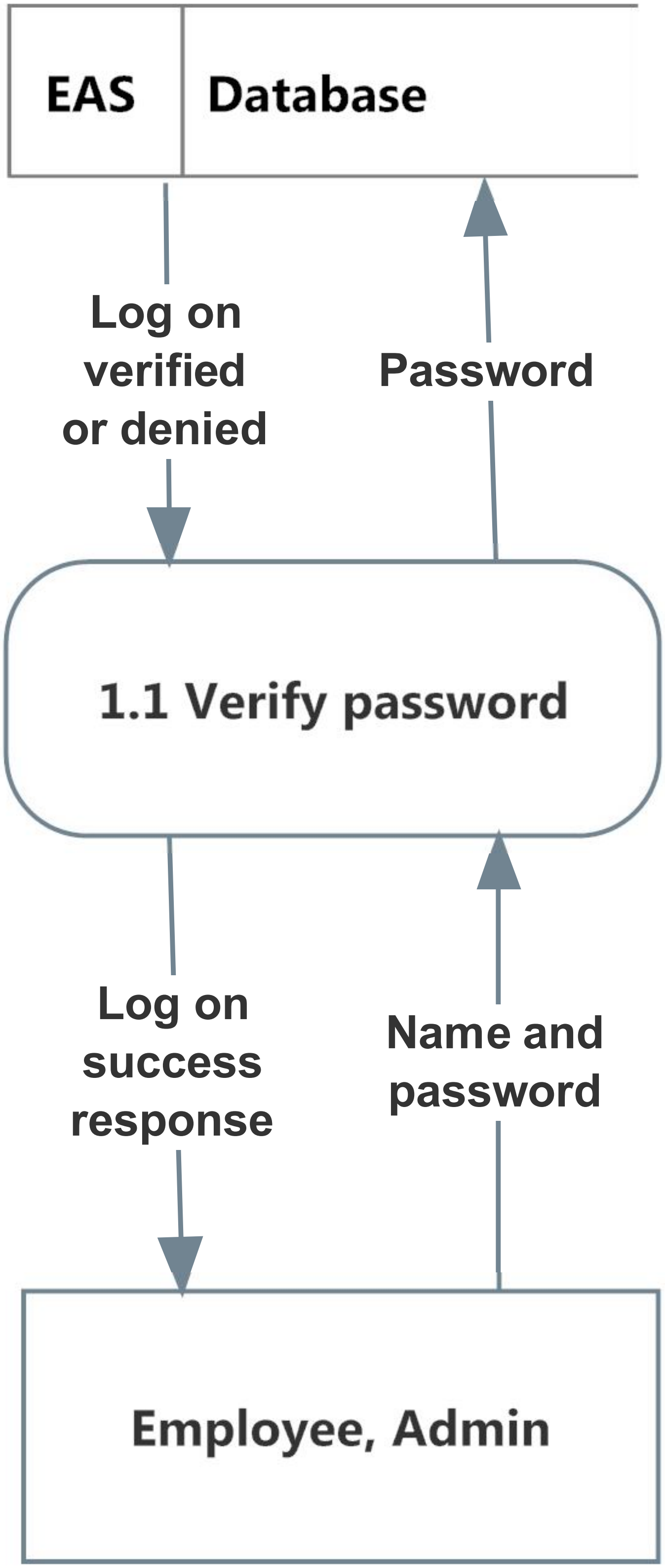


Level 0 Diagram

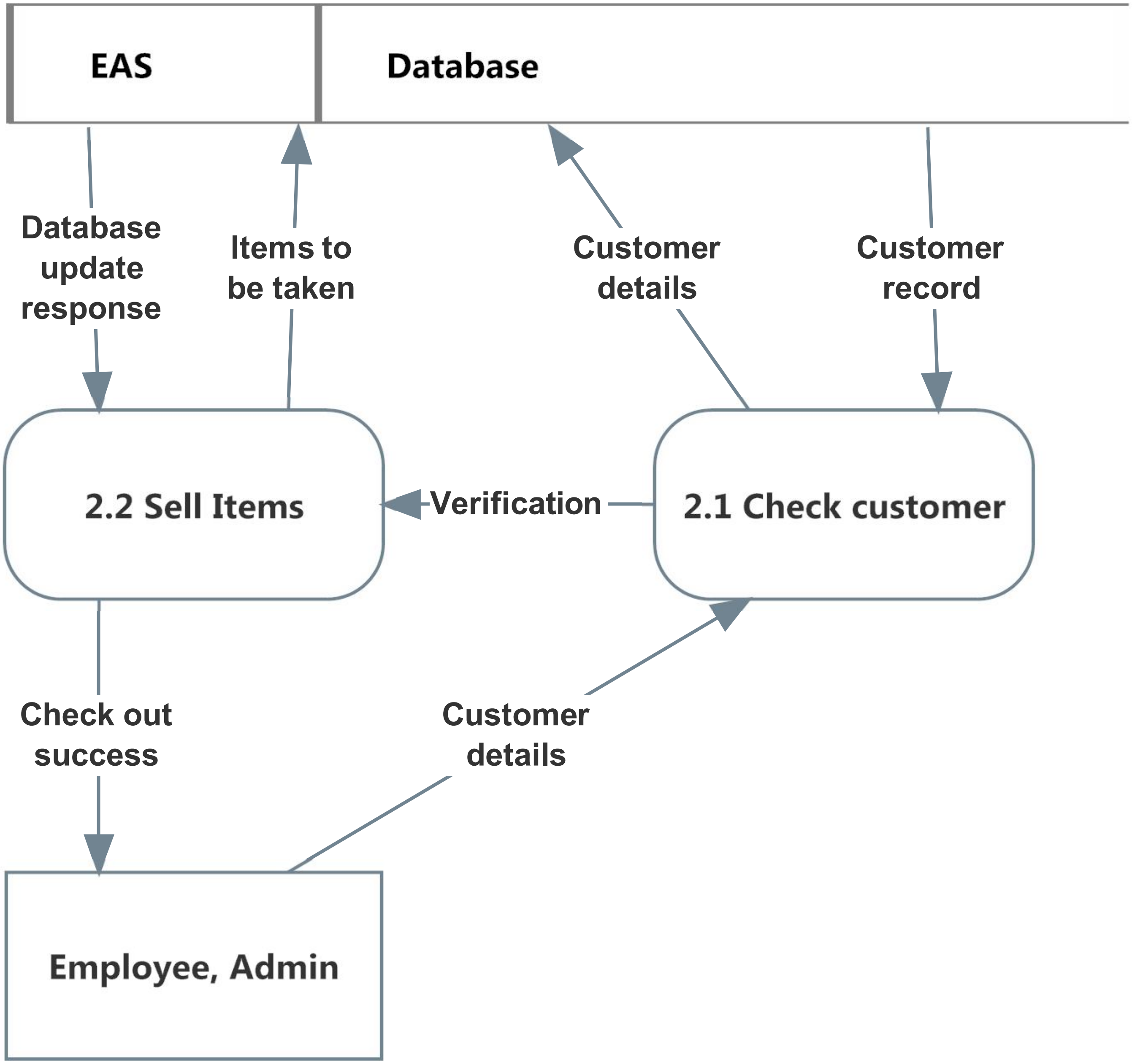


