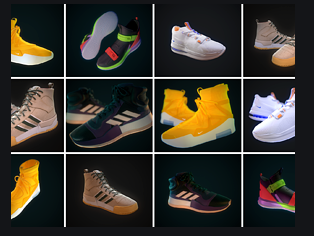
SSD 2020

Project Proposal Technical Specification



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Server Side Development

shoes@web Application

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# Session 1 - Project Overview

## Description of the shoes@web Application

The scope of this project is to design and implement an e-commerce website for shoes@web. Ruby on Rails will be the designated language used to create the application. Rails is suitable for large and small web apps, future proofed to scale easily. It is relatively quick to create a site due to its existing pre-defined configurations. There are already three main environments included: development, testing and production. Ruby on Rails is based on Model-View-Controller (MVC) architecture. It allows developers to create a very responsive and flexible application.

Our shoes@web application will be responsive, and it will adjust to work on all screen resolutions and devices (desktop, laptop, tablet & phone). A relational database to store all data (products, customer, cart, order etc.) will be created.

shoes@web will be an interactive application allowing response on request from the web browser. The primary purpose of the website will be selling products online. The application allows users to browse through the website in order to search, select and purchase products. If a user decides to purchase a product, they will first need to create an account. shoes@web will store customer details (address and order details). It will facilitate safe payment processing using major credit cards, debit cards or PayPal.

shoes@web exists to increase sales, work as a marketing tool to improve customer service and to obtain data regarding general product demand.

# Session 2 – Technical Specification

## Model

### WebUser

This is the status of the person who is using the Website at the time. If they are a visitor they can browse but not able to buy. If they want to make a purchase they need to register. If they register as a customer or an admin they are assigned a webUser\_ID and then they need to give a password. The state of their account then becomes admin or customer. Finally there will be the datatype assigned for when this account has been opened, closed and if there are any updates to it. If the Web User is registered it will also tell us. They will not be registered if they are a visitor. The table will also have the email address as we need some sort of contact details if you are to register. It is connected to the customer and admin tables by its primary key webUser\_ID. This is for better referencing.

### Customer

This is customer table. They will have the primary key of customer\_ID, automatically assigned. It will have all their necessary details like their name, phone number and date of birth for better identity purposes. Customer also references the address table by the foreign key address\_ID, this is the address table’s primary key. This is to link the table to make sure it has access to the address for better security of transit of goods and payment. Customer table also references the webUser table by the foreign key webUser\_ID, this is the webUser table’s primary key. This is to link the tables and allows us to store the email in the webUser as this is required if you want to get registered in the first place.

### Admin

This is the admin table. They will have the primary key of admin\_ID, automatically assigned. It will have all their necessary details like their name, phone number and date of birth for better identity purposes. Admin table also references the address table by the foreign key address\_ID, this is the address table’s primary key. This is to link the table to make sure it has access to the address for better security of transit of goods and payment. Admin table also references the webUser table by the foreign key webUser\_ID, this is the webUser table’s primary key. This is to link the tables and allows us to store the email in the webUser as this is required if you want to get registered in the first place.

### Category

This table identifies the categories of the product. There are 6 categories split up by sport. The sports are running, soccer, golf, climbing, hiking or basketball. The categories have IDs, this is its primary key, category\_ID, and are named and there is a column for description too. This table also has a foreign key which links it to the product table. This is the primary key of the product table product\_ID.

### Brand

The next table is brand. This is pretty self-explanatory. Each brand has an ID, this is its primary key, brand\_ID, and a name. This table is also linked to the product table. It uses the product table’s Primary key as a foreign key. This links all the tables for better referencing. This table also has a foreign key which links it to the product table. This is the primary key of the product table product\_ID.

### Offer

This table is for the offers that apply to certain products. It has an ID, which is its primary key, under offer\_ID. It uses this ID as its offer code, this is applicable by the customer to get a discount. The offer also has a description of the offer under “description”. We include the price reduction as an applicable decimal datatype. This table also has a foreign key which links it to the product table. This is the primary key of the product table product\_ID.

### Product

This is the biggest table. Each product has an ID. This is its primary key which is also the foreign key for the tables: category, brand, offer and shoppingCart. Each product has a name, a description, stockQuantity to know what’s left, gender for specification, price in the datatype decimal, size in the datatype int, colour, the picture of the product and the offer code for the offers. Product also has the foreign keys offer\_ID, category\_ID and brand\_ID, all of which are primary keys of the tables; offer, category and brand respectively. This links these tables for better referencing.

### ShoppingCart

This is where we will put the products that the customer chooses for purchase. Each cart will automatically be assigned an ID, shoppingCart\_ID, this will be its primary key. This cart will have the products in it. The products will have their product\_ID, their name, the quantity of these products that the customer wants to buy, the price per item and the total price for the shopping cart at the end. The shoppingCart also has 2 foreign keys; the customer\_ID and the Shipping\_ID, both of which are the primary keys of the customer and the shipping tables respectively. This links all the tables for better referencing.

