Green Thumb

a web app for Lawn Service companies



Test Plan

Trimpin, Sattar, Woolman

CMSC495 Current Trends

University of Maryland, University College

March 23,2019

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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
2. Products data with pricing
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 of 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, Salary)
4. Equipment
5. Name (push mowers, riding mower, snow blower, rakes etc..)
6. Description
7. UI functionality
8. Verify browser compatibility
9. Launching the site on different browsers i.e. Google & Firefox
10. Verify navigation bar is visible
11. Verify all links are represent
12. Email
13. Verify all text is clearly visible
14. Logo
15. Product description
16. Content for each page
17. Verify images are loading
18. Verify products page have add to cart button
19. Verify each page has a back to top feature
20. Verify text boxes are visible for contact page
21. Functional Testing
22. Verify all pages have correct links
23. Verify email link will open composition for user
24. Verify add to cart button
    1. Adds items from the services and product page to checkout page
25. 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.

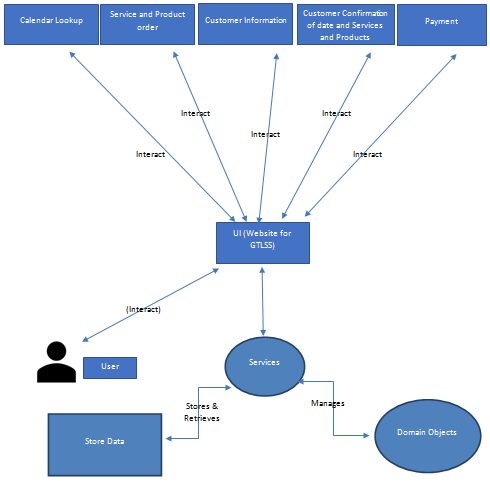
# 

# 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.

**Figure 1. Architectural Context Diagram – User Interface**



## 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.

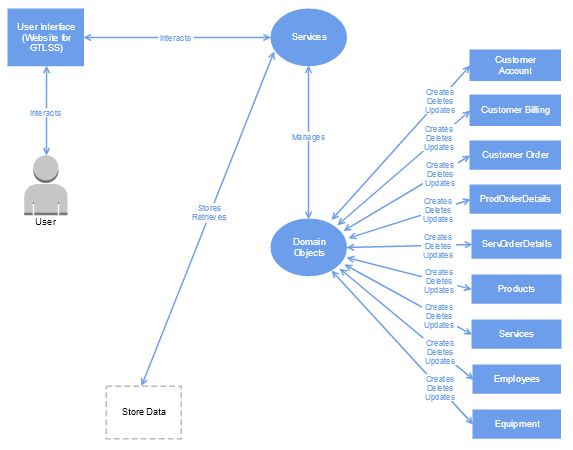
**Figure 1. Architectural Context Diagram – Services**

## 

## 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.

**Figure 3. Architectural Context Diagram – Domain Objects**



# 3. Traceability Matrix

The traceability matrix (Table 1) 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.

