

Software Design Specification

for

MamoBooks

Version <1.0>

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Revision History

Name	Date	Reason For Changes	Version
Brian Deguzis	2/27/2018	Document Created	0.1
Eddie Matos	3/25/18	Document Updated- Purpose, overview, reference material, System overview, and overview of user interface.	0.2
Stuart Tresslar	04/22/18	Document Semi-Finalized - Requirements Matrix and Human Interface Design	0.9
Everyone	04/29/18	Added in UI Screenshots and document finalization	1.0

1. INTRODUCTION

1.1 Purpose

The purpose of this document is to provide a written description of the product that gives the software development team an overall guidance to the architecture of the software product. The intended audience are the members of the software development team.

1.2 Scope

This software will be developed as a web based application for purpose of handling various accounting and financial functions. The functionalities provided will be but are not limited to:

- Creating/viewing and editing a chart of accounts
- Journalizing and viewing journalized transactions
- Posting transactions to accounts

- Creating and viewing trial balances
- Creating and viewing various financial statements
- Income statements
- Balance sheets
- Cash flow statements
- Creating ration analysis

This application will help our users keep a detailed account of all the monetary businesses transactions.

1.3 Overview

This document is the software design document for Mamobooks. This document is divided into seven main sections. The introduction, system overview, system architecture, data design, component design, human interface design, and requirements matrix.

1.4 Reference Material

"Accounting Database Design." Simple Accounting - Database Design, simpleaccounting.freesevers.com/database.htm.

"Accounting Databases." Data Base Answers, www.databaseanswers.org/data_models/.
DigitalOcean. "LAMP Stack Tutorials | DigitalOcean." Tutorials | DigitalOcean, Digital Ocean, www.digitalocean.com/community/tags/lamp-stack?type=tutorials.

LinkedIn. "Lynda Accounting Principles ." Lynda Business and Accounting Library , LinkedIn, www.lynda.com/.

"WordPress.org." WordPress Codex, WordPress, codex.wordpress.org/.

1.5 Definitions and Acronyms

Term	Definition
SDD	Software Design Document- A functional design document that describes a software product's capabilities, appearances, and functions it needs to ultimately perform.

2. SYSTEM OVERVIEW

Give a general description of the functionality, context and design of your project. Provide any background information if necessary.

Mamo books is a software developed to help businesses keep track of monetary business transactions. The system will allow for three types of users each with distinct roles. The roles will be a normal user, manager, and an administrator. Each user will have a distinct login which will be created by an administrator. The system will allow the user to create edit and view the chart of accounts, journalize and view transactions, posting, create and view trial balances, view income statements, view balance sheets, and view cash flow statements. The system will also allow for a user to add files when journalizing a transaction. The system will allow a manager to accept or decline a transaction.

3. SYSTEM ARCHITECTURE

3.1 Architectural Design

We are using the LAMP stack. In other words, we are using a LINUX server with Apache HTTP server protocol, MySQL for database management, and PHP for programming functionality. Our User Interface uses the Wordpress boilerplate. Every boilerplate comes with a default theme. We opted to customize this theme to make it more fitting for accounting. The UI is made of of template files (for each different page that renders to reference), stylesheets, Javascript files, image files, and other files under functions.php. All these files work together to create the design and functionality of our accounting software. All these template files are PHP files (.php) which are used to generate web pages. Some template files were created to be used on all web pages (much like the header and footer) while others are used only under specific conditions. The Wordpress boilerplate decides which template files to load by following hierarchy rules. We use PHP as a server side pre-processor.

3.2 Decomposition Description

The wp-config.php file is the WordPress configuration file. It sets global variables for our accounting software and contains MamoBooks' database access information. This includes information like default file upload locations, max file sizes, and other default constants set in the wp-config file. With MySQL, we created database abstraction layers and load them in. With our MySQL server, we can select databases to load on certain pages or after action events. With PHP, we can load custom localization systems, load functions, and carry them out to the database our changes. With our classes made in PHP, these are also referenced in

the database and relationships are created for future retrieval. Once the item is completed, it can be accessed through the user end. When the visitor enters the UI, our PHP functions retrieve the data from the database and populates the correct template for that type of content based on the current available document object models.

3.3 Design Rationale

The very first reason which can be seen as a deciding factor for its enormous user base is definitely being it open source. What makes PHP so powerful is that rather than building new webpages in the form of individual html documents, we just create database entries, and the application builds the pages upon request. This also means you can edit the content of an item at any time, and that you can change the appearance of one piece of content or your entire site without changing the content itself by only manipulating the items in our database.

Overall, we started this project using **MVC** architecture. In other words, we created separate working files dividing the function **Models**, stylized **Views**, and communicative **Controllers**.

4. DATA DESIGN

4.1 Data Description

In MamoBooks, we use a range of database tables with relationships between them to minimize the amount of data that has to be stored and queried. This creates one-to-many relationships. This means that, say, one user can have many accounts that they opened related to their ledger.

5. COMPONENT DESIGN

5.1 Database

Identification	MySQL Database
Type	Module
Purpose	Provides a means for data management.
Function	Takes commands SQL QUERY and UPDATE from the server software and manipulates the data according to these commands.

Subordinates	<p>The database will store data for each type of item in the class library in tables.</p> <p>Ex:</p> <ul style="list-style-type: none"> ● tags <ul style="list-style-type: none"> ○ id* ○ title ○ color ○ background ● entrytypes <ul style="list-style-type: none"> ○ id* ○ label ○ name ○ description ○ base_type ○ numbering ○ prefix ○ suffix ○ zero_padding ○ restriction_bankcash ● entries <ul style="list-style-type: none"> ○ id* ○ tag_id ○ entrytype_id ○ number ○ date ○ dr_total ○ cr_total ○ notes ○ attachment ● entryitems <ul style="list-style-type: none"> ○ id* ○ entry_id ○ ledger_id ○ amount ○ dc ○ reconciliation_date ○ summary ● ledgers <ul style="list-style-type: none"> ○ id* ○ group_id ○ name ○ code
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	<ul style="list-style-type: none"> ○ op_balance ○ op_balance_dc ○ type ○ reconciliation ○ notes ● groups <ul style="list-style-type: none"> ○ id* ○ parent_id ○ name ○ code ○ affects_gross ● logs <ul style="list-style-type: none"> ○ id ○ date ○ level ○ host_ip ○ user_id ○ url ○ user_agent ○ message ● mammo_entryitems <ul style="list-style-type: none"> ○ id ○ entry_id ○ ledger_id ○ amount ○ dc ○ reconciliation_date ○ summary ● mammo_entries <ul style="list-style-type: none"> ○ id* ○ tag_id ○ entrytype_id ○ number ○ date ○ dr_total ○ cr_total ○ notes ○ attachment ○ id ○ date ○ level ○ host_ip
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	<ul style="list-style-type: none"> ○ user_id ○ url ○ user_agent ○ message ● mammo_ledgers <ul style="list-style-type: none"> ○ id* ○ group_id ○ name ○ code ○ op_balance ○ op_balance ○ type ○ reconciliation ○ notes ● mammo_groups <ul style="list-style-type: none"> ○ id* ○ parent_id ○ name ○ code ○ affects_gross ● mammo_tags <ul style="list-style-type: none"> ○ id* ○ title ○ color ○ background ● mammo_entrytypes <ul style="list-style-type: none"> ○ id* ○ label ○ name ○ description ○ base_type ○ numbering ○ prefix ○ suffix ○ zero_padding ○ restriction_bankcash ● settings <ul style="list-style-type: none"> ○ id* ○ name ○ address ○ email ○ fy_start
--	--