### Order

This table is for when the customer commits to buying what’s in the shopping cart. Each order is given an order\_ID automatically; this is the primary key for this table. We also have some columns to indicate when the order was created and status of the order, which will indicate in what stage of transit the order, is for example “shipped” or”ready for shipping”. This table also references the table customers so that we have access to all the details to secure a successful shipping process. This is done through the foreign key customer\_ID which is the primary key of customer. We also have the foreign key shipping\_ID which links this table to the shipping table so that we the process of shipping is underway we can have all the details required for a successful shipping.

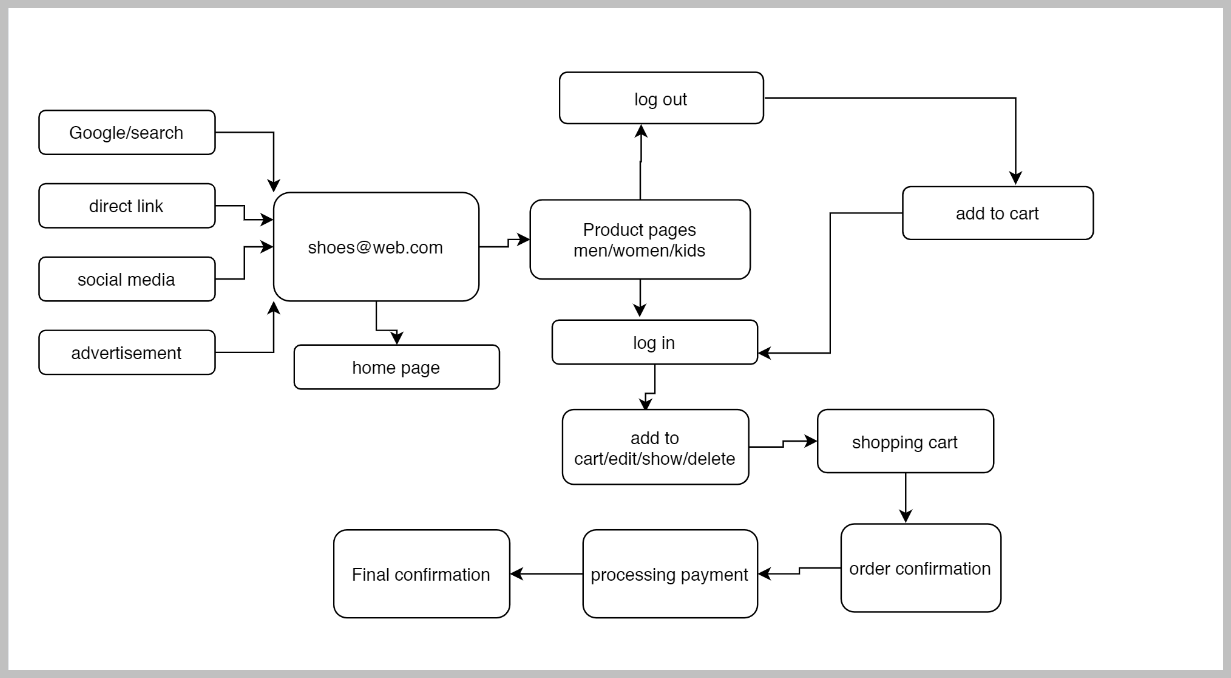
### Payment

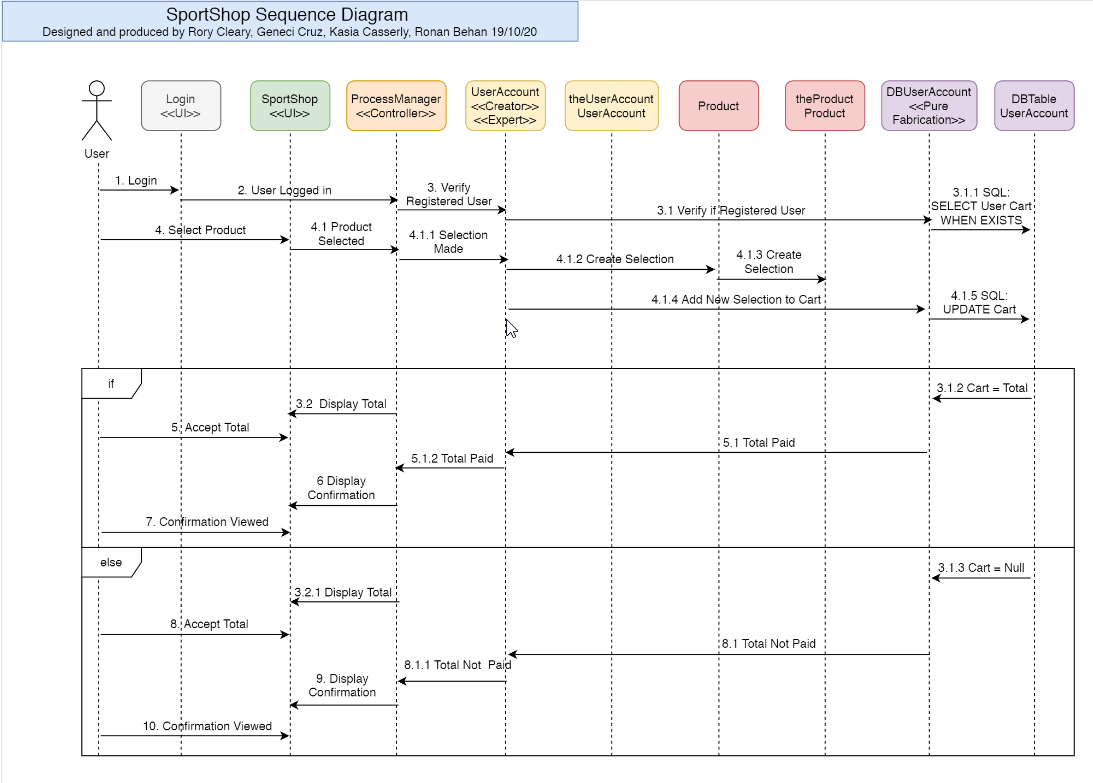
Next we have the payment table. Here we have an ID, the payment ID. This is assigned automatically and will be its primary key. Next we have a lot of the info required for payments such as the payment ID, payment\_method for example revolut, paypal etc, number of the card, card expiration date and the card code. It also linked to the customer, shipping and orders table by foreign keys which are theses table’s primary keys. This is for better links between the tables. Payment table also references the address table by the foreign key address\_ID, this is the address table’s primary key. This is to link the table to make sure it has access to the address for better security of transit of goods and payment.

### Shipping

Finally we have the shipping table. This is for when the good are send out in transit to the customer. Each order when shipped has a shipping ID, shipping\_ID, this is the primary key of this table and is automatically assigned. This table also has the date shipped to keep track of the transit. This table also references the customer table and the orders table through their primary keys customer\_ID and order\_ID. These foreign keys give access the necessary info to the shipping table to get everything required to get the order shipped successfully. Shipping table also references the address table by the foreign key address\_ID, this is the address table’s primary key. This is to link the table to make sure it has access to the address for better security of transit of goods and payment.

## Key Users Flow





## shoes@web Flow from visitor to User/Customer

The shoes@web applications main objective is to allow a registered user to purchase sport shoes products online. The following functionalities will be developed:

* A fully functional shoes@web application.
* Define access control to different users.