Level 1 Diagrams

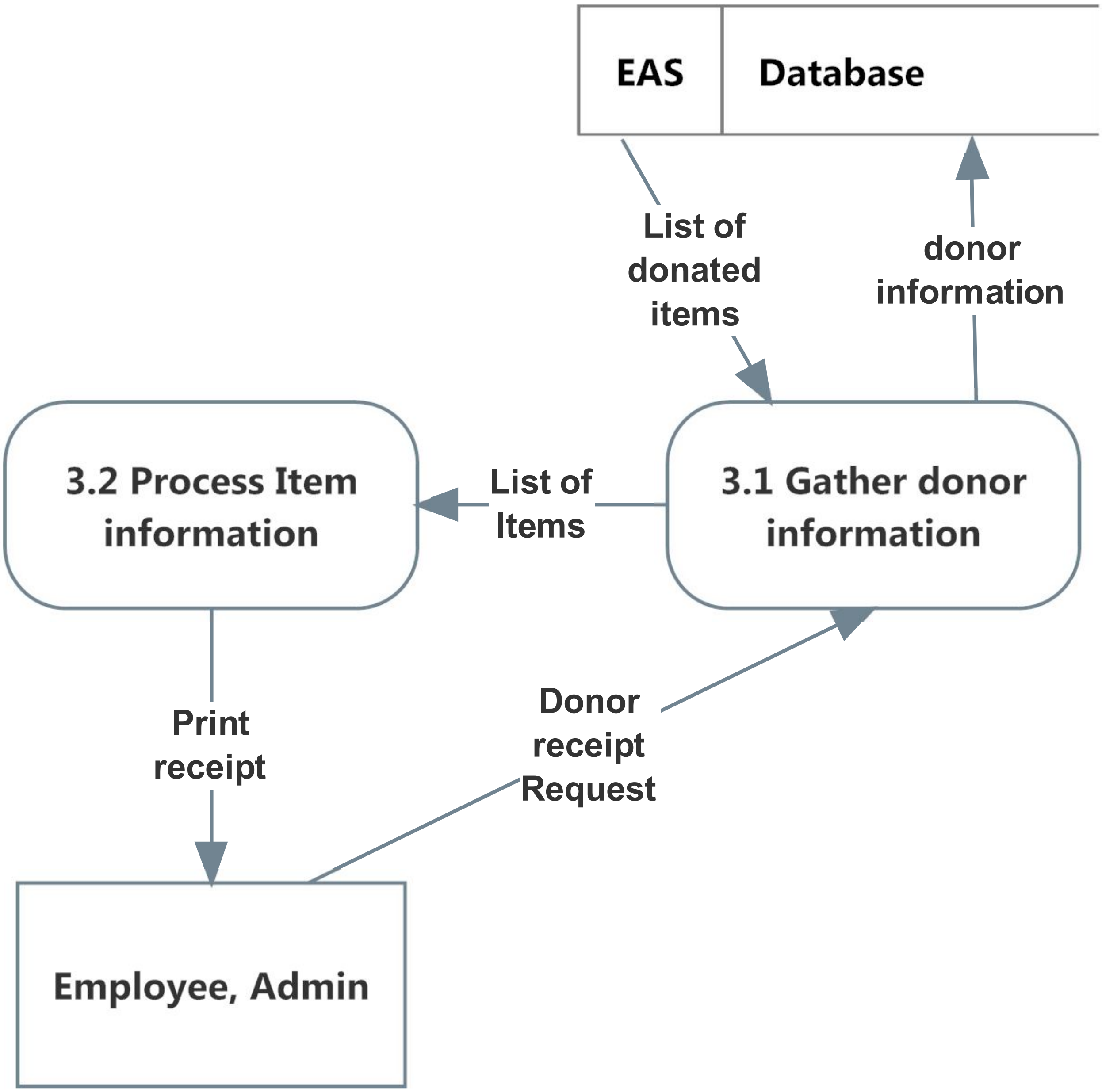
Log On



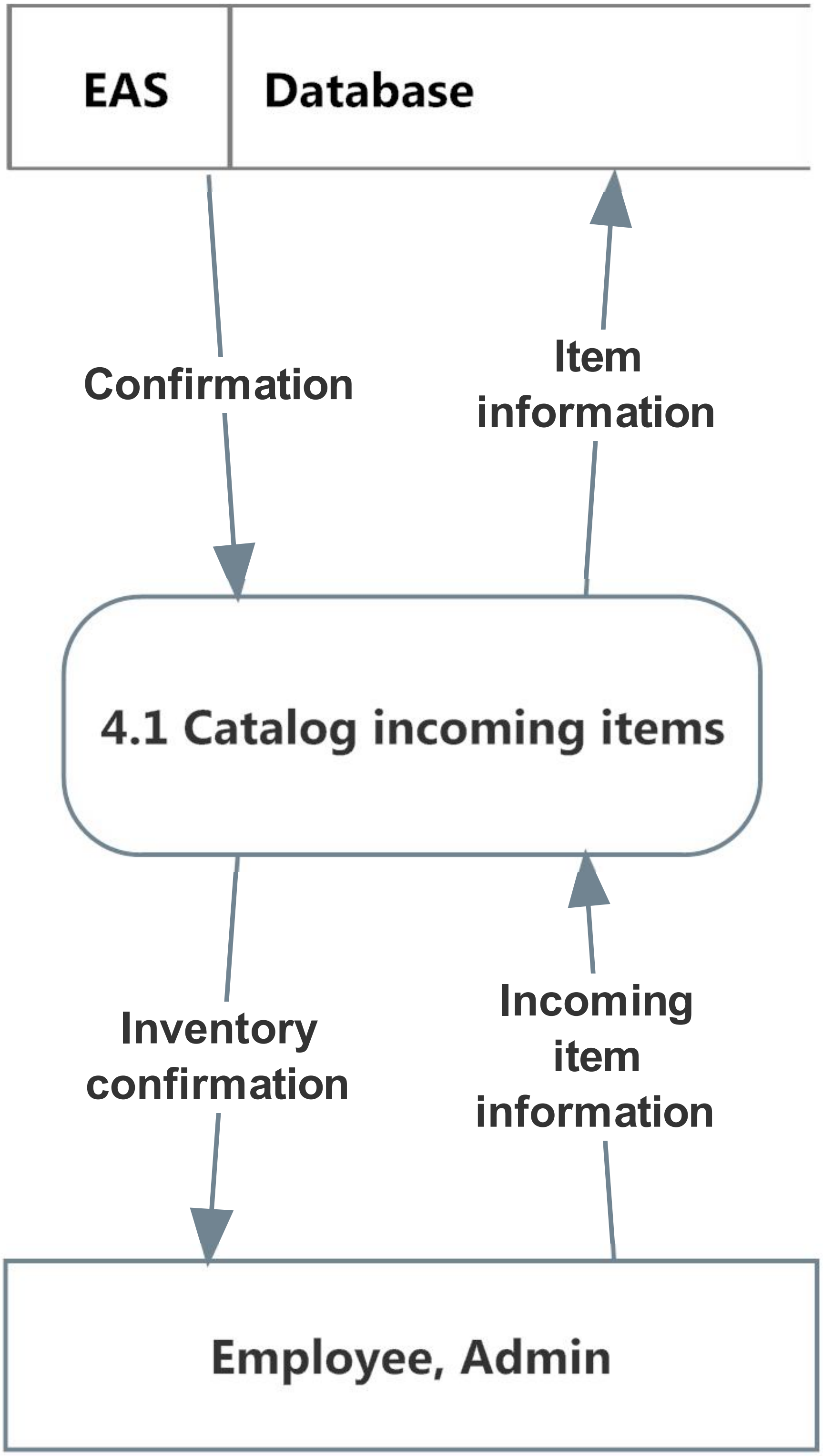
Sell Items


EAS
Database
Database update response
Items to be taken
Customer details
Customer record
2.2 Sell Items
Verification
2.1 Check customer
Check out success
Customer details
Employee, Admin