	<ul style="list-style-type: none"> ○ fy_end ○ currency_symbol ○ currency_format ○ decimal_places ○ date_format ○ timezone ○ manage_inventory ○ account_locked ○ email_use_default ○ email_protocol ○ email_host ○ email_port ○ email_tls ○ email_username ○ email_password ○ email_from ○ print_paper_height ○ print_paper_width ○ print_margin_top ○ print_margin_bottom ○ print_margin_left ○ print_margin_right ○ print_orientation ○ print_page_format ○ database_version ○ settings ○ logo ● mammo_settings <ul style="list-style-type: none"> ○ id* ○ name ○ address ○ email ○ fy_start ○ fy_end ○ currency_symbol ○ currency_format ○ decimal_places ○ date_format ○ timezone ○ manage_inventory ○ account_locked ○ email_use_default
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	<ul style="list-style-type: none"> ○ email_protocol ○ email_host ○ email_port ○ email_tls ○ email_username ○ email_password ○ email_from ○ print_paper_height ○ print_paper_width ○ print_margin_top ○ print_margin_bottom ○ print_margin_left ○ print_margin_right ○ print_orientation ○ print_page_format ○ database_version ○ settings ○ logo
Dependencies	Administrative users must perform database setup functions, adding and modifying the structures of tables so that the server software can store the data as appropriate.
Interfaces	All modifications to the database will be performed via the PHP configuration file. The web-application will retrieve tables to generate pages.
Resources	The database that we are using is a MySQL database that is deployed using DigitalOcean. All tables will be created by an administrator. The database will be populated with an initial set of tables for holding our data for MamoBooks. When a request is made to the database via the PHP configuration file, a valid SQL statement will be generated and executed, retrieving a table that can be displayed by the User Interface.
Data	The data in the database will be filled via commands provided by the PHP application. A SQLException will be returned if the command provided by the PHP configuration file fails for any reason. These exceptions will be handled according to their type.

Figure 5-1 ER Diagram

5.2 Server Application

Identification	Linux/Apache Server
Type	Package
Purpose	Contains MamoBooks' database access information and default constants for the database.
Function	The server listens for FTP client connections.
Subordinates	The server will rely on the PHP files.
Dependencies	Server depends on the database. FTP clients will rely on the server to retrieve data from the database.
Interfaces	The server will utilize the FTP client and Apache's HTTP protocol to connect to the database and pull information.
Resources	The server will use Apache's HTTP protocol.
Processing	N/A
Data	The server uses the MySQL database to store data. The server acts as a means of communication between the FTP clients and the MySQL database.

5.3 PHP Files

Identification	PHP
Type	Package
Purpose	Provides data structures for the server and clients
Function	Package of PHP files that contain logic for managing the database.
Subordinates	PHP Files consists of the following programs written in PHP. <ul style="list-style-type: none"> ● Account_settings ● Accounts

	<ul style="list-style-type: none"> • Admin • Dashboard • Entries • Groups • Ledgers • Login • Reports • Search • User
Dependencies	N/A
Interfaces	Each Class possesses its own means of implementation to perform their required functions. The FTP clients will utilize many of these classes to access the database.
Resources	The specific resources required for the PHP files to run correctly is the Mamobook's MySQL database.
Processing	N/A
Data	N/A

5.4 User Interface

Identification	CSS / jQuery
Type	Cascading styling sheets and javascript frameworks
Purpose	Organizes the information pulled from the database into a presentable form.
Function	These cover the front end of the software
Subordinates	<ol style="list-style-type: none"> 1. The Login Screen – provides security for the accounting system <ol style="list-style-type: none"> a. Inputs <ol style="list-style-type: none"> i. Username ii. password b. Outputs <ol style="list-style-type: none"> i. Status of login attempt ii. Presents accounting system based on

	<p>connection status and server authentication</p> <p>2. Mamobook's Accounting System – Shows the user elements on the system depending on their user type.</p> <p>a. Inputs</p> <p>i. User specific roles and duties. This includes journal entries, account creation, and user editing</p> <p>b. Outputs</p> <p>i. User specific views that depend upon the user's type.</p>
Dependencies	The front end of the software will present all information from the database.
Interfaces	It will use CSS and JQuery to manage all interactions with the user.
Resources	N/A
Processing	N/A
Data	N/A

6. HUMAN INTERFACE DESIGN

6.1 Overview of User Interface

The user will be able to navigate through the different web-pages of the web application through a series of buttons, clickable text, and most importantly: the side-menu. Each will take the user to an appropriate web-page in each of the modules. The biggest design consideration is making sure the user can see all of the available functionality options relevant to the module they are currently accessing. For example, it is important that the user knows the different ways to sort through the journal entries so they can easily find the specific entry they may be looking for.

6.2 Screen Images

The following pages are from the wireframe mockup created for the web application. Each image is a separate page that can be accessed using the normal methods a user would use to navigate to the page. For a reference on how each of the pages relate to each other, the wireframe can be used. On the Moqup (the software used to create the wireframe) page linked later, each interactable area can be seen using the cursor-like image up at the top of the preview titled

Hotspots. This will highlight all interactable areas in green. Most interactable areas are present in the main pages of each module. When navigating off of a module's main page, the main page may be accessed again by either going to in the page dropdown on the left or by clicking on the same interactable area that took you to the non-main page. For example: clicking on the search-box on the Chart of Accounts main page will take you to a mockup of how it should look when searching for a term. The search box can then be clicked again to navigate back to the Chart of Accounts main page.

The following link is the preview link for the wireframe mockup:

<https://app.moqups.com/Regalflarbin/sfaeeq8eVN/view>

Click on pages on the far left to view all the mock ups.



Log In


Username

Password

Login

[Need to change/create an account? Click here!](#)

Figure 6-1 Log In



Log In

Username


Password

Incorrect Username/Password

Login

[Need to change/create an account? Click here!](#)

Figure 6-2 Log In Error



Account Request
Request Summary

Enter request here...

Email Address:

Username

Password

[Need to change/create an account? Click here!](#)

Figure 6-3 Log In Request



Log In

Request sent!