**Table 1. Traceability Matrix**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Category** | **Requirement Description** | **Requirement Type** | **Test Case** | **Pass/Fail** |
| 1 | User Interface | Home Index page loads for GTLSS | Front-end | 4.1.1 |  |
| 2 | User Interface | Navigation Bar displays on each page of the website. | Front-end | 4.1.2 |  |
| 3 | User Interface | Navigation Bar is functional and links to each page | Back-end | 4.1.3 |  |
| 4 | User Interface | Content description loads on each page | Front-end | 4.1.4 |  |
| 5 | User Interface | Content images display on each page | Front-end | 4.1.5 |  |
| 6 | User Interface | Website links to email composition for customers | Back-end | 4.1.6 |  |
| 7 | User Interface | Contact page loads with text boxes to enter customer information and comments | Front-end | 4.1.7 |  |
| 8 | User Interface | Services page loads description of services with add to cart functionality | Front-end | 4.1.8 |  |
| 9 | User Interface | Products page loads description of products for sale with add to cart functionality | Front-end | 4.1.9 |  |
| 10 | User Interface | The “add to cart” button functionality works to move services items selected to cart | Back-end |  |  |
| 11 | User Interface | The “add to cart” button functionality works to move product items selected to cart | Back-end |  |  |
| 12 | Services | Validate inventory | Back-end |  |  |
| 13 | User Interface | Inventory "sold out” display on add cart button | Front-end |  |  |
| 14 | User Interface | Cart icon is functional and displays service and product items on the checkout form | Front-end |  |  |
| 15 | User Interface | Admin Button displays on each page of the website | Front-end |  |  |
| 16 | User Interface | The "Admin Portal" button redirects to DBMS for data input by the Business Manager | Back-end |  |  |
| 17 | Domain Object | Business Manager inputs new products/supplies/equipment/employees data on the Admin Portal and the data gets inputted into the corresponding DB tables | Back-end | 4.3.1 |  |
| 18 | Domain Object | Business Manager retrieves products/supplies/equipment/employees data on the Admin Portal and the correct data gets pulled from the DB table and displayed to the manager | Back-end | 4.3.2 |  |
| 19 | Domain Object | Business Manager updates products/supplies/equipment/employees data on the Admin Portal and the data gets updated in the corresponding DB tables | Back-end | 4.3.3 |  |
| 20 | Domain Object | Business Manager deletes products/supplies/equipment/employees data on the Admin Portal and the correct data gets removed from the corresponding DB tables | Back-end | 4.3.4 |  |
| 21 | Domain Object | Customer User orders Services/Products and the order data gets stored into the CustomerOrders, ProdOrderDetails, and ServOrderDetails DB tables | Back-end | 4.3.5 |  |
| 22 | Domain Object | Customer User inputs customer information (name, address, etc.) and this data gets stored into the CustomerAccount DB table | Back-end | 4.3.6 |  |
| 23 | Domain Object | Customer User inputs billing information (credit card type, number, etc.) and this data gets stored into the CustomerBilling DB table | Back-end | 4.3.7 |  |
| 24 | Services | Validate correct data input for the database by the Business Manager | Back-end |  |  |
| 25 | Services | Numerical calculation performed for display in the checkout form of services and products. | Back-end |  |  |
| 26 | User Interface | Numerical representation of the total for services and products added to cart is displayed | Front-end |  |  |
| 27 | User Interface | Check out form displays a "submit" button | Front-end |  |  |
| 28 | User Interface | Customer presses the "submit" button to open the customer billing form | Front-end |  |  |
| 29 | User Interface | Customer billing form loads and displays text boxes for input by customer | Back-end |  |  |
| 30 | User Interface | Customer input (name, address, phone number, email, credit card information) | Front-end |  |  |
| 31 | Services | Customer input is validated that the correct string, numeric and character values for input for each data field | Back-end |  |  |
| 32 | User Interface | Validation is made a "submit" button is loaded and displayed | Back-end |  |  |
| 33 | User Interface | Customer presses the "submit" button | Front-end |  |  |
| 34 | Services | Assign a Customer ID | Back-end |  |  |
| 35 | User Interface | Calendar displays on check form | Front-end |  |  |
| 36 | User Interface | Customer assigns date | Front-end |  |  |
| 37 | Services | Validate date for customer | Back-end |  |  |
| 38 | Services | Invalidate date after the 20th Customer ID | Back-end |  |  |
| 39 | User Interface | Confirmation display of delivery date | Front-end |  |  |

# 4. Test Case Specifications

The test cases are provided for the three core modules for the GTLSS package which is covered in section 2. The test will constitute the completion of steps to validate both the User Interface and DBMS for employees, equipment, and inventory. The test cases will validate all requirements are being meet from the Project Plan Document.

## 4.1 User Interface Test Cases

The test cases for the User Interface (UI) are designed to prove the UI design and functionality meet the requirements for the GTLSS package.

**4.1.1 Specification ID: GTLSS-UI-01**

**Objective:** The objective of the test case is to provide a black-box test for the UI. Home page is loading to the web browser as required by the section of Project Plan Document section 1.3.1.