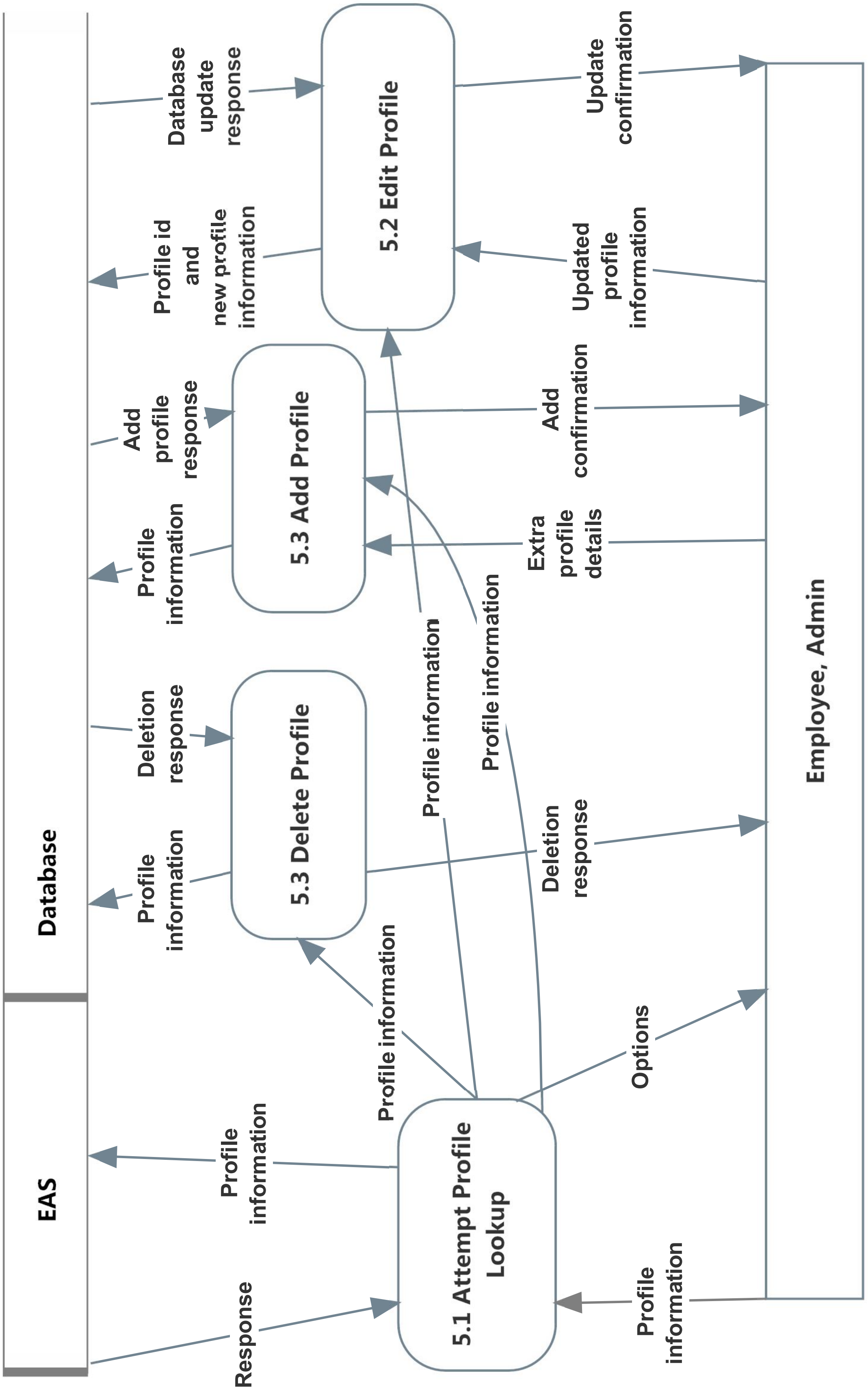
Print Receipts



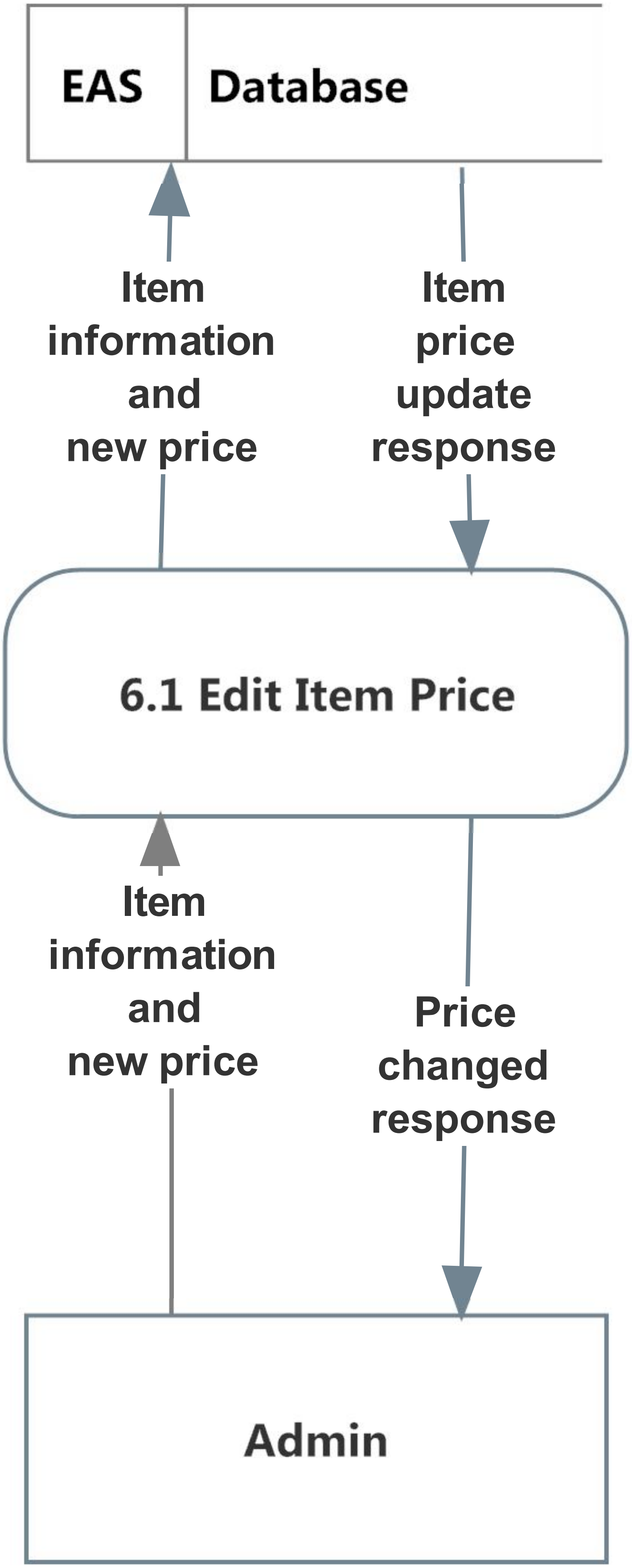
Accept Donations



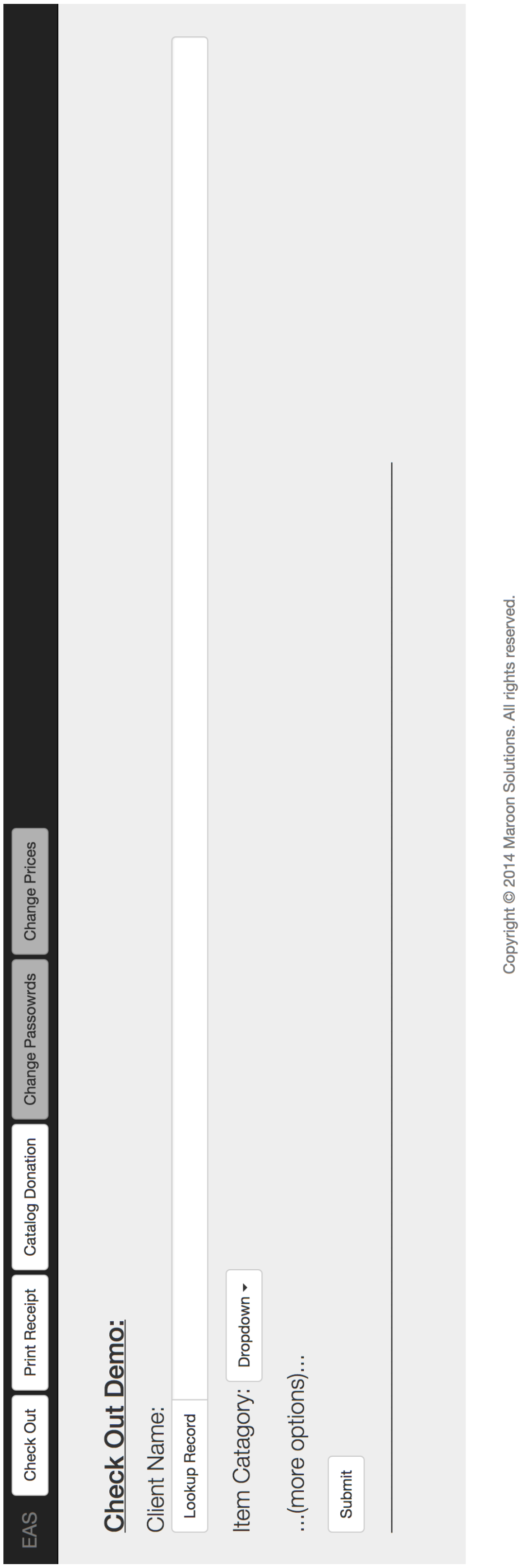
Manage Profiles



Edit Prices


EAS
Database
Item information and new price
Item price update response
6.1 Edit Item Price
Item information and new price
Price changed response
Admin

6: Protoypes for Discovery



7: Functional Requirements Inventory

The functional requirements inventory lists the functions that are necessary to the completion of E.A.S. The inventory lists all of the different abilities that each user has for interacting with the system.