Username


Password

Login

[Need to change/create an account? Click here!](#)

Figure 6-4 Log In Request Sent

Log out



Accountant

Chart of Accounts

Journalize

Ledgers

Reports

Dashboard

Chart of Accounts

Assets


▼ ID	▼ Account Name	▼ Time Status	▼ Active Status	▼ Balance
101	Cash	Current	Active	\$100.00
102	Petty Cash	Current	Inactive	0.00
103	Equipment	Longterm	Active	10.00
104	Supplies	Current	Inactive	0.00

Liabilities

▼ ID	▼ Account Name	▼ Time Status	▼ Active Status	▼ Balance
201	Accounts Payable	Longterm	Active	\$100.00
202	Notes Payable	Current	Inactive	0.00
203	etc	Longterm	Active	10.00
204	etc etc	Longterm	Inactive	0.00

Figure 6-5 Chart of Accounts Non-Admin

Log out



Administrator

Chart of Accounts

Create Account

Chart of Accounts

Search...

Users

Logs

Assets

ID	Account Name	Time Status	Active Status	Balance	
101	Cash	Current	Active	\$100.00	Edit
102	Petty Cash	Current	Inactive	0.00	Edit
103	Equipment	Longterm	Active	10.00	Edit
104	Supplies	Current	Inactive	0.00	Edit

Liabilities

ID	Account Name	Time Status	Active Status	Balance	
201	Accounts Payable	Longterm	Active	\$100.00	Edit
202	Notes Payable	Current	Inactive	0.00	Edit
203	etc	Longterm	Active	10.00	Edit
204	etc etc	Longterm	Inactive	0.00	Edit

Figure 6-6 Chart of Accounts Admin


Log out

 Administrator

Chart of Accounts

Users

Logs

Create Account

Account Type

Account Subtype

Account Name

Initial Balance

☒ Account is Active

Cancel Create

Assets


▼ ID	▼ Account Name	▼ Time Status	▼ Active Status	▼ Balance	
101	Cash	Current	Active	\$100.00	Edit
102	Petty Cash	Current	Inactive	0.00	Edit
103	Equipment	Longterm	Active	10.00	Edit
104	Supplies	Current	Inactive	0.00	Edit

Liabilities

▼ ID	▼ Account Name	▼ Time Status	▼ Active Status	▼ Balance	
201	Accounts Payable	Longterm	Active	\$100.00	Edit
202	Notes Payable	Current	Inactive	0.00	Edit

Figure 6-7 Create Account

Log out



Administrator

Chart of Accounts

Create Account

Chart of Accounts

Search...

Users

Logs

Account Created Successfully

Assets


ID	Account Name	Time Status	Active Status	Balance	Edit
101	Cash	Current	Active	\$100.00	Edit
102	Petty Cash	Current	Inactive	0.00	Edit
103	Equipment	Longterm	Active	10.00	Edit
104	Supplies	Current	Inactive	0.00	Edit
105	Accounts Receivable	Current	Inactive	0.00	Edit

Liabilities

ID	Account Name	Time Status	Active Status	Balance	Edit
201	Accounts Payable	Longterm	Active	\$100.00	Edit
202	Notes Payable	Current	Inactive	0.00	Edit
203	etc	Longterm	Active	10.00	Edit
204	etc etc	Longterm	Inactive	0.00	Edit

Figure 6-8 Account Created

Log out



Administrator

Chart of Accounts

Create Account

Chart of Accounts

Users

Logs

Longterm Cash account has been edited!

Assets

ID	Account Name	Time Status	Active Status	Balance	
101	Longterm Cash	Longterm	Active	\$100.00	Edit
102	Petty Cash	Current	Inactive	0.00	Edit
103	Equipment	Longterm	Active	10.00	Edit
104	Supplies	Current	Inactive	0.00	Edit

Liabilities

ID	Account Name	Time Status	Active Status	Balance	
201	Accounts Payable	Longterm	Active	\$100.00	Edit
202	Notes Payable	Current	Inactive	0.00	Edit
203	etc	Longterm	Active	10.00	Edit
204	etc etc	Longterm	Inactive	0.00	Edit

Figure 6-10 Account Edited

Log out
Accountant

Chart of Accounts

Journalize

Ledgers

Reports

Dashboard

Create Journal Entry

Journalize

of entries per page 5

FROM

TO

Entry Type All Entry Types

Journal - Page 1

Approval Status
All Entries

ID	Transaction Date	Account ID	Account Name	Debit	Credit	Approval Status
J0000001	04/04/2018	101 103 104	Cash Equipment Supplies Description Files	\$100.00	\$50.00 50.00	Approved
J0000002	04/05/2018	103 201	Equipment Accounts Payable Description Files	1,000.00	1,000.00	Rejected Reason
J0000003	04/05/2018	104 101	Supplies Cash Description Files	50.00	50.00	Approved
J0000004	04/06/2018	201 101	Accounts Payable Cash Description Files	100.00	100.00	Approved
J0000005	04/07/2018	101 202	Cash Notes Payable Description Files	2,000.00	2,000.00	Approved

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Next Page

Figure 6-12 Journalize


Log out

Accountant


Chart of Accounts

Journalize

Ledgers


Reports

Dashboard

4/22/2012 

Create Journal Entry

Entry Type

Regular 

Debits

Account Name

\$0.00

+

Credits

Account Name

\$0.00

+

Description

Type description here...

Upload Files

View Files

Cancel

Submit

ID	Transaction Date	Account ID	Account Name	Debit	Credit	Approval Status
J0000001	04/04/2018	101 103 104	Cash Equipment Supplies Description Files	\$100.00	\$50.00 50.00	Approved
J0000002	04/05/2018	103 201	Equipment Accounts Payable Description Files	1,000.00	1,000.00	Rejected Reason
J0000003	04/05/2018	104 101	Supplies Cash Description Files	50.00	50.00	Approved
J0000004	04/06/2018	201 101	Accounts Payable Cash Description Files	100.00	100.00	Approved
J0000005	04/07/2018	101 202	Cash Notes Payable Description Files	2,000.00	2,000.00	Approved

Figure 6-13 Create Journal Entry

29


[Log out](#)

 Manager

Chart of Accounts

Journalize

Ledgers

Reports

Dashboard

[Create Journal Entry](#)

Journalize

of entries per page 5

FROM Start Date

TO End Date

Entry Type All Entry Types

Journal entry J0000008 submitted for approval

Journal - Page 1

Approval Status
All Entries

▼ ID	Transaction Date	Account ID	Account Name	Debit	Credit	Approval Status
J0000001	04/04/2018	101 103 104	Cash Equipment Supplies Description Files	\$100.00	\$50.00 50.00	Approved
J0000002	04/05/2018	103 201	Equipment Accounts Payable Description Files	1,000.00	1,000.00	Rejected Reason
J0000003	04/05/2018	104 101	Supplies Cash Description Files	50.00	50.00	Approved
J0000004	04/06/2018	201 101	Accounts Payable Cash Description Files	100.00	100.00	Approved
J0000005	04/07/2018	101 202	Cash Notes Payable Description Files	2,000.00	2,000.00	Approved

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[Next Page](#)

Figure 6-14 Journal Submitted


Log out

Manager

Chart of Accounts

Journalize

Ledgers

Reports

Dashboard

Create Journal Entry

Journalize

of entries per page 5

FROM Start Date

TO End Date

Entry Type All Entry Types

Journal - Page 1

▼ ID	Transaction Date	Account ID	Account Name	Debit	Credit	Approval Status
J0000006	04/08/2018	202 101	Notes Payable Cash Description Files	\$100.00	\$100.00	<div>Pending</div> <div>Approve</div> <div>Reject</div>

Approval Status

Pending

Prev. Page
Next Page

Figure 6-15 Pending Journal Entries as Manager


[Log out](#)

 Manager

Chart of Accounts

Journalize

Ledgers

Reports

Dashboard

[Create Journal Entry](#)

Journalize

of entries per page 5

FROM Start Date

TO End Date

Entry Type All Entry Types

Journal entry J0000006 approved and posted!