**Test Items:** The test will emulate a customer loading the Home Page for the GTLSS package.

**Input Specifications:**

1. Copy file address to the **URL**.
2. Press enter.

**Output Specifications:**

1. Home page contents are displayed; navigation bar, images, email, and description.

**Environmental Needs:**

1. Laptop or Desktop with keyboard and mouse.
2. Web browser
3. Operating system with GTLSS files installed.

**Special Procedural Requirements:**

n/a

**Inter-case Dependencies:**

The GTLSS file package and the web browser.

**4.1.2 Specification ID: GTLSS-UI-02**

**Objective:** The objective of the test case is to provide a black-box test for the UI. Navigation bar is loading on each page required by the section of Project Plan Document section 1.3.1.

**Test Items:** The test will emulate a customer loading the Home Page which should display the navigation bar for the GTLSS package.

**Input Specifications:**

1. Copy file address to the **URL**.
2. Press enter.

**Output Specifications:**

1. The navigation displays on each page of the GTLSS website i.e. Home page, Services page, Landscaping supplies page, Landscaping tips page, Contact page, About Us, and Cart page.

**Environmental Needs:**

1. Laptop or Desktop with keyboard and mouse.
2. Web browser
3. Operating system with GTLSS files installed.

**Special Procedural Requirements:**

n/a

**Inter-case Dependencies:**

The GTLSS file package and the web browser.

**4.1.3 Specification ID: GTLSS-UI-03**

**Objective:** The objective of the test case is to provide a black-box test for the UI. The Navigation bar functionality is linking to each of the site pages required by the section of Project Plan Document section 1.3.1.

**Test Items:** The test will emulate a customer pressing navigation bar items which will redirect to the site page chosen.

**Input Specifications:**

1. Press navigation bar items i.e. Home page, Services page, Landscaping supplies page, Landscaping tips page, Contact page, About Us, and Cart page.

**Output Specifications:**

1. Each site page is linked and displayed i.e. Home page, Services page, Landscaping supplies page, Landscaping tips page, Contact page, About Us, and Cart page.

**Environmental Needs:**

1. Laptop or Desktop with keyboard and mouse.
2. Web browser
3. Operating system with GTLSS files installed.

**Special Procedural Requirements:**

n/a

**Inter-case Dependencies:**

The GTLSS file package and the web browser.

**4.1.4 Specification ID: GTLSS-UI-04**

**Objective:** The objective of the test case is to provide a black-box test for the UI. The content is displayed for each site page required by the section of Project Plan Document section 1.3.1.

**Test Items:** The test will emulate a customer able to view all content on the site pages i.e. Home page, Services page, Landscaping supplies page, Landscaping tips page, Contact page, About Us, and Cart page.

**Input Specifications:**

1. The GTLSS package files will display content for site pages i.e. Home page, Services page, Landscaping supplies page, Landscaping tips page, Contact page, About Us, and Cart page.

**Output Specifications:**

1. Content is displayed for site pages i.e. Home page, Services page, Landscaping supplies page, Landscaping tips page, Contact page, About Us, and Cart page.

**Environmental Needs:**

1. Laptop or Desktop with keyboard and mouse.
2. Web browser
3. Operating system with GTLSS files installed.

**Special Procedural Requirements:**

n/a

**Inter-case Dependencies:**

The GTLSS file package and the web browser.

**4.1.5 Specification ID: GTLSS-UI-05**

**Objective:** The objective of the test case is to provide a black-box test for the UI. The images are displayed on each site page as required by the section of Project Plan Document section 1.3.1.

**Test Items:** The test will emulate a customer able to view all the images on the site pages i.e. Home page, Services page, Landscaping supplies page, Landscaping tips page, Contact page, About Us, and Cart page.

**Input Specifications:**

1. The GTLSS package files will display images for site pages i.e. Home page, Services page, Landscaping supplies page, Landscaping tips page, Contact page, About Us, and Cart page.

**Output Specifications:**

1. Images are displayed for site pages i.e. Home page, Services page, Landscaping supplies page, Landscaping tips page, Contact page, About Us, and Cart page.

**Environmental Needs:**

1. Laptop or Desktop with keyboard and mouse
2. Web browser
3. Operating system with GTLSS files installed.

**Special Procedural Requirements:**

n/a

**Inter-case Dependencies:**

The GTLSS file package and the web browser.

