Green Thumb

a web app for Lawn Service companies



Test Plan

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# 1. Introduction

## 1.1 Objectives

The following document will provide a comprehensive framework for testing the agile cloud-based Green Thumb Lawn Service Software (GTLSS) package. The testing framework will involve two primary levels; the UI design and functionality for the customers and client and the database functionality for the client. The team will utilize three different kinds of testing methodologies; black-box, white-box, and gray-box. The black-box testing methodology will involve testing the UI design and functionality. The white-box testing will involve the code coverage and path coverage of the UI. The gray-box testing will be utilized before the release of the software package to ensure all the UI design and functionality meets the requirements.

## 1.2 Background

The agile cloud-based GTLSS package is an online portal facilitating Business-to-Consumer (BC2) transactions. The GTLSS package will provide efficiency in customer and business interaction by reducing the need for personal interaction through the automating of services and products for delivery. The GTLSS package will also provide employee, equipment, inventory, and scheduling management for the business which will further increase efficiency for the business by reducing the need for clerical work thus increasing revenue. In the following Testing Plan document, analysis of the UI design and functionality along with database functionality will be tested to ensure the development of GTLSS for the business and consumer to reach the highest efficiency and profit margin.

## 1.3 Scope

The scope of the testing for the GTLSS package will involve testing cases specifics for the three modules of the architectural context diagram:

1. User Interface (UI) – Section 2.1
2. Services – Section 2.2
3. Domain Objects – Section 2.3

Out-of-Scope for GTLSS package will be testing for security protocols, assignment of specific employee or equipment for scheduling, real interaction with payment collection, bookkeeping.

## 1.4 References

References for the software test specification include:

1. IEEE std. 829-1998-IEEE Standard for Software Documentation
2. Software Requirement Specification (SRS) for GTLSS
3. Software Design Document (SDD) for GTLSS

# 1.5 Testing Environment

The testing environment for GTLSS will be moderate due to the involvement of other components such as web server, web server software, browser compatibility, and database communication. So, the testers will limit their scope to functionality of the UI on two major browsers platformers Google and Firefox for the desktop along with communication of the database to the website.

### 1.5.1 Software

The GTLSS package will run from the cloud requiring minimal installation for the business to a Windows or Linux operating system. The GTLSS package will require access to a database software package like Windows Database or MySQL for the purpose of the business to perform database updates on employee, equipment, and calendar (Business holidays).

### 1.5.2 Hardware

A desktop or laptop with the following hardware requirements; **Operating Systems**: Windows 7, 8 or 10, **Processor**: Intel Core i7, **Hard Drive**: 256GB Solid State, **Monitor Resolution**: 1024x768, and **Memory**: 8GB RAMs. If working with desktop include a keyboard and mouse.

### 1.5.3 Communication

Networking requirements for GTLSS package will require secure protocols with SSL (Secure Sockets Layer) and TLS (Transport Layer Security) by the business. For the purpose of the testers, networking will be performed over TCP/IP protocols. The GTLSS package will require minimal internet speeds of 384kbps along with dedicated ports.

### 1.5.4 Tools

The testing environment will consist of hardware able to access different web browsers. Since, the UI and the application layer of the GTLSS package will not designed for public use, their access will be limited to the testers. Thus, all the team members as testers will have administrative rights to the UI and database. As a result, the testers will ensure UI functionality for the customer and business and MySQL database.

### 1.5.5 Data

The testers of the GTLSS package should be prepared with the following data in order to complete the use cases for performing UI functionality in Section 4 of the STS:

1. Inventory data with pricing
2. Products
3. Annuals
4. Perennials
5. Vegetables
6. Mulch
7. Soil
8. Trees
9. Shrubs
10. Fertilizer
11. Services data with pricing
12. Mowing
13. Tree trimming
14. Shrub trimming
15. Lawn fertilization
16. Snow removal
17. Spring Clean-Up
18. Fall Clean-Up
19. Tree and Shrub Fertilization
20. Calendar

a. Non-overlapping for successful delivery and services requested

b. Overlapping of date when employee and equipment is maximized.

1. Customer data
   1. Names (first, last)
   2. Address (Street, state, and zip code)
   3. Dummy credit card information (valid and invalid formats)
   4. Dummy phone numbers (valid and invalid formats)
2. Employee
3. Name (First, Last)
4. Equipment
5. Name (push mowers, riding mower, snow blower, rakes etc..)
6. UI functionality
7. Verify browser combability
8. Launching the site on different browsers i.e. Google & Firefox
9. Verify navigation bar is visible
10. Verify all links are represent
11. Email
12. Verify all text is clearly visible
13. Logo
14. Product description
15. Content for each page
16. Verify images are loading
17. Verify products page have add to cart button
18. Verify each page has a back to top feature
19. Verify text boxes are visible for contact page
20. Functional Testing
21. Verify all pages have correct links
22. Verify email link will open composition for user
23. Verify add to cart button
    1. Adds items from the services and product page to checkout page
24. Verify checkout

The set of data listed will accommodate the entirety of test cases across the UI, service and domain objects cases listed for the Test Plan for GTLSS.

# 2. Architectural Context Diagram Mappings

## 2.1 User Interface

Figure 1. will provide the architectural design through the user perspective i.e. the customers and the business manager for the GTLSS package. Access for the customer will come from the website part of GTLSS. The business manager will have access via cloud for maintenance of the database for employee, equipment, inventory, and calendar.

Insert Diagram

## 2.2 Services

Figure 2 will provide the business logic processes for the GTLSS package when domain objects are involved, such as looking up employee, equipment, inventory, and date availability. The service module provides output to the UI and input by the business manager into the SQL database for the purpose of managing domain objects

Insert Diagram

## 2.3 Domain Objects

Figure 3 will cover all entities that hold data in GTLSS for the purpose of producing the output of a confirmation for the customer. The objects holding the data will be referred to as domain objects.

Insert Diagram

# 3. Traceability Matrix

The traceability matrix will provide a linkage between the initial software requirements (SRS) and software design (SDD) to the testing (STS) use cases for the GTLSS package. By utilizing the traceability matrix accountability on the testing framework can be measured as pass/fail.

Insert Matrix

# 4. Test Case Specifications

Test case are provided for the three core modules of the GTLSS package identified in section 2. The tests constitute completion of steps to validate black-box testing of UI design and functionality and white-box testing of the code and path coverage of the UI. The test case specifications are a derivative of both the SRS and SDD documents for the GTLSS engineering process.

## 4.1 User Interface Test Cases

The following test cases are designed for interactive testing of the GTLSS package through the User Interface (UI) and will be verified by the testing team.

(The following test cases will be added below for the user interface)

## 4.2 Services Test Cases

The service test cases will be designed to test the programming of the UI for the GTLSS package. The testing team will...

(The following test cases will be added below for the testing of the code)

## 4.3 Domain Object Test Cases

The test case will be designed to test the data encapsulation and storage portion of the GTLSS package. The testing team will...