Journal - Page 1

Approval Status
All Entries

▼ ID	Transaction Date	Account ID	Account Name	Debit	Credit	Approval Status
J0000001	04/04/2018	101 103 104	Cash Equipment Supplies Description Files	\$100.00	\$50.00 50.00	Approved
J0000002	04/05/2018	103 201	Equipment Accounts Payable Description Files	1,000.00	1,000.00	Rejected Reason
J0000003	04/05/2018	104 101	Supplies Cash Description Files	50.00	50.00	Approved
J0000004	04/06/2018	201 101	Accounts Payable Cash Description Files	100.00	100.00	Approved
J0000005	04/07/2018	101 202	Cash Notes Payable Description Files	2,000.00	2,000.00	Approved

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Figure 6-16 Journal Entry Approved

Log out

Manager

Chart of Accounts

Journalize

Ledgers

Reports

Dashboard

Create Journal Entry

Journalize

of entries per page 5

FROM Start Date

TO End Date

Entry Type All Entry Types

Approval Status Pending

Credit	Approval Status
0.00	Pending
\$100.00	Approve
	Reject

Prev. Page Next Page

Reject Entry

Rejection Reason

Enter reason here...

Cancel Reject

Figure 6-17 Journal Entry Reject Reason


[Log out](#)

 Manager

Chart of Accounts

Journalize

Ledgers

Reports

Dashboard

[Create Journal Entry](#)

Journalize

of entries per page 5

FROM Start Date

TO End Date

Entry Type All Entry Types

Journal entry J0000006 rejected!

Journal - Page 1


Approval Status
All Entries

▼ ID	Transaction Date	Account ID	Account Name	Debit	Credit	Approval Status
J0000001	04/04/2018	101 103 104	Cash Equipment Supplies Description Files	\$100.00	\$50.00 50.00	Approved
J0000002	04/05/2018	103 201	Equipment Accounts Payable Description Files	1,000.00	1,000.00	Rejected Reason
J0000003	04/05/2018	104 101	Supplies Cash Description Files	50.00	50.00	Approved
J0000004	04/06/2018	201 101	Accounts Payable Cash Description Files	100.00	100.00	Approved
J0000005	04/07/2018	101 202	Cash Notes Payable Description Files	2,000.00	2,000.00	Approved

[Prev. Page](#)
[Next Page](#)

Figure 6-18 Journal Entry Rejected

Log out



Accountant

Go Back

J0000001

Transaction Date	Account ID	Account Name	Debit	Credit	Approval Status
04/04/2018	101	Cash	\$100.00		Approved
	103	Equipment		\$50.00	
	104	Supplies		50.00	

Description

Sold equipment and supplies for cash.

Files:
[Receipt.png](#)

Figure 6-19 Approved Journal Entry


Log out


Chart of Accounts

Journalize

Ledgers

Reports

Dashboard

Go Back
J0000002

Transaction Date	Account ID	Account Name	Debit	Credit	Approval Status
04/05/2018	103 201	Equipment Accounts Payable	\$1,000.00	\$1,000.00	Rejected

Description

Bought equipment on credit.

Files:

[Invoice.png](#)

Rejection Reason

Should be 100 instead of 1,000.

Figure 6-20 Rejected Journal Entry


Log out

Accountant

Chart of Accounts

Journalize

Ledgers

Reports

Dashboard

Ledgers

Assets

101 - Cash

Date	Journal ID	Debit	Credit	Balance
04/04/2018	J0000001	\$100.00		\$1100.00
04/05/2018	J0000003		\$50.00	\$1050.00
04/06/2018	J0000004		100.00	\$950.00
04/07/2018	J0000005	2000.00		\$2950.00
04/07/2018	J0000006		100.00	\$2850.00
Current Balance:				\$2850.00

103 - Equipment

Date	Journal ID	Debit	Credit	Balance
04/04/2018	J0000001		\$50.00	\$50.00
Current Balance:				\$50.00

104 - Supplies

Date	Journal ID	Debit	Credit	Balance
04/04/2018	J0000001		\$50.00	\$50.00
04/05/2018	J0000003	\$50.00		\$100.00
Current Balance:				\$100.00

Liabilities

201 - Accounts Payable

Figure 6-21 Ledgers



		Log out  Accountant	
Chart of Accounts Journalize Ledgers Reports Dashboard	<div>Time Period</div> <div>Annually ▼</div>		<div>Report Type</div> <div>Unadjusted Trial Balance ▼</div>
	<div>End Date</div> <div>12/31/2010  ▼</div>		<div>Create Report</div>

Figure 6-22 Options for Non-Balance Sheet Financial Reports


		<div>Log out</div> <div> Accountant</div>	
<div>Chart of Accounts</div> <div>Journalize</div> <div>Ledgers</div> <div>Reports</div> <div>Dashboard</div>	<div>Reports</div>		<div>Report Type</div> <div>Balance Sheet</div>
			<div>Create Report</div>

Figure 6-23 Options for Balance Sheet


[Log out](#)

 Accountant

Chart of Accounts

Journalize

Ledgers

Reports


Dashboard

Reports

Time Period

Annually ▼

End Date

12/31/2010 

Report Type

Unadjusted Trial Balance ▼

[Create Report](#)

XYZ Business Unadjusted Trial Balance For the Year Ending December 31st, 2010			
Account Type	Account Name	Debit	Credit
Assets	Cash	\$5,950.00	
	Accounts Receivable	100.00	
	Equipment	50.00	
	Supplies	100.00	
Liabilities	Accounts Payable		\$100.00
	Notes Payable		2,000.00
	Salaries Payable		200.00
Equity	Owner's Equity		2,050.00
	Contributed Capital		300.00
	Retained Earnings		0.00
Revenue	Service Revenue		5,000.00
Expense	Insurance Expense	150.00	
	Depreciation Expense	500.00	
	Salaries Expense	1,500.00	
	Telephone Expense	980.00	
	Utilities Expense	320.00	
		<u>\$6,650.00</u>	<u>\$6,650.00</u>