**4.1.6 Specification ID: GTLSS-UI-06**

**Objective:** The objective of the test case is to provide a black-box test for the UI. The website links to email composition for customers as required by the section of Project Plan Document section 1.3.1.

**Test Items:** The test will emulate a customer clicking on the email for green thumb and being directed to an email composition with the green thumb address in the to line.

**Input Specifications:**

1. Clicking on the email address at the bottom of a site page.

**Output Specifications:**

1. Clicking on the email address at the bottom of a site page will result in an email composition window being opened with the address for green thumb being in the To line allowing the customer to send an email to the company.

**Environmental Needs:**

1. Laptop or Desktop with keyboard and mouse
2. Web browser
3. Operating system with GTLSS files installed.

**Special Procedural Requirements:**

n/a

**Inter-case Dependencies:**

The GTLSS file package and the web browser.

**4.1.7 Specification ID: GTLSS-UI-07**

**Objective:** The objective of the test case is to provide a black-box test for the UI. The contact page loads with text boxes to enter customer information and comments as required by the section of Project Plan Document section 1.3.1.

**Test Items:** The test will emulate a customer opening the contact page, which will load text boxes for them to enter customer information and comments.

**Input Specifications:**

1. Clicking on the contact page in the navigation bar or otherwise loading the contact page.

**Output Specifications:**

1. Contact page loads with text boxes for customer information and comments.

**Environmental Needs:**

1. Laptop or Desktop with keyboard and mouse
2. Web browser
3. Operating system with GTLSS files installed.

**Special Procedural Requirements:**

n/a

**Inter-case Dependencies:**

The GTLSS file package and the web browser.

**4.1.8 Specification ID: GTLSS-UI-08**

**Objective:** The objective of the test case is to provide a black-box test for the UI. The services page loads with descriptions of services available and add to cart functionality as required by the section of Project Plan Document section 1.3.1.

**Test Items:** The test will emulate a customer opening the services page, which will load descriptions of the services and provide add to cart functionality.

**Input Specifications:**

1. Clicking on the services page in the navigation bar or otherwise loading the services page.

**Output Specifications:**

1. Services page loads with descriptions of services and add to cart functionality.

**Environmental Needs:**

1. Laptop or Desktop with keyboard and mouse
2. Web browser
3. Operating system with GTLSS files installed.

**Special Procedural Requirements:**

n/a

**Inter-case Dependencies:**

The GTLSS file package and the web browser.

**4.1.9 Specification ID: GTLSS-UI-09**

**Objective:** The objective of the test case is to provide a black-box test for the UI. The products page loads with descriptions of products for sale and add to cart functionality as required by the section of Project Plan Document section 1.3.1.

**Test Items:** The test will emulate a customer opening the products page, which will load descriptions of the products and provide add to cart functionality.

**Input Specifications:**

1. Clicking on the products page in the navigation bar or otherwise loading the products page.

**Output Specifications:**

1. Products page loads with descriptions of products and add to cart functionality.

**Environmental Needs:**

1. Laptop or Desktop with keyboard and mouse
2. Web browser
3. Operating system with GTLSS files installed.

**Special Procedural Requirements:**

n/a

**Inter-case Dependencies:**

The GTLSS file package and the web browser.

## 4.2 Services Test Cases

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

(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. This testing will be performed by a user testing team.

**4.3.1 Specification ID: GTLSS-DO-01**

**Objective:** The objective of the test case is to provide a white-box test for the Supplies/Services/Equipment/Employees domain objects by having the system add new Supplies/Services/Equipment/Employees object according to the user request.

**Test Items:** The items to be tested in this test case are the functions that create new Supplies/Services/Equipment/Employees domain objects. This case tests valid data entry.

