**Sporty Shoes Project Specification**

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| **Version # and Author** | **Version History** |
| 1.0 – Binu Thankachan | November 1, 2021 - Created document with the following sections: |
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# Sprints planned and the tasks achieved in them

## Project Epic:

Create a dynamic web application for SportyShoes a ecommerce site focused on the sale of sporty shoes.

The application will:

* + Provide a home page which is the landing page for the application
  + Provide a page where the user can register as a user who can make purchases
  + Provide a page where the user can login and make purchases
  + Provide a page accessible from the home page where users can view all of the sporty shoes available and purchase them. In the future a search mechanism will be set up so that users can search for specific types of shoes.
    - Once a person clicks buy for a shoe, they will have the option of purchasing additional shoes or be taken to a page where they can view their shopping cart.
    - They can then choose to checkout where they must make a shipping choice.
    - On the next page, they can provide payment details.
    - They can then submit the shoe order and will receive a confirmation page.

* + Provide an admin backend with the following features:
    - An admin login page where the admin can change the password after login, if he wishes
    - Manage the products in the store including categorizing them
    - Browse the list of users who have signed up and be able to search users
    - See purchase reports filtered by date and category

## User Stories and Sprint Assignments:

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| --- | --- |
| **User Story** | **Planned Sprint** |
| As a customer I want a landing page for the SportyShoes website | 1 |
| As an Admin I want a SportyShoes portal that admins need to login to and cannot be accessed by those that aren’t admins and containing links to available options | 1 |
| As a customer I want a shoe listing page accessible by anyone that offers me the ability to purchase shoes | 2 |
| As an Admin I want an admin login page where the admin can change the password after login, if he/she wishes | 4 |
| As an Admin I want a page that displays a master list users who signed up | 4 |
| As an Admin I want a page that displays a master list shoe orders | 4 |
| As an Admin I want a page that allows me the ability to add shoes in specific categories | 4 |

# Algorithm of the application

Develop a dynamic SportyShoes web application with the following:

* A customer landing page that displays links to the following available options

1. List all sporty shoes
   1. From this page if the customer is logged in they can purchase shoes
2. Search for sporty shoes (to be developed in the future)
3. Login as a user to be able to order shoes
4. Register as a new user
5. Login as an Admin
   1. The user will be presented with an Admin login page where they can enter their user name and password
      1. Unsuccessful login and an error page will be displayed
      2. Successful login will display:
         1. Update password link
            1. This will update their password in the user table in the database
         2. Add shoe to inventory line
            1. This will add a new shoe record to the shoe table in the database
         3. Display list of users who signed up link
            1. This will display a page showing all users listed in the user table in the database
         4. Search users link
            1. This will allow users to be searched by age and gender
         5. Display purchase report link
            1. This will display a page showing the all shoe orders that have been made
         6. Search shoe orders link
            1. This will allow shoe orders to be searched by date range and category type (the date range currently only allows orders for today to be queried, but additional date options will be developed in the future)

# Modules developed for the application

1. Spring MVC modules developed were:
   1. Data transfer objects
   2. Servlet Controller classes
   3. DAO classes, both interfaces and implementation classes
   4. JSP view files
2. The Controller classes control handling of user url request mappings and routing of those request mappings to the appropriate handler methods for processing.
3. DAO interfaces and implementation classes segmented and abstracted out the data access mechanism for the web application and the various database files it needed to communicate with.
4. The data transfer object classes encapsulated the fields, instantiation and getters/setters for each of the database files the web application communicated with.
5. JSP view files were developed for each of the web displays needed by the user and admin for each interaction with the website.
6. Maven POM file to handle dependency management

# Core Java concepts used in the project

The core concepts used in this project were:

* Object Oriented Programming
  + Utilizing classes to represent entities
* Exception handling
  + Intercepting and processing application errors
* Code modularity
  + Separating processing via separate classes
* Collections
  + List, ArrayList
* Data Structures
  + ArrayList used to hold shoes and orders
* Spring Data JPA
  + To control communication and data access between Java layer and Microsoft SQL database
  + Predefined and custom queries
* Servlet
  + To serve as a controller and router of requests to handler methods
* JSP
  + To provide a view layer for the web application

# Link to the GitHub repository

<https://github.com/bthank/sportyshoeswebproject>

# Conclusion on enhancing the application and defining the Unique Selling Points

Future application enhancements could include:

* Adding a better user front end that is more appealing to the user
* Adding security to allow authentication and authorization in order to use the application
* Adding roles to govern how users can interact with the website and its data
* Adding email notification capability for notifying users when new shoes become available based on user search and to notify of order status
* Adding real payment processing capability
* Adding additional error handling
* Adding automated testing capability