Figure 6-24 Unadjusted Trial Balance


[Log out](#)

 Accountant

Chart of Accounts

Journalize

Ledgers

Reports


Dashboard

Reports

Time Period

Annually ▼

End Date

12/31/2010 

Report Type

Adjusted Trial Balance ▼

[Create Report](#)

XYZ Business Adjusted Trial Balance For the Year Ending December 31st, 2010			
Account Type	Account Name	Debit	Credit
Assets	Cash	\$5,850.00	
	Accounts Receivable	100.00	
	Equipment	50.00	
	Supplies	100.00	
Liabilities	Accounts Payable		\$1,000.00
	Notes Payable		2,000.00
	Salaries Payable		200.00
Equity	Owner's Equity		2,050.00
	Contributed Capital		300.00
	Retained Earnings		0.00
Revenue	Service Revenue		5,000.00
Expense	Insurance Expense	150.00	
	Depreciation Expense	500.00	
	Salaries Expense	1,500.00	
	Telephone Expense	980.00	
	Utilities Expense	320.00	
		<u>\$9,550.00</u>	<u>\$9,550.00</u>

Figure 6-25 Adjusted Trial Balance


[Log out](#)

 Accountant

Chart of Accounts

Journalize

Ledgers

Reports


Dashboard

Reports

Time Period

Annually ▼

End Date

12/31/2010 

Report Type

Post-Closing Trial Balance ▼

[Create Report](#)

XYZ Business Post-Closing Trial Balance For the Year Ending December 31st, 2010			
Account Type	Account Name	Debit	Credit
Assets	Cash	\$7,850.00	
	Accounts Receivable	100.00	
	Equipment	50.00	
	Supplies	100.00	
Liabilities	Accounts Payable		\$1,000.00
	Notes Payable		2,000.00
	Salaries Payable		200.00
Equity	Owner's Equity		2,050.00
	Contributed Capital		300.00
	Retained Earnings		2,550.00
Revenue	Service Revenue		0.00
Expense	Insurance Expense	0.00	
	Depreciation Expense	0.00	
	Salaries Expense	0.00	
	Telephone Expense	0.00	
	Utilities Expense	0.00	
		<u>0.00</u>	
	<u>\$8,100.00</u>	<u>\$8,100.00</u>	

Figure 6-26 Post-Closing Trial Balance


[Log out](#)

 Accountant

Chart of Accounts

Journalize

Ledgers

Reports


Dashboard

Reports

Time Period

Annually ▼

End Date

12/31/2010 

Report Type


Income Statement ▼

[Create Report](#)

XYZ Business Income Statement For the Year Ending December 31st, 2010		
	Account Name	Amount
Revenue	Service Revenue	<u>\$5,000.00</u>
Total Revenue		<u>5,000.00</u>
Expense	Insurance Expense	150.00
	Depreciation Expense	500.00
	Salaries Expense	1,500.00
	Telephone Expense	980.00
	Utilities Expense	<u>320.00</u>
Total Expense		<u>3,450.00</u>
Net Income(Loss)		<u>\$1,550.00</u>

Figure 6-27 Income Statement

Log out



Accountant

Chart of Accounts

Journalize

Ledgers

Reports

Dashboard

Reports

Report Type

Balance Sheet

Create Report

XYZ Business

Balance Sheet

As of December 31st, 2010

Account Type	Account Name	Balance
Assets	Cash	\$5,850.00
	Accounts Receivable	\$100.00
	Equipment	\$50.00
	Supplies	\$100.00
Liabilities	Accounts Payable	\$100.00
	Notes Payable	\$2,000.00
	Salaries Payable	\$200.00
Equity	Owner's Equity	\$2,050.00
	Contributed Capital	\$300.00
Revenue Expense	Service Revenue	\$5,000.00
	Insurance Expense	\$150.00
	Depreciation Expense	\$500.00
	Salaries Expense	\$1,500.00
	Telephone Expense	\$980.00
	Utilities Expense	\$320.00

Figure 6-28 Balance Sheet


[Log out](#)

 Accountant

Chart of Accounts

Journalize

Ledgers


Reports

Dashboard

Time Period

Annually ▼

End Date

12/31/2010 

Reports

Report Type

Statement of Retained Earnings ▼

[Create Report](#)

XYZ Business

Statement of Retained Earnings

For the Year Ending December 31st, 2010

Beg Retained Earnings, 01/01/10	\$ 0.00
Add: Net Income	<u>1,550.00</u>
	1,550.00
Less: Dividends	<u>0.00</u>
End Retained Earnings, 12/31/10	<u>\$1,550.00</u>