**Input Specifications:**

1. The Admin User of the GTLSS requests to add a new Supply to the DB by clicking on the Add link under Supplies. The user adds information about a new product (e.g. product name, path to the product image, product description, and product price). Then, clicks on Add button.
2. The Admin User of the GTLSS requests to add a new Service to the DB by clicking on the Add link under Services. The user adds information about a new service (e.g. service name, path to the service image, description, and fee). Then, clicks on Add button.
3. The Admin User of the GTLSS requests to add a new Equipment to the DB by clicking on the Add link under Equipment. The user adds information about a new equipment (e.g. name, description). Then, clicks on Add button.
4. The Admin User of the GTLSS requests to add a new Employee to the DB by clicking on the Add link under Employees. The user adds information about a new employee (e.g. name, salary). Then, clicks on Add button.

**Output Specifications:**

1. The successful creation of a Product object
2. The successful creation of a Services object
3. The successful creation of an Equipment object
4. The successful creation of an Employees object

**Environmental Needs:**

1. Laptop or Desktop with keyboard and mouse.
2. Web browser
3. Operating system with GTLSS files installed.

**Special Procedural Requirements:**

n/a

**Inter-case Dependencies:**

The GTLSS file package and the web browser.

**4.3.2 Specification ID: GTLSS-DO-02**

**Objective:** The objective of the test case is to provide a white-box test for the Supplies/Services/Equipment/Employees domain objects by having the system retrieve all available Supplies/Services/Equipment/Employees data according to the user request.

**Test Items:** The items to be tested in this test case are the functions that retrieve appropriate data for Supplies/Services/Equipment/Employees domain objects.

**Input Specifications:**

1. The Admin User of the GTLSS requests to see all available Supplies data by clicking on the Show link under Supplies.
2. The Admin User of the GTLSS requests to see all available Services data by clicking on the Show link under Services.
3. The Admin User of the GTLSS requests to see all available Equipment data by clicking on the Show link under Equipment.
4. The Admin User of the GTLSS requests to see all available Employees data by clicking on the Show link under Employees.

**Output Specifications:**

1. Admin Portal shows Review of Products (name, description, price, etc.)
2. Admin Portal shows Review of Services (name, description, fee, etc.)
3. Admin Portal shows Review of Equipment (name, description, etc.)
4. Admin Portal shows Review of Employees (name, salary, etc.)

**Environmental Needs:**

1. Laptop or Desktop with keyboard and mouse.
2. Web browser
3. Operating system with GTLSS files installed.

**Special Procedural Requirements:**

n/a

**Inter-case Dependencies:**

The GTLSS file package and the web browser.

**4.3.3 Specification ID: GTLSS-DO-03**

**Objective:** The objective of the test case is to provide a white-box test for the Supplies/Services/Equipment/Employees domain objects by having the Supplies/Services/Equipment/Employees data changed according to the user request.

**Test Items:** The items to be tested in this test case are the functions that update data for Supplies/Services/Equipment/Employees domain objects. This case tests valid data entry.

**Input Specifications:**

1. The Admin User of the GTLSS requests to change a Supply data in the DB by clicking on the Update link under Supplies. The user selects what product already in the database he wants to adjust and inputs the updated information about a product (e.g. product name, path to the product image, product description, or product price). Then, clicks on Update button.
2. The Admin User of the GTLSS requests to change a Service data in the DB by clicking on the Update link under Services. The user selects what service already in the database he wants to adjust and inputs the updated information about a service (e.g. service name, path to the service image, service description, or service fee). Then, clicks on Update button.
3. The Admin User of the GTLSS requests to change an Equipment data in the DB by clicking on the Update link under Equipment. The user selects what equipment already in the database he wants to adjust and inputs the updated information about an equipment (e.g. name or description). Then, clicks on Update button
4. The Admin User of the GTLSS requests to change an Employee data in the DB by clicking on the Update link under Employees. The user selects what employee already in the database he wants to adjust and inputs the updated information about an employee (e.g. name or salary). Then, clicks on Update button.

**Output Specifications:**

1. The successful update of a Product object
2. The successful update of a Services object
3. The successful update of an Equipment object
4. The successful update of an Employees object

**Environmental Needs:**

1. Laptop or Desktop with keyboard and mouse.
2. Web browser
3. Operating system with GTLSS files installed.

**Special Procedural Requirements:**

n/a

**Inter-case Dependencies:**

The GTLSS file package and the web browser.

