Week 5 Final Assignment—E-Commerce Website Test Plan

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Software Requirements Specification

for

E-Commerce Website Test Plan

Version 1.0 Release 1.0 Waiting for Approval

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Revision History

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| --- | --- | --- | --- |
| **Name** | **Date** | **Reason For Changes** | **Version** |
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# Introduction

## Purpose

The purpose of this SRS (software requirements specification) is to outline the requirements of software build version 1.0, document release 0.6, of the e-commerce website. The e-commerce website has the expressed purpose of allowing customers to quickly locate and purchase items from a range of options. Release 0.6 of this document refers to the e-commerce website version 1.0.

## Document Conventions

This document will be broken into 5 sections. These sections will have headers for Introduction, Overall Description, External Interface Requirements, System Features, and Other Non-Functional Requirements. Sub-headers will provide the details of the specifics for each of those sections.

## Intended Audience and Reading Suggestions

This SRS has an intended audience of software developers, architects, designers, project managers, software testers, and any other stakeholders involved this project and its execution. To gain full understanding for the purpose and requirements for the e-commerce website, it is suggested that all audience members read the document read the document in its entirety.

## Product Scope

The e-commerce website allows users to find the products they want quickly and easily. The user will be able to search for an item, select from a list of search suggestions, narrow the search by selecting different filters items, view the details of the items, add items to a cart, continue shopping for more items, and checkout when they are ready. The development of this e-commerce website should increase growth and profitability, which is the objective of the business.

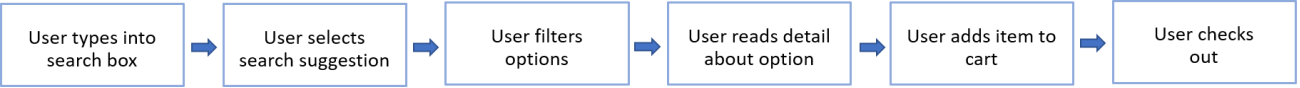
# Overall Description

## Product Perspective

This E-commerce website will be a new build and a self-contained project.

## Product Functions

Users should be able to enter a search for items, predictive typing should present suggested groups or item types, use filters to narrow the search, view the details of resulting items, add items to the cart, continue to shop for other items, and check out when they have completed shopping. Different item types will have different filters available that represent aspects of their item type (grouping items of similar type).



## User Classes and Characteristics

For the E-commerce website, the user classes consist of customers, vendors, and administrators. Customer class users will need to be able to search, select, and purchase items. Vendor class users will need to be able to add, remove, and update their inventory lists. In addition to all previous functions above, administrator class users will also need to be able to assist the other user classes with login issues, retrieve confirmed orders by an order ID number, and manage site maintenance.

## Operating Environment

In addition to cross-platform compatibility, the E-commerce website should exhibit mobile responsiveness. The E-commerce website should function properly on Windows, Mac, Linux, Chromium, IOS, and Android operating systems, and work in all of the major browsers (Edge, Chrome, Firefox, Safari, etc.).

## Design and Implementation Constraints

The project timeframe deadline for the E-commerce website is six months. The website is to be designed to work with relational databases and the user account sensitive data must be encrypted. As the site is to be maintained by the client, it’s design and build must exhibit modifiability, maintainability, and testability support, and comply with ADA accessibility guidelines (ADA, 2007).

## User Documentation

The E-commerce website will include support documentation for users needing troubleshooting assistance and user account creation guidance. There is also to be a chat-bot that users may request needed assistance.

## Assumptions and Dependencies

The E-commerce website has a deadline of six months. The budget for the project is fifty-thousand dollars. The project team may not consist of more than eight people, including the designers, architects, database administrators, developers, testers, and project managers.

# External Interface Requirements

## User Interfaces

For consistency, every page of the E-commerce must have the same header, footer, and navbar. There needs to be a back arrow button located in the same place of each page so users may return to their previous page as well as a home button that is clearly unctio. Font Awesome should be the sole source for any icons use on the website. Users of the website should be able to TAB through pages and all images should contain alt-tags. All fonts and colorsused in the website should be selected for visual appeal, usability, and readability. The page layout should be consistent between all pages and advertisements should be positioned so they do not draw attention away from the main content of the page. Any forms on the website should contain clear feedback for filling them out and correcting any errors that are made.