Figure 6-29 Statement of Retained Earnings

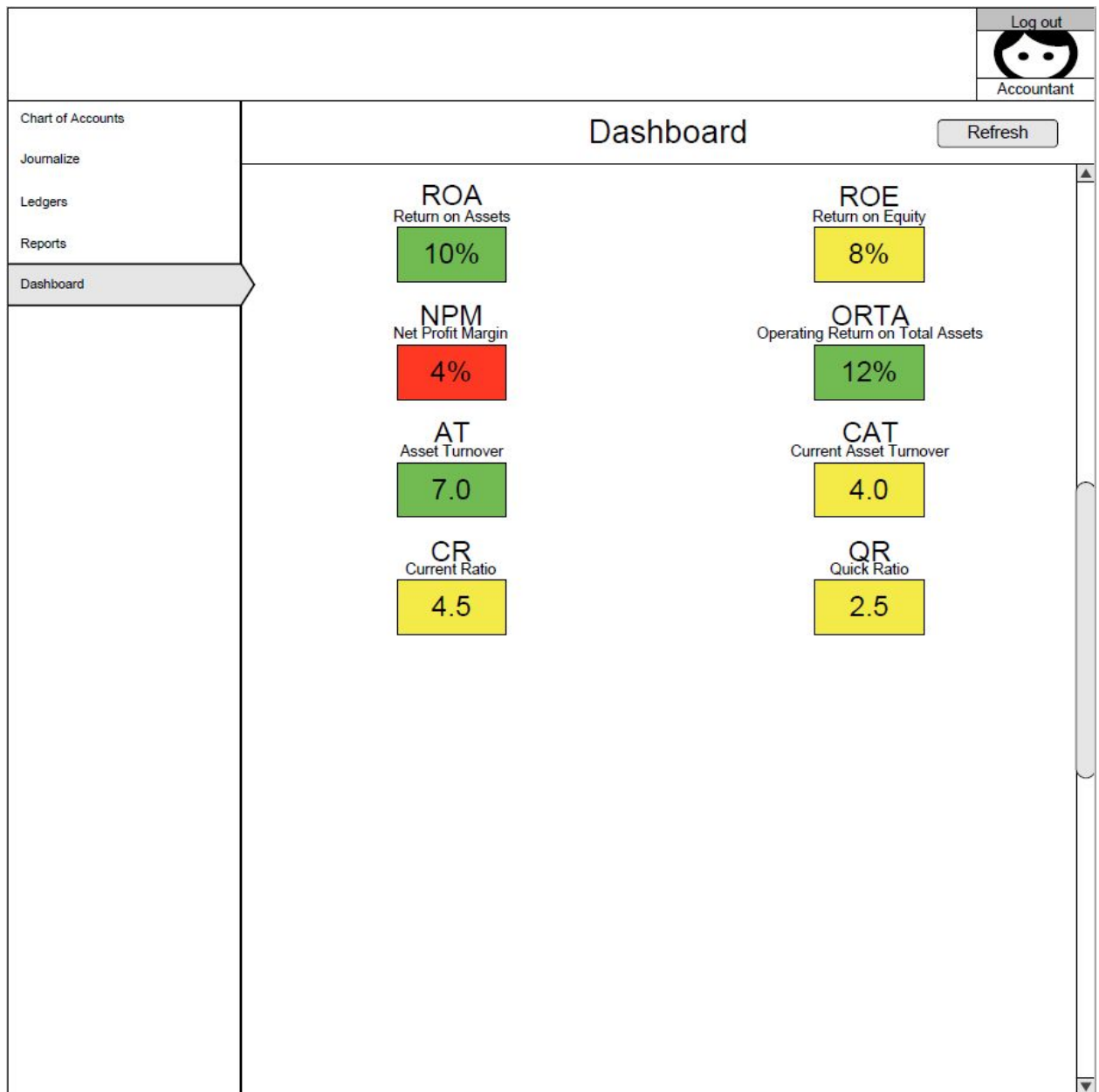



Figure 6-30 Dashboard

Log out



Administrator

Chart of Accounts

Users

Logs

Create User

Users

Username	Password	Email Address	User Type	
manager01	m4n4g3r	manager@email.com	Manager	Edit
accountant01	4cc0unt	accountant@email.com	Accountant	Edit
administrator01	4dm1n	administrator@email.com	Administrator	Edit

Figure 6-31 Users


[Log out](#)

 Administrator

Chart of Accounts

Users

Logs

Create User

Username

Password

Email Address


User Type Options ▼

Cancel
Create

Username	Password	Email Address	User Type	
manager01	m4n4g3r	manager@email.com	Manager	Edit
accountant01	4cc0unt	accountant@email.com	Accountant	Edit
administrator01	4dm1n	administrator@email.com	Administrator	Edit

Figure 6-32 Create User

Log out



Administrator

Chart of Accounts

Users

Logs

Create User

Users


Search...

User accountant02 created!

Username	Password	Email Address	User Type	
manager01	m4n4g3r	manager@email.com	Manager	Edit
accountant01	4cc0unt	accountant@email.com	Accountant	Edit
administrator01	4dm1n	administrator@email.com	Administrator	Edit
accountant02	4cc0unt4nt	accountant2@email.com	Accountant	Edit

Figure 6-33 User Created

Log out



Administrator

Chart of Accounts

Users

Logs

Create User

Users

Search...

Username	Password	Email Address	User Type	
manager01	m4n4g3r	manager@email.com	Manager	Edit
a			Accountant	Edit
ad			Administrator	Edit

Edit User

Username

manager01

Password

m4n4g3r

Email Address

manager@email.com

User Type


Manager

Cancel

Edit

Figure 6-34 Edit User

Log out



Administrator

Chart of Accounts

Users

Logs

Create User

Users

Search...

User manager01 edited!

Username	Password	Email Address	User Type	
manager01	m4n4g3r	manager2@email.com	Manager	Edit
accountant01	4cc0unt	accountant@email.com	Accountant	Edit
administrator01	4dm1n	administrator@email.com	Administrator	Edit

Figure 6-35 User Edited




Log out

Administrator

Chart of Accounts


Users

Logs

FROM TO

Start Date  End Date 

Logs


of entries per page 5 

▼Log ID	Date/Time	From	To	User ID
L0000003	06/27/17 10:24AM	Account: Cash Subtype: Current	Account: Longterm Cash Subtype: Longterm	administrator01
L0000002	06/26/17 11:45AM	Nothing	Username: accountant02 Password: 4cc0unt4nt Email: accountant2@email.com User Type: Accountant	administrator01
L0000001	06/25/17 3:59PM	Nothing	Date: 04/07/18 Debit1: Cash Debit1 Amount: 100 Credit1: Notes Payable Credit1 Amount: 100 Description: "Took out loan" File1: invoice.png	accountant01

Prev. Page Next Page

Figure 6-36 Logs

Log out



Administrator

Chart of Accounts

Users

Logs

Go Back

L0000003

Log ID	Date/Time	From	To	User ID
L0000003	06/27/17 10:24AM	Account ID: 101 Account: Cash Account Type: Asset Subtype: Current Balance: 100 Active Status: Active	Account ID: 101 Account: Longterm Cash Account Type: Asset Subtype: Longterm Balance: 100 Active Status: Active	administrator01

