Project Plan

ThreadCount

Developed for **Nicholas duchon**

CMSC 495

Jennifer Prizeman, ian Chrisman, Justin Jennings, edward caro, Shawn thompson, colin crowley

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Revision History

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| **Revision #** | **Revision Date** | **Document Name** | **Changes** |
| 0.1 | October 31, 2016 | Project Plan | Initial Project Plan Created |
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# 1. Requirements Specification

This section will list, in detail, the project objectives, product background, user profile, assumptions, constraints, deliverables, and product outline.

## Purpose, Scope, and Objectives

The objective of the ThreadCount program is to provide software to increase the efficiency of personnel. In particular, those who manage small clothing boutiques. By providing a software application to manage inventory, sales, and customer information, the program will save time and effort for the user. Inventory and balance will be adjusted in the database each time the user enters a transaction. The user interface will enable the application user to display various reports about sales, customer, and inventory data. These reports will give the salesperson pertinent information, such as their current inventory and shipment information.

The product for delivery should include:

1. Software package consisting of:
   1. Main GUI
   2. Item Creator
   3. Supplier Creator
   4. Shipment Creator
   5. Inventory Display
   6. Customer Display
   7. Report Builder
2. User guide and manual

Successful delivery of these features is dependent on testing acceptance after the software has passed key milestones where the software is versioned (alpha, beta, version 1.0).

## Project Background

The direct sales model is making a comeback. With social media being widely available, the sales and marketing opportunities to sell products to friends and acquaintances has exploded. This has made it easier now than ever to start and run a home business. This is a particularly attractive idea for stay at home parents seeking to supplement family income and have fun at the same time. However, these homes are rarely equipped with business class IT infrastructure or software to help run the business. While inexpensive software exists for generic tasks such as accounting and taxes, these new business owners lack the ability to properly track inventory, and create important reports that help run the business. Our project will create a simple, inexpensive solution to help these new businesses flourish.

## User Profile

Sheri McCoy, the CEO of AVON products, explained “[Our Founder David H. McConnell] understood that women were natural salespeople who could easily relate to other women and passionately market beauty products.” Likewise, and based on our research, the largest demographic for creating new direct sales businesses are women aged 22-40. They are typically suburban Generation X or Millennials. Additionally, our target users are from affluent households with enough disposable income to purchase sufficient inventory to launch the business. However, we see the lure of opening a business decline the wealthier that family is. As a result, the average income for the target audience has incomes roughly in the range of $50k - $150k per year. These are important considerations when considering several aspects of the software solution. First, the application’s look and feel should appeal to young women. Second, the complexity should be very low, as this would drive up the cost of the software and become ultimately unaffordable to the target group. Ideally, the software will cost around $10 per month. Lastly, this segment is not typically formally trained with IT products, so the software should be very easy to use and navigate.

## Assumptions and Constraints

For the development of the software, it is assumed that an information technology (IT) deployment exists in order for the software to be installed. This system is not provided with the software, and is out-of-scope of the requirements.

Additionally, the development of the software is designed around portability. By focusing on the use of Java language and minimizing the user interface requirements, this software can be portable to almost all operating system platforms.

Assumptions for the software are minimal due to the lean design process. Where appropriate, the development team shall use free and open-source software to accelerate development, and make use of libraries for specific functions, such as database connectivity.

It is assumed the end users will not be familiar with information security best practices and will use the software to store private customer information and business sales information. The development team will evaluate these functional requirements to establish appropriate system security constraints in order to ensure confidentiality, integrity and availability of the information.

## Project Deliverables

Project deliverables for the software package are focused on the following:

1. Software package consisting of:
   1. Main GUI
   2. Item Creator
   3. Supplier Creator
   4. Shipment Creator
   5. Inventory Display
   6. Customer Display
   7. Report Builder
2. User guide and manual

The software delivery will consist of a Java application with executable shell scripts for Mac OS and Microsoft Windows. This software will also contain an example configuration file for database connectivity, with configuration options for MySQL. The software will be made available for download electronically for customers wishing to receive digital media. The user guide will be delivered via electronic download as well, in the form of a Microsoft Word or PDF document.