Employee

- Will be able to Log on to an employee account
  - Enter Username
  - Enter Password
- Will be able to print receipts for donors
- Will be able to accept donations
  - Process donations
  - Add donations to sellable inventory
- Will be able to sell items
  - Mark items as sold
  - Check customer information
- Will be able to add customer/donor profiles

Administrator

- Inherits all abilities of Employee
- Can manage accounts
  - Add /edit/remove employee and other admin accounts
  - Remove customer/donor profiles
- Will be able to edit prices of items

8.Non-Functional Requirements

Non-functional requirements are requirements to E.A.S. that are not specific features in regards to functionality of the program. Instead they are either broad concepts to be implemented or descriptions of how the program will run.

- E.A.S. will be easy to use
- E.A.S. will be efficient
- E.A.S. will require little maintenance
- E.A.S. will user friendly

9: Exception Handling

Exception handling is the response to any errors that may occur during the implementation or use of E.A.S. For example, a problem that Maroon Solutions may come across is how to handle an incomplete form or a user incorrectly entering data. There are numerous errors or problems that could arise, such as those previously stated. At this stage of development, however, any specific complications or how Maroon Solutions will decide to handle them are unknown.

10: Implementation Priorities

Maroon Solutions will strive to meet all functional requirements. However, the most important components that we deliver in E.A.S. would be:

- The ability for employees/admins to login
- The ability for users to print receipts for donors
- The ability for users to update inventory information
- To make E.A.S. user friendly

11: Foreseeable Modifications

One foreseeable modification that maroon solutions is looking into is our idea of having a history of changes to the system. This will keep track of who made changes to store inventory or to customer profiles or donor profiles. Currently we are looking into hopefully creating a three month history log but if we have time we may look into expanding the history log for longer. If there are other modifications that our clients of grassroots givers would like to see we will surely do our best and implement them.

12: Testing Requirements

In order to insure that our system E.A.S. is functioning across multiple platforms we will test it on chrome, Firefox, safari, and IE. The tests that E.A.S. will undergo will be more specified at a later date. If our client has a specific web browser in mind though we will also add that into the browsers we are testing.

13: Acceptance Criteria

E.A.S. will be tested individual and then tested again once they are all pulled together to make one coherent system. By testing individually this will allow us to work on separate parts and see that they work and then by pulling it all together to make sure that the whole system works coherently together. After it is tested on our end Maroon Solutions will also run an acceptance test to see if the system meets all of our specefied requirements. After that Maroon Solutions and our client of Grassroots Givers will determine if all of their requirements have been met.

APPENDICES

14: Appendix A: Cross Reference Index

E.A.S. Context Diagram
E.A.S. Level 0 Diagram
E.A.S. 1 Log On Level 1 Diagram
E.A.S. 2 Sell Items Level 1 Diagram
E.A.S. 3 Print Receipts Level 1 Diagram
E.A.S. 4 Accept Donations Level 1 Diagram
E.A.S. 5 Manage Profiles Level 1 Diagram
E.A.S. 6 Edit Prices Level 1 Diagram

15: Appendix B: Glossary of Terms

Actor: Actors that interact with the system through sues. Actors can be human or non human.

Adobe Dreamweaver: Tool used for web application development

Adobe Photoshop: Graphic editing application

Apache HTTP Server: Apache HyperText Transfer Protocol Server, Web server application

Apple Safari: Web browser designed by Apple

Data Stores: A component of a Data Flow Diagram that represents a location in which information or data is stored

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

Data Flow: Data/information flowing to or from a process in a Data Flow Diagram

Data Flow Diagram: A graphical representation of the "flow" of data through an information system

Data Store: Location where data is held temporarily or permanently in a Data Flow Diagram

E.A.S.: Efficient and Simple - the software design by Maroon Solutions

External Entities: A component of a Data Flow Diagram that represents any human or non-human user of a Software System

Functional Requirements Inventory: Defines what the system will be able to do and what is testable about the system

