

Outline for the following rationales:

- A rationale for each technology used.
- A rationale for each system architecture used.
- A rationale for each design pattern used.
- A rationale for each major UI decision.

1. A rationale for each technology used.

a. Server:

i. Virtualhost: Amazon EC2 Cloud

1. Familiarity with developers
2. Free for 1 year with new accounts
3. Easy to use console
4. Highly secure
5. Great support
6. Great community

ii. Operating System: Linux Ubuntu Server 12.04 LTS

1. Highly Portable
2. Supports UNIX commands
3. Familiarity with developers
4. Easy setup
5. Great documentation
6. Free

iii. HTTP File Server: Apache HTTP Web Server

1. Simple setup
2. Familiarity with developers
3. Works well with Ubuntu Server
4. Mature
5. Free

iv. Database: MySQL

1. Relational Database
2. Supports SQL commands
3. Familiarity with developers
4. Open Source
5. Free
6. Supported by Oracle
7. Great community
8. Simple setup
9. Mature

v. Build Automation: Gradle

1. Simple to use for publishing java for the web
2. Supported by SpringIO
3. Great for testing
4. Great documentation

- 5. Simple setup
 - 6. Open source
 - 7. Free
 - vi. Backend Logic: SpringIO
 - 1. Modern java MVC framework
 - 2. Best documentation
 - 3. Great support
 - 4. Simple setup
 - 5. Active community
 - 6. Open source
 - 7. Free
- b. Client:
 - i. Client Logic: AngularJS
 - 1. MVC Architecture for client side frontend
 - 2. Familiarity with developers
 - 3. Support for plenty of third party AngularJS modules
 - 4. Allows real time data binding
 - 5. Extremely fast
 - 6. Allows fluid interactions that mimic native applications
 - 7. Highly flexible
 - 8. Open source
 - 9. Free
 - ii. Library: jQuery
 - 1. Need this library for Bootstrap
 - 2. Lots of functionality from third party plugins
 - 3. Great documentation
 - 4. Familiarity with developers
 - 5. Simple setup
 - 6. Open source
 - 7. Free
 - iii. Library: Bootstrap 3.0
 - 1. Expedites frontend design
 - 2. Expedites frontend UI interactions
 - 3. Familiarity with developers
 - 4. Simple setup
 - 5. Great documentation
 - 6. Highly flexible
 - 7. Open source
 - 8. Free
 - iv. Library: ChartsJS
 - 1. Javascript library to build charts
 - 2. Great documentation

3. Simple setup
4. Open source
5. Free

2. A rationale for each system architecture used.

- a. Client Server
 - i. Allows multiple clients to be active across different sessions
 - ii. Allows data to be stored within a centralized database
 - iii. Allows the same data to be accessed by multiple clients
 - iv. Allows support for multiple platforms
 - v. Allows flexibility for building future platform agnostic clients
- b. Four Tier
 - i. Allows modularization of code
 - ii. Promotes good practices for security
 - iii. Allows flexibility for building future platform agnostic clients
- c. Restful JSON
 - i. Allows simple parsing by frontend javascript
 - ii. Extremely fast
 - iii. Object oriented data structure

3. A rationale for each design pattern used.

- a. Model View Controller
 - i. Allows for modularization of code
 - ii. Great for maintenance
 - iii. Minimizes spaghetti code
 - iv. Promotes DRY (Don't repeat yourself) principles.
- b. Singleton
 - i. Great pattern for login sessions
 - ii. Great method for interactions for a current user

4. A rationale for each major UI decision.

- a. Having the menu navigation on the left side
- b. Each user has a has a unique dashboard
- c. A manager has charts from data as an overview
- d. Dropdown for categories on manager transactions
- e. Dropdown for type of transaction (Debit vs Credit)
- f.