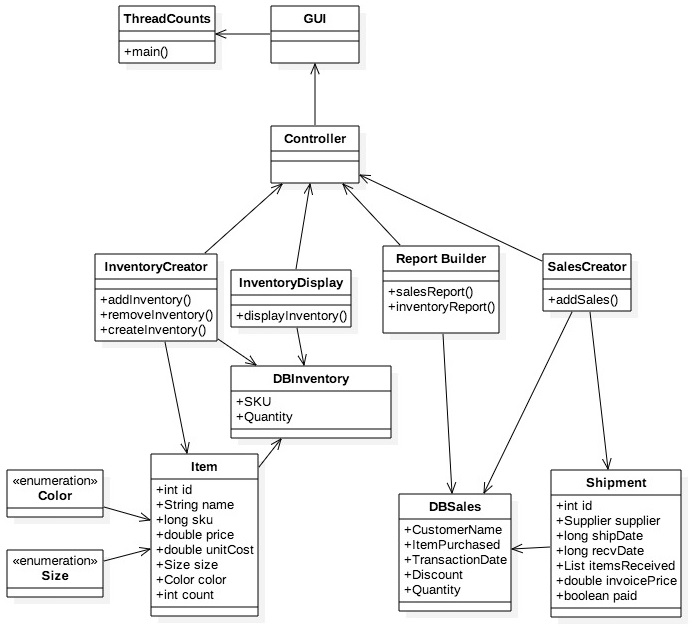
## Project Outline

The basic outline of the ThreadCount application will be as follows:

* GUI Code – Will be generic, calling methods in other classes and passing data.
* Two creator classes; Inventory and Sales
* Basic setup of database(s):
  + Inventory Table columns: include SKU, Style, Size, Wholesale Price, Retail Price, Quantity
  + Sales Table columns: Table key/transaction number, Date, Customer Name, Item purchased, Sales Balance, Address, Email

### 1.6.1 UML Diagram

The UML diagram below depicts the relationships and dependencies among classes for the project’s source code.



***Figure 1. UML diagram***

### 1.6.2 MySQL Tables

This project will use a MySQL database to store its data. It will consist of the following tables, plus tables representing a ‘warehouse’, and a ‘shop floor’. Below are the schemas for the ‘item’, ‘supplier’, ‘shipment’, and inventory manifest tables.