## Hardware Interfaces

All major devices, be it computer, tablet, or phone to be able to access the E-commerce website. HTTP and HTTPS will handle site requests and TCP for resource transfers between web servers and clients. Screen reader support should also be included in the E-commerce website design.

## Software Interfaces

The E-commerce website should contain APIs for working with relational databases, payment acceptance, and single signin options for Facebook, Google, and Twitter. The site should function on IOS, Android, Windows, Mac, Linux, and Chromium.

## Communications Interfaces

Encryption will be used for securing all PII (personally identifiable information). Users will be able to opt in for newsletters and special deals and receive emails to confirm orders and shipping.

# System Features

## New User Account Creation

* + 1. Description and Priority
* Priority: High
* Description: Users should be able to create an account
* Benefit: 9

4.1.2 Stimulus/Response Sequences

* User prompted to login or create account
* User clicks/selects register new account
* User fills out form data
* User receives confirmation or instructions for correcting errors

4.1.3 Functional Requirements

* REQ-1: Website presents buttons for login and registering on homepage
* REQ-2: Website presents registration form if register button selected
* REQ-3: Form data validated, sanitized, processed, and submitted to database when submit button selected
* REQ-4: Instructions provided if data entered fails to meet requirements
* REQ-5: Success message presented after account successfully created

## Existing Account Login

* + 1. Description and Priority
* Priority: High
* Description: Users should be able to login to account
* Benefit: 9

4.1.2 Stimulus/Response Sequences

* User prompted to login or create account
* User clicks/selects login
* User enters login form data
* User clicks/selects submit
* User provided confirmation that they have been logged in or clear instructions for correcting their input

4.2.3 Functional Requirements

* REQ-1: Website presents buttons for login and registering on homepage
* REQ-2: Website presents login form if login button selected
* REQ-3: Form data validated, sanitized, processed, and submitted to database when submit button selected
* REQ-4: Instructions provided if data entered fails to meet requirements
* REQ-5: Data is compared to database information
* REQ-6: Success message presented after account successful login

## User Searches Items

* + 1. Description and Priority
* Priority: High
* Description: Users can search for items. This is part of the website main unctionality
* Benefit: 8

4.3.2 Stimulus/Response Sequences

* User types into the search bar
* User is provided with search suggestions
* User selects a search suggestion
* User is presented with a list of search results
* User selects filters to narrow search results

4.3.3 Functional Requirements

* + REQ-1: Website should have a search bar
  + REQ-2: Website should dynamically present user with search suggestions
  + REQ-3: Website should return search results when user selects suggestion
  + REQ-4: Website should dynamically generate filters depending on the category that the item falls into
  + REQ-5: Website should update search results when filters are selected

## User Views Item Details

* + 1. Description and Priority
* Priority: High
* Description: Users read item details. Users will be reluctant to buy if they do not have a description.
* Benefit: 7

4.4.2 Stimulus/Response Sequences

* User selects item from search results list
* User views item details

4.4.3 Functional Requirements

* + REQ-1: Website provides link to item descriptions
  + REQ-2: Website redirects to page populated with selected item

## User Add Item to Cart

* + 1. Description and Priority
* Priority: High
* Description: Users can add item to virtual cart. This is part of the main website functionality
* Benefit: 8

4.5.2 Stimulus/Response Sequences

* User clicks/selects add to cart
* User presented option to checkout or continue shopping
* User redirected to search page if continue shopping selected
* User redirected to checkout page if checkout selected

4.5.3 Functional Requirements

* + REQ-1: Item detail page should have an “add to cart” button
  + REQ-2: Website should dynamically update cart icon with the correct number of items in cart
  + REQ-3: Website should give option to continue shopping or go to checkout
  + REQ-4: Website should redirect to search page if continue shopping selected
  + REQ-5: Website should redirect to checkout page if checkout selected