Gantt Chart: Bar chart typically used to project scheduling

Google Chrome: Web browser designed by Google

Inclusion Arrow: An arrow that points from a scenario to another scenario to show that something must be included for the scenario

Inheritance Arrow: An arrow that points from one use to another; the use of being pointed at is the parent and the other is the sub

Internet Explorer: Web browser designed by Microsoft

Level-0 Diagram: A data flow diagram that represents a system's major processes, data flows, and data stores at a high level

Level-1 Diagram: Provides an overview of the major functional areas of the undertaking

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

Non-Functional Requirements Inventory: Requirements that are not necessarily specific features that exist in a system, but what the system is intended to do

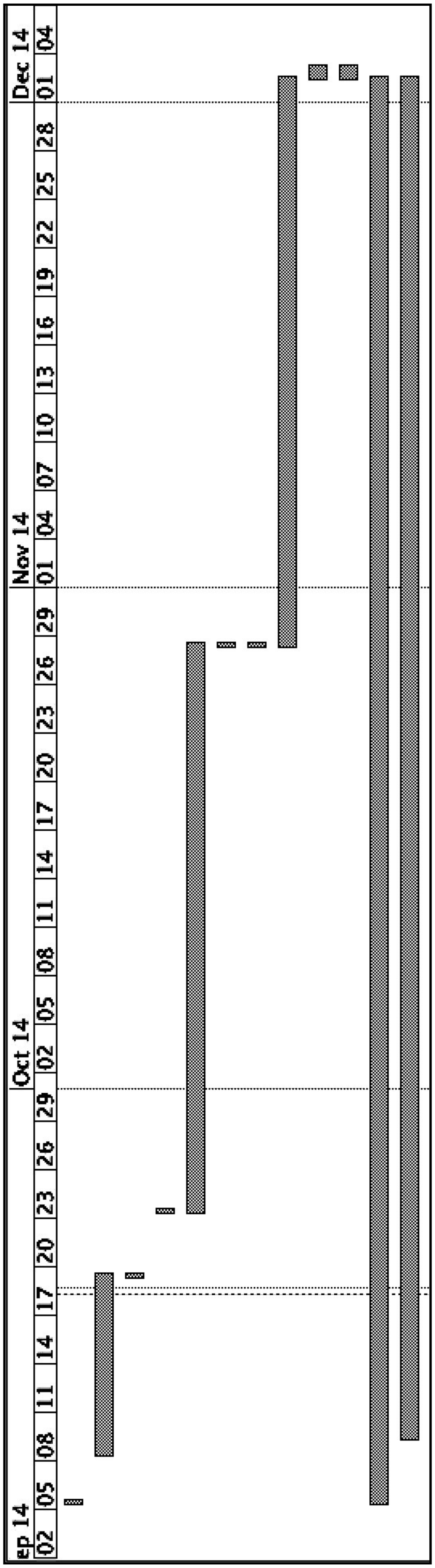
Notepad++: Text editor specializing in syntactic highlighting of various programming languages
Oracle Database: An object-relational database management system produced and marketed by Oracle Corporation
Oraserv Database: Siena College's database server
Participation Line: Shows what scenarios an actor can interact with in a UML Use Case Diagram
Process: Transforms or manipulates data in a Data Flow Diagram
Prototype: An early sample, model or release of a product built to test a concept
Requirements Specification: Further defining the client's problem to meet the specifications and requirements
Scenarios: The actions that occur within a system and how the user interacts with the system
SQL: Structured Query Language, language used to query databases
System Boundary: The boundary between the system and the external entities in a Data Flow Diagram
UML Use Case Diagram: A type of behavioral diagram to present a graphical overview of the functionality provided by a system
UML (Unified Modeling Language): A specification language used in software engineering
UPC (User Permission Chart): Chart that demonstrates the permissions of the different users in E.A.S.

16: Appendix C: Sources of Information

The primary source of information necessary for E.A.S. will come from Maroon Solutions' client, Ms. Partridge-Brown and Ms. Sandler. The supervisor, Dr. Fryling, will provide extra information and help in class, while the supervisor, Dr. Lim, will give Maroon Solutions instructions through labs. Maroon Solutions will also utilize the information provided through credible sources on the World Wide Web.

17: Appendix D: Timeline

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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