**Table Schemas:**

*Item:*

+-----------+---------------+------+-----+---------+----------------+

| Field     | Type          | Null | Key | Default | Extra          |

+-----------+---------------+------+-----+---------+----------------+

| id        | int(11)       | NO   | PRI | NULL    | auto\_increment |

| name      | varchar(50)   | YES  |     | NULL    |                |

| sku       | bigint(20)    | YES  |     | NULL    |                |

| price     | decimal(10,2) | YES  |     | NULL    |                |

| unit\_cost | decimal(10,2) | YES  |     | NULL    |                |

| size      | varchar(10)   | YES  |     | NULL    |                |

| color     | varchar(10)   | YES  |     | NULL    |                |

| count     | int(11)       | YES  |     | NULL    |                |

| photo\_uri | varchar(50)   | YES  |     | NULL    |                |

+-----------+---------------+------+-----+---------+————————+

*Supplier:*

+--------------+---------------+------+-----+---------+----------------+

| Field        | Type          | Null | Key | Default | Extra          |

+--------------+---------------+------+-----+---------+----------------+

| id           | int(11)       | NO   | PRI | NULL    | auto\_increment |

| company\_name | varchar(50)   | YES  |     | NULL    |                |

| poc\_name     | varchar(50)   | YES  |     | NULL    |                |

| poc\_email    | varchar(50)   | YES  |     | NULL    |                |

| phone\_num    | varchar(15)   | YES  |     | NULL    |                |

| fax\_num      | varchar(15)   | YES  |     | NULL    |                |

| amt\_payable  | decimal(10,2) | YES  |     | NULL    |                |

+--------------+---------------+------+-----+---------+————————+

*Shipment:*

+-------------+---------------+------+-----+---------+----------------+

| Field       | Type          | Null | Key | Default | Extra          |

+-------------+---------------+------+-----+---------+----------------+

| id          | int(11)       | NO   | PRI | NULL    | auto\_increment |

| supplier\_id | int(11)       | YES  |     | NULL    |                |

| shipdate    | date          | YES  |     | NULL    |                |

| recvdate    | date          | YES  |     | NULL    |                |

| invoice\_amt | decimal(10,2) | YES  |     | NULL    |                |

| paid        | tinyint(1)    | YES  |     | NULL    |                |

+-------------+---------------+------+-----+---------+————————+

*Manifest:*

+-------------+---------+------+-----+---------+----------------+

| Field       | Type    | Null | Key | Default | Extra          |

+-------------+---------+------+-----+---------+----------------+

| id          | int(11) | NO   | PRI | NULL    | auto\_increment |

| shipment\_id | int(11) | YES  |     | NULL    |                |

| item\_id     | int(11) | YES  |     | NULL    |                |

| count       | int(11) | YES  |     | NULL    |                |

+-------------+---------+------+-----+---------+————————+

### 1.6.3 MySQL Queries

Below are some examples of the kinds of SQL queries that will be run on these tables in order to get meaningful information to the user.

**SQL Queries:**

*Show the items in a particular shipment:*

mysql> select sp.company\_name, i.name, i.count, s.recvdate from shipment s join manifest m on s.id=m.shipment\_id join item i on i.id=m.item\_id join supplier sp on sp.id=s.supplier\_id where s.id=3;

+-----------------------+----------------------+-------+------------+

| company\_name          | name                 | count | recvdate   |

+-----------------------+----------------------+-------+------------+

| china sweatshop, inc. | Argyle socks         |     9 | 2016-11-04 |

| china sweatshop, inc. | I (heart) NY T-shirt |    14 | 2016-11-04 |

| china sweatshop, inc. | Revi Jeans           |     9 | 2016-11-04 |

+-----------------------+----------------------+-------+------------+

3 rows in set (0.00 sec)

*Show the items from a particular supplier:*

mysql> select sp.company\_name, i.name, i.count, s.recvdate from shipment s join manifest m on s.id=m.shipment\_id join item i on i.id=m.item\_id join supplier sp on sp.id=s.supplier\_id where sp.id=2;

+--------------+-----------------+-------+------------+

| company\_name | name            | count | recvdate   |

+--------------+-----------------+-------+------------+

| grunge, llc  | Argyle socks    |     9 | 2016-11-03 |

| grunge, llc  | Nirvana T-shirt |    34 | 2016-11-03 |

+--------------+-----------------+-------+------------+

2 rows in set (0.00 sec)

*Show the amount still due for shipments:*

mysql> select sp.company\_name, invoice\_amt from shipment s join supplier sp on s.supplier\_id=sp.id where s.paid=0\g

+-----------------------+-------------+

| company\_name          | invoice\_amt |

+-----------------------+-------------+

| grunge, llc           |     4802.87 |

| china shop, inc. |     8734.65 |

+-----------------------+-------------+

2 rows in set (0.00 sec)

# 2. System Specification

This section will list the required hardware and software that will be used to complete the ThreadCount application.

## 2.1 Hardware

* Hardware consisting of:
  + Windows PC
  + MacBook Air using Mac OS

## 2.2 Software

* Software consisting of:
  + Language – Java SE Development Kit (JDK) 8 and associated libraries
  + Database Implementations – MySQL
  + Integrated Development Environment (IDE) – NetBeans 8.1
  + Source Code Repository – GitHub
  + Documentation – Microsoft Word and Adobe Acrobat

# 3. Project Plan

The project plan provides an outline of key milestones, key roles, upcoming tasks, schedule, test plan, and error handling.