## User Cart View

* + 1. Description and Priority
* Priority: Medium
* Description: Users can view cart prior to finalizing purchases.
* Benefit: 7

4.6.2 Stimulus/Response Sequences

* User clicks/selects cart icon
* User can view items in cart
* User can edit or delete items in cart

4.6.3 Functional Requirements

* + REQ-1: Website should have a cart icon in top right of each page that links to cart view page
  + REQ-2: User should see items added in a list in cart view page with short descriptions
  + REQ-3: User can delete items from cart, edit quantity of items to purchase, and price of items
  + REQ-4: Website should show projected cost total for items in cart
  + REQ-5: Website should update after any changes made to cart list
  + REQ-6: There will be a button to go to checkout in cart view page

## User Can Checkout and Finalize Purchase

4.3.1 Description and Priority

* Priority: High
* Description: Users can finalize the purchase at checkout page. This is part of the website main unctionality
* Benefit: 9

4.3.2 Stimulus/Response Sequences

* User clicks/selects cart icon
* User clicks/selects checkout from cart page
* Website presents checkout form to user
* User fills out checkout form
* User selects submit on checkout form
* Website gives confirmation of success or clear instructions to fix errors

4.3.3 Functional Requirements

* + REQ-1: Website should have a checkout button on cart view page
  + REQ-2: Website should redirect user to checkout page
  + REQ-3: Website should present checkout form to user
  + REQ-4: Website validates, sanitizes, processes, and updates databases when user selects submit on checkout form
  + REQ-5: Website indicates successful or clear instructions to correct errors

# Other Nonfunctional Requirements

## Performance Requirements

Speed and reliability are key to having a user return in the future. New accounts should take no longer than a minute to fill out and submit. After searching for an item, the results list should take no more than three seconds to display to the user. After selecting checkout, it should not take longer than two minutes for the user to complete the checkout form and receive a confirmation message.

## Safety Requirements

A session should timeout after five minutes of inactivity without confirmation from the user to continue. Before confirming an order, the E-commerce site should verify the user to be over the age of fourteen, all PII should be protected, and passwords and financial information needs to be encrypted.

## Security Requirements

Before a user gets access to an account, the E-commerce site must verify the account credentials. All of a users PII needs to be protected and secure. Passwords and financial data must be encrypted and transactions handled through secure processing methods.

## Software Quality Attributes

The E-commerce website needs to be reliable and fast to prevent interruptions that may deter users from returning. The site should be easy to navigate and use. Additionally, it should follow the guidelines for accessibility outlined by the ADA (2007). The E-commerce website needs to be scalable to support business and userbase growth. Upon completion of acceptance by the client, they will be responsible for maintenance, so the site needs to be modifiable, maintainable, and testable to allow new features to be added.

## Business Rules

Administrators need to be able to assit users with resetting their account credentials. They need to be able to search for orders using order ID numbers for both current and past orders for reporting purposes.

**Testing Levels and UML Models**

**Introduction**

**References**

ADA. (2007). Website Accessibility Under Title II of the ADA. Retrieved April 5, 2020 from https://www.ada.gov/pcatoolkit/chap5toolkit.htm

Kumar, J. (2015). [The e-commerce problem statement](https://subscription.packtpub.com/book/big_data_and_business_intelligence/9781783981847/1/ch01lvl1sec12/the-e-commerce-problem-statement). In *Apache Solr patterns*. Packt Publishing. https://bit.ly/2Rn8inE

Spillner, A., Linz, T., & Schaefer, H. (2014). [*Software testing foundations: A study guide for the certified tester exam* (4th ed.)](https://ashford.instructure.com/courses/86077/modules/items/4350686). Rocky Nook.

Wiegers, K. E. (1999). [*Software requirements specifications for <project>*](https://web.cs.dal.ca/~hawkey/3130/srs_template-ieee.doc). [Template]. https://web.cs.dal.ca/~hawkey/3130/srs\_template-ieee.doc