Figure 6-37 Log Entry

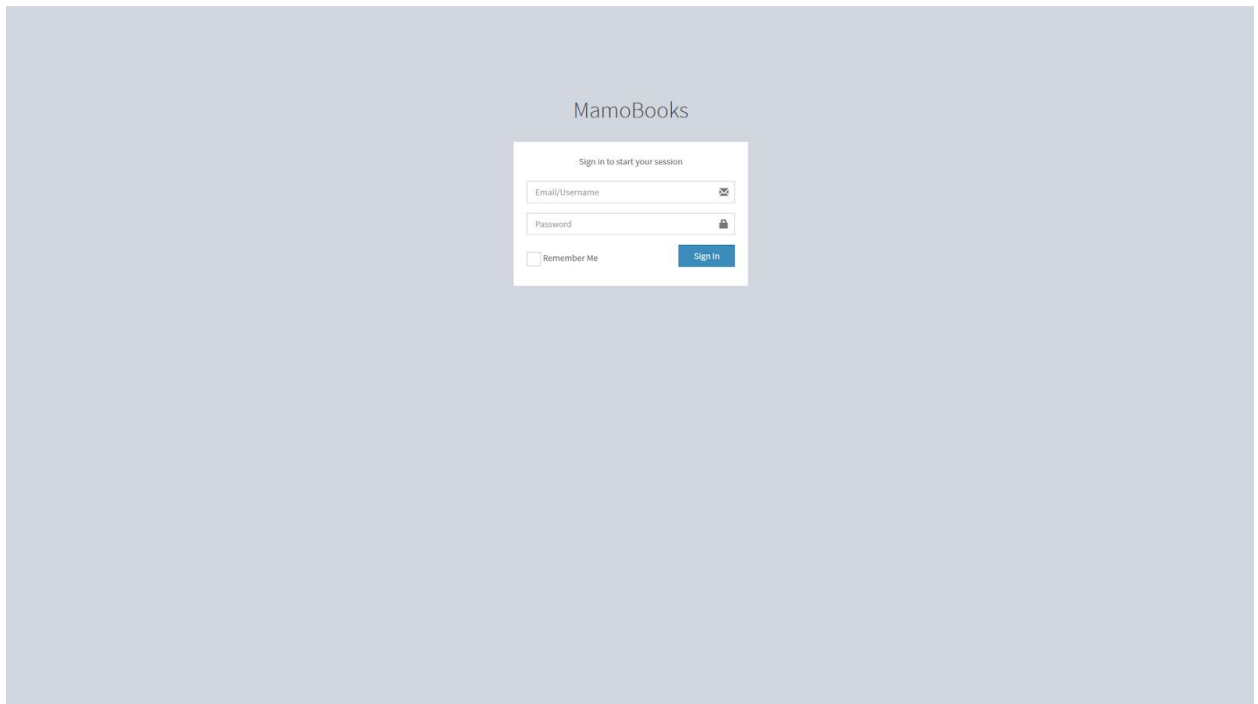


Figure 6-38 Final Login

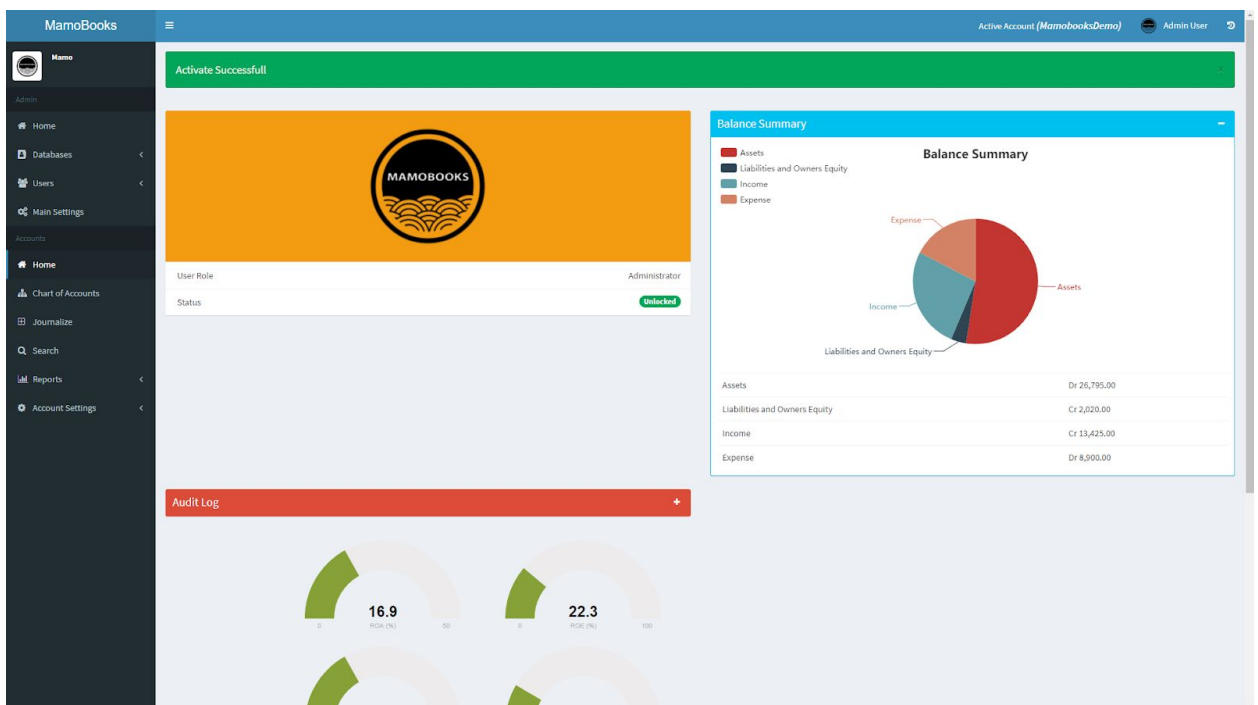


Figure 6-39 Final Dashboard

Mamo

<

Figure 6-40 Final Chart of Accounts

MamoBooks			Active Account (MamobooksDemo)		Admin User					
<div> <div> <div>Mamo</div> <div>Admin</div> <div> Home Databases Users Main Settings </div> </div> <div> <div>Accounts</div> <div> Home Chart of Accounts Journalize Search Reports Account Settings </div> </div> </div>										
<div> <div>Add Ledger</div> <div> <div>Parent Group</div> <div>[100] Assets</div> </div> <div> <div>Ledger Code</div> <div>101</div> </div> <div> <div>Ledger name</div> <div></div> </div> <div> <div>Notes</div> <div></div> </div> <div> <div>Cancel</div> <div>Submit</div> </div> </div>										
MamoBooks										

Figure 6-41 Final Create Account

Mamobooks Active Account (MamobooksDemo) Admin User

Edit Account

Parent Group: [101] Current Assets Ledger Code: 103 Ledger name: Accounts Receivable

Opening balance: Dr 0

☐ Bank or cash account ☐ Reconciliation

Notes

Cancel Submit

Figure 6-42 Final Edit Account

Mamobooks Active Account (MamobooksDemo) Admin User

Edit Group

Parent Group: [100] Assets Group code: 101 Group name: Current Assets

Cancel Submit

Figure 6-43 Final Edit Group

Mamo Active Account (MamabooksDemo) Admin User

Report - Ledger Statement

Ledger Account: [103] Accounts Receivable Start Date: End Date:

Ledger statement for [103] Accounts Receivable from 01-Jan-2018 to 31-Dec-2018

Date	Number	Tag	Amount (\$)	Amount (\$)	Balance (\$)	Actions
04-Apr-2018	Journal	Regular	Dr 1,500.00		Dr 1,500.00	View Edit Delete
08-Apr-2018	Journal	Regular		Cr 800.00	Dr 700.00	View Edit Delete
15-Apr-2018	Journal	Regular	Dr 2,250.00		Dr 2,950.00	View Edit Delete
22-Apr-2018	Journal	Regular	Dr 1,100.00		Dr 4,050.00	View Edit Delete
25-Apr-2018	Journal	Regular		Cr 1,600.00	Dr 2,450.00	View Edit Delete
29-Apr-2018	Journal	Regular	Dr 1,000.00		Dr 3,450.00	View Edit Delete

Mamabooks

Figure 6-44 Final Individual Ledger

Mamabooks Active Account (MamabooksDemo) Admin User

Search

Entries [Add Entry](#)