**4.3.4 Specification ID: GTLSS-DO-04**

**Objective:** The objective of the test case is to provide a white-box test for the Supplies/Services/Equipment/Employees domain objects by having the system remove Supplies/Services/Equipment/Employees object according to the user request.

**Test Items:** The items to be tested in this test case are the functions that delete existing Supplies/Services/Equipment/Employees domain objects.

**Input Specifications:**

1. The Admin User of the GTLSS requests to remove a Supply data from the DB by clicking on the Delete link under Supplies. The user selects what product already in the database he wants to delete. Then, clicks on Delete button.
2. The Admin User of the GTLSS requests to remove a Service data from the DB by clicking on the Delete link under Services. The user selects what service already in the database he wants to delete. Then, clicks on Delete button.
3. The Admin User of the GTLSS requests to remove an Equipment data from the DB by clicking on the Delete link under Equipment. The user selects what equipment already in the database he wants to delete. Then, clicks on Delete button.
4. The Admin User of the GTLSS requests to remove an Employee data from the DB by clicking on the Delete link under Employees. The user selects what employee already in the database he wants to delete. Then, clicks on Delete button.

**Output Specifications:**

1. The successful deletion of a Product object
2. The successful deletion of a Services object
3. The successful deletion of an Equipment object
4. The successful deletion of an Employees object

**Environmental Needs:**

1. Laptop or Desktop with keyboard and mouse.
2. Web browser
3. Operating system with GTLSS files installed.

**Special Procedural Requirements:**

n/a

**Inter-case Dependencies:**

The GTLSS file package and the web browser.

**4.3.5 Specification ID: GTLSS-DO-05**

**Objective:** The objective of the test case is to provide a white-box test for the Customer Order, Product Order Details, and Service Order Details domain objects by having the system add new Customer Order, Product Order Details, and Service Order Details information.

**Test Items:** The items to be tested in this test case are the functions that create new Customer Order, Product Order Details, and Service Order Details domain objects. This case tests valid data entry.

**Input Specifications:**

1. At the Checkout, the Customer places the order by pressing the Submit button.

**Output Specifications:**

1. The successful creation of a Customer Order object along with:
   * The successful creation of a Product Order Details object, if Customer selected any supplies
   * The successful creation of a Service Order Details object, if Customer selected any services
   * The successful creation of objects for Product Order Details and Service Order Details, if Customer selected both, products and services

**Environmental Needs:**

1. Laptop or Desktop with keyboard and mouse.
2. Web browser
3. Operating system with GTLSS files installed.

**Special Procedural Requirements:**

n/a

**Inter-case Dependencies:**

The GTLSS file package and the web browser

**4.3.6 Specification ID: GTLSS-DO-06**

**Objective:** The objective of the test case is to provide a white-box test for the Customer Account domain object by having the system add new Customer Account information.

**Test Items:** The items to be tested in this test case are the functions that create new Customer Account domain objects. This case tests valid data entry.

**Input Specifications:**

1. At the Checkout, the Customer User inputs a valid customer data (e.g. name, address, phone, etc.).

**Output Specifications:**

1. The successful creation of a Customer Account object

**Environmental Needs:**

1. Laptop or Desktop with keyboard and mouse.
2. Web browser
3. Operating system with GTLSS files installed.

**Special Procedural Requirements:**

n/a

**Inter-case Dependencies:**

The GTLSS file package and the web browser.

**4.3.7 Specification ID: GTLSS-DO-07**

**Objective:** The objective of the test case is to provide a white-box test for the Customer Billing domain object by having the system add new Customer Billing information.

**Test Items:** The items to be tested in this test case are the functions that create new Customer Billing domain objects. This case tests valid data entry.

**Input Specifications:**

1. At the Checkout, the Customer User inputs a valid customer billing data (e.g. credit card type, number, etc.).

**Output Specifications:**

1. The successful creation of a Customer Billing object

**Environmental Needs:**

1. Laptop or Desktop with keyboard and mouse.
2. Web browser
3. Operating system with GTLSS files installed.

**Special Procedural Requirements:**

n/a

**Inter-case Dependencies:**

The GTLSS file package and the web browser.