

## 1. Introduction

- Professional movers are expensive.
- Characteristics of a move
  - Cost estimation
  - Keeping track of everything
  - Efficient space usage
  - Packing
  - Fragile items
  - Heavy items
  - Distance
  - Time frame
- Truck Loading takes careful consideration
- There are so many unknowns!

### 1.1. Purpose

- Software based solution
- Solution Characteristics
- Load Plan Generation
- Keep track of box throughout move
- Tips and tricks
- Cost/time optimization
- Goals and Objectives

### 1.2. Scope

- Measuring an item
- 3d model generation
- Box locator
- Load plan
- Trip estimation
- Packing tips
- Expert articles
- Move feedback
- Case Study
  - Identify the actors involved
  - Give them names
  - Consider moving case study paragraph here

### 1.3. Definitions, Acronyms, and Abbreviations

- Paste from lab one.

### 1.4. References

- Paste from lab one.
- Add reference to lab 1 for each individual

### 1.5. Overview

- Listing of what's in the paper.

## 2. General Description

- Overview paragraph here
- 2.1. Prototype Architecture (Hardware/Software)
  - Key components
    - Ubuntu 16.04 Virtual Machine
    - Docker
      - Apache tomcat
      - CXF for web API
      - MySQL
    - UI
      - Android app interface
      - Test harness interface
  - Provide and describe the prototype MFCD [Insert MFCD here]
  - Algorithms and user interfaces
    - Flush this out some more [TODO]
    - Load Plan Algorithm
    - ...
- 2.2. Prototype Features and Capabilities
  - Discuss features
  - Insert prototype features table
  - Describe Algorithms and user interfaces here
    - Might include some diagrams like site map
- 2.3. Prototype Development Challenges
  - Test Harness changing values in the database
  - Changing truck sizes
  - Changing move inventory
  - Prioritizing search results for expert tips
  - Multiple trips
  - Dealing with edge cases
- 2.4. External Interfaces
  - We have no major interfaces with prototype
  - Talk about the simulated data from the vendor synchronization
- 3. Specification Requirements
  - 3.1. Functional Requirements
    - 3.1.1. Android Application

- 3.1.1.1. Login (Byron)
  - 3.1.1.2. Registration (Byron)
  - 3.1.1.3. Reset Password (Byron)
  - 3.1.1.4. Box Locator (Greg)
  - 3.1.1.5. Furniture/Item Measurement (Jason)
  - 3.1.1.6. Load Plan (Byron)
  - 3.1.1.7. Logistics Planning (Greg)
  - 3.1.1.8. Move Inventory (Chris)
  - 3.1.1.9. Authentication (Byron)
  - 3.1.1.10. Expert Tips (Lance)
  - 3.1.1.11. Expert Articles (Paul/Lance)
  - 3.1.1.12. Feedback (Paul)
- 3.1.2. Test Harness
  - 3.1.2.1. Sample Move Inventory (Chris)
  - 3.1.2.2. New Truck Size (Greg)
- 3.1.3. Algorithms
  - 3.1.3.1. Box Measurements (Jason)
  - 3.1.3.2. Load Plan (Jason)
  - 3.1.3.3. 3D model generation (Jason)
  - 3.1.3.4. Expert Tips (Lance)
- 3.1.4. Database (Lance)
- 3.1.5. Web API
  - 3.1.5.1. Authentication (Byron)
  - 3.1.5.2. Expert Tips Indexer (Paul)
  - 3.1.5.3. Services (Paul)
- 3.2. Performance Requirements
  - 3.2.1. App Load Time (Paul)
  - 3.2.2. General Action Response Time (Lance)
  - 3.2.3. Load Plan Generation (Jason)
  - 3.2.4. Android Compatibility (Lance)
- 3.3. Assumptions and Constraints
  - 3.3.1. Items Larger than Truck (Chris)
  - 3.3.2. Extremely Heavy Objects (Chris)
  - 3.3.3. Dimensions of a Truck
  - 3.3.4. Rotation of items
  - 3.3.5. Couches and how they go in the truck (jk)
  - 3.3.6. Will have fine china (jk)
- 3.4. Non-Functional Requirements
  - 3.4.1. Server Setup (Greg)
  - 3.4.2. Containers (Greg)
  - 3.4.3. Security

- 3.4.3.1. Encryption (Chris)
- 3.4.3.2. Authorization (Chris)
- 3.4.3.3. Public Facing Resources (Greg)
- 3.4.4. Maintainability (Lance)
- 3.4.5. Reliability (Byron)

## **Appendix**