Show 10 entries

Date	Number	Ledger	Type	Tag	Status	Debit Amount	Credit Amount	Actions
04-Apr-2018	4	Dr [102] Cash	Journal	Regular	Approved	Dr 10,000.00		View Edit Delete
04-Apr-2018	4	Dr [103] Accounts Receivable	Journal	Regular	Approved	Dr 1,500.00		View Edit Delete
04-Apr-2018	4	Dr [104] Supplies	Journal	Regular	Approved	Dr 1,250.00		View Edit Delete
04-Apr-2018	4	Dr [152] Office Equipment	Journal	Regular	Approved	Dr 7,500.00		View Edit Delete
04-Apr-2018	4	Cr [301] Contributed Capital	Journal	Regular	Approved		Cr 20,250.00	View Edit Delete
04-Apr-2018	5	Dr [105] Prepaid Rent	Journal	Regular	Approved	Dr 4,500.00		View Edit Delete
04-Apr-2018	5	Cr [102] Cash	Journal	Regular	Approved		Cr 4,500.00	View Edit Delete
04-Apr-2018	6	Dr [106] Prepaid Insurance	Journal	Regular	Approved	Dr 1,800.00		View Edit Delete
04-Apr-2018	6	Cr [102] Cash	Journal	Regular	Approved		Cr 1,800.00	View Edit Delete
06-Apr-2018	7	Dr [102] Cash	Journal	Regular	Approved	Dr 3,000.00		View Edit Delete

Showing 1 to 10 of 67 entries

Previous 1 2 3 4 5 6 7 Next

Mamabooks

Figure 6-45 Final Journalize

Mamo Active Account (MamobooksDemo) Admin User

Add Journal Entry

Number: Date: Tag:

Document: No file selected. Status:

Dr/Cr	Ledger	Amount (\$)	Amount (\$)	Narration	Current Balance (\$)	Actions
Dr	<input type="text" value="Please Select Ledger"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>		
Cr	<input type="text" value="Please Select Ledger"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>		
Total		0	0			
Difference		-				

Note:

Mamobooks

Figure 6-46 Final Create Journal Entry

Mamobooks Active Account (MamobooksDemo) Admin User

Add Journal Entry

Number: Date: Tag:

Document: No file selected. Status:

Dr/Cr	Ledger	Dr Amount (\$)	Cr Amount (\$)	Narration	Current Balance (\$)	Actions
Dr	[102] Cash	10000.00			Dr 8875	
Dr	[103] Accounts Receivable	1500.00			Dr 3450	
Dr	[104] Supplies	1250.00			Dr 1020	
Dr	[152] Office Equipment	7500.00			Dr 9300	
Cr	[301] Contributed Capital		20250.00		Cr 20250	
Total		20250	20250			
Difference		-				

Note:

Mamobooks

Figure 6-47 Final Edit Journal Entry

Mamobooks Active Account (MamobooksDemo) Admin User

Advance Search

Ledgers **Entrytypes**

Entry Number

Condition **From**

Equal to From

Amount

Dr or Cr **Condition** **Amount**

(Any) Equal to

Date

From **To**

Tags

Status

Pending

Narration contains

Search

Figure 6-48 Final Search

Mamobooks Active Account (MamobooksDemo) Admin User

Report - Ledger Statement

Ledger Account

Please Select Ledger

Start Date **End Date**

Submit **Clear**

Figure 6-49 Final Ledger

Mamo

Active Account (MamobooksDemo)

Admin User

Report - Balance Sheet

Options

Export to PDFExport to XLSPrint

<

Figure 6-50 Final Balance Sheet

Mamo

Active Account (MamobooksDemo)

Admin User

Figure 6-51 Final Income Statement

Mamobooks Trial Balance For the Year Ending 01-Jan-2018				
Account Name	Type	O/P Balance (\$)	Debit Total (\$)	Credit Total (\$)
[100] Assets	Group	0.00	\$ 26,795.00	
[101] Current Assets	Group	0.00	\$ 17,395.00	
[103] Accounts Receivable	Ledger	0.00	\$ 3,450.00	
[102] Cash	Ledger	0.00	8,875.00	
[106] Prepaid Insurance	Ledger	0.00	1,650.00	
[105] Prepaid Rent	Ledger	0.00	3,000.00	
[104] Supplies	Ledger	0.00	1,020.00	
[150] Long-term Assets	Group	0.00	\$ 8,800.00	
[151] Accumulated Depreciation	Ledger	0.00		\$ 500.00
[152] Office Equipment	Ledger	0.00	\$ 9,500.00	
[200] Liabilities	Group	0.00		\$ 2,020.00
[201] Current Liabilities	Group	0.00		\$ 1,020.00
[202] Accounts Payable	Ledger	0.00		\$ 1,000.00
[203] Salaries Payable	Ledger	0.00		20.00
[202] Long term Liabilities	Group	0.00		\$ 1,000.00
[250] Unearned Revenue	Ledger	0.00		\$ 1,000.00
[300] Equity	Group	0.00		\$ 20,750.00
[301] Contributed Capital	Ledger	0.00		\$ 20,250.00
[302] Retained Earnings	Ledger	0.00	\$ 0.00	
[400] Revenue	Group	0.00		\$ 13,425.00
[401] Service Revenue	Ledger	0.00		\$ 13,425.00
[500] Expenses	Group	0.00	\$ 8,900.00	
[501] Advertising Expense	Ledger	0.00	\$ 120.00	
[507] Depreciation Expense	Ledger	0.00	500.00	
[505] Insurance Expense	Ledger	0.00	150.00	
[508] Rent Expense	Ledger	0.00	1,500.00	
[502] Salaries Expense	Ledger	0.00	5,320.00	
[506] Supplies Expenses	Ledger	0.00	980.00	
[503] Telephone Expense	Ledger	0.00	130.00	
[504] Utilities Expense	Ledger	0.00	200.00	
Total			Dr 36,195.00	Cr 36,195.00

Figure 6-52 Final Trial Balance

Statement of Retained Earnings	
Beg Retained Earnings, 04/01/18	\$ 0
Net Profit	4,525.00
Net Loss	0
Beg Retained Earnings, 04/30/18	<u>\$ 4,525.00</u>

Figure 6-53 Final Statement of Retained Earnings

6.3 Screen Objects and Actions

Button - Used to navigate between pages, normally used for confirmations or for functionality navigation such as editing, creating, or canceling.

Dropdown Box - Used to select between a pre-determined list of options.

Text Box - Used to type specific details, such as names or numeric amounts.

Tabs - Used for high-level site navigation, such as navigating between complete modules.

Tables - Used to display directly relevant information while allowing sorting.

Calendar Button - Used to display a dropdown calendar for date selection.

Hyperlink - Used to navigate to a page relevant to the hyperlinked text.

7. REQUIREMENTS MATRIX

System Component	Relevant Requirements
Chart of Accounts	INT.1.1 - INT.1.12 OPR.1.1 - OPR.1.15 DAT.1.1 - DAT.1.3
Journalizing	INT.2.1 - INT.2.13 OPR.2.1 - OPR.2.14 DAT.2.1
Posting	INT.3.1 - INT.3.4 OPR.3.1 DAT.3.1 and DAT.3.2
Financial Reporting	INT.4.1 - INT.4.12 OPR.4.1 - OPR.4.3 DAT.4.1
System Administration	INT.5.1 - INT.5.29 OPR.5.1 - OPR.5.11 DAT.5.1 - DAT.5.3