## 3.1 Key Milestones

Milestones will be structured so that they coincide with the weekly required documents due.

| **Weekly Document Requirements** | **Due Date** | **Assigned to** |
| --- | --- | --- |
| Project Plan | November 6, 2016 | Edward/Jennifer |
| Test Plan (Front End) | November 13, 2016 | Edward |
| Test Plan (Back End) | November 13, 2016 | Colin |
| User Guide | November 13, 2016 | Shawn |
| Design | November 20, 2016 | Edward/Jennifer |
| Phase I Source Documentation | November 27, 2016 | Group |
| Phase II Source Documentation | December 4, 2016 | Group |
| Phase III Source Documentation | December 11, 2016 | Group |
| Final Documentation | December 18, 2016 | Edward/Jennifer |

***Figure 2. Document Milestones***

| **Project Milestones** | **Due Date** | **Assigned to** | **Complete Y / N** |
| --- | --- | --- | --- |
| Create User Profile | November 4, 2016 | Shawn | Y |
| Create Product Background Info | November 4, 2016 | Shawn | Y |
| Create UML Diagram | November 5, 2016 | Ian | Y |
| Create GUI Sketch | November 6, 2016 | Shawn | Y |
| Create database with test data | November 13, 2016 | Justin | N |
| Display inventory from test database | November 15, 2016 | Ian | N |
| Display different report types from database | November 15, 2016 | Ian/Justin | N |
| Enter information into database | November 17, 2016 | Justin | N |
| Modify information in database | November 25, 2016 | Ian | N |
| Display inventory from real database | December 1, 2016 | Justin | N |
| Display different types of reports from real database | December 1, 2016 | Ian | N |
| Backup and encrypt database information | December 8, 2016 | Colin | N |

***Figure 3. Project Milestones***

## 3.2 Key Roles

There are six members on this project: Jennifer Prizeman, Ian Chrisman, Justin Jennings, Edward Caro, Shawn Thompson, and Colin Crowley. Each member of the team is assigned a specific lead role along with assisting others on various aspects during the development cycle of the project. Each team member's specific lead role is given in *Figure 4*, below, along with additional duties which are italicized.

| **Roles** | **Name** | **Contact Info** |
| --- | --- | --- |
| Project Manager / *Documentation* | Jennifer Prizeman | jennifer.prizeman@gmail.com |
| Lead Front End Coding | Ian Chrisman | ichrisman@student.umuc.edu |
| Lead Back End Coding | Justin Jennings | justin.robert.jennings@gmail.com |
| Documentation / *Front End Testing* | Edward Caro | edward.m.caro@gmail.com |
| User Guide / *Front End Coding* | Shawn Thompson | stt9000@gmail.com |
| Security / *Back End Coding* / *Back End Testing* | Colin Crowley | colin.t.crowley@gmail.com |

***Figure 4. Team Roles***

## 3.3 Upcoming Tasks and Schedule

Listed below are the upcoming tasks for the week.

* November 3: Review and finalize Project Plan
* November 4-5: Discuss and submit any modifications to Project Plan
* November 6: Submit Project Plan to UMUC Assignments Folder
* November 8: Draft versions of User Guide and Test Plan shared with group
* November 9-10: Group evaluates and discusses draft User Guide and draft Test Plan
* November 10: Class (1st half) - review and finalize User Guide and Test Plan; (2nd half) - discuss assignment due Sunday 11/20 and responsibilities for drafts due Tuesday 11/15
* November 11-12: Discuss and submit any modifications to User Guide and Test Plan
* November 13: Submit final User Guide and Test Plan to UMUC Assignments Folders

## 3.4 Test Plan and Error Handling

Below are possible situations for upcoming Test Plan and User’s Guide assignment.

* Selling more inventory than is in inventory (overselling)
* Changing price / sales / discounts
* Modifying entry in database
* Handling incorrect entries. For example, anything other than numerical input for price, numerical input for customer name, etc.
* Backing up customer and inventory databases
* Restoring customer and inventory databases from backup
* Encrypting/decrypting customer database information