* A top navigation bar with buttons to access home, products pages, log in/log out, search and cart pages contained in it.
* A product section developed to ensure the user can access different products available by categories.
* A database to hold information inputted into the website.
* An easy to use website.
* An easy to use navigation bar.
* Flash message informing user: “Item successfully added to cart”.
* Flash message informing user: “Please agree with our terms and conditions”.
* Registration page – The shoes@web application must provide a registration page to define a username and a password to a user.
* The web service provides a search functionality to the inventory.
* Inventory – any user can visit different pages of the web application
  + Men’s, Women’s and Kids products pages
* Search functionality can be accessed by:
  + Product name
  + Product model
  + Product brands
  + Product sizes

## Functional Requirements for Non-registered User

* Non-registered user can open the website URL.
* Non-registered user can navigate between products pages.
* Non-registered user cannot add items to a Cart, therefore, cannot make a purchase.

## Functional Requirements for a Registered User

* Login page – To allow user to log into the web service at any time.
* The web service must allow user to log out.
* Registered user can make purchase
* Registered user can add item to the cart
* Registered user should be able to remove item from the cart
* A link to the checkout should be available all the time at all products pages
* The web application must have a Payment page
* The payment page must provide a summary of what user has in their cart
* The payment page provides a total of the purchase being made
* The payment page collects user personal details
* The payment page collects user card details
* The payment page collects user deliver address OR / AND billing address details
* User can access the website in many different device (Desktop, Laptop, Mobile and Tablets)
* Registered users have access to his/her historical orders
* Registered user can unregister from account

## Functional Requirements for an Administrator Manager

* Has Read/Write/Modify permissions
* Add, edit, and delete products
* Change prices of created products
* Deal with site security

## Functional Requirements for an Administrator User

* Has no write permission to the customer table
* Has write permission to edit images
* Has read permission to orders and addresses of customers

## Non-Functional Requirements

* Ensure there is a security measure to only allow admin user access to change the content of the website pages.
* Ensure that only registered users can make purchase on the website
* The website should be compatible with all browsers and viewable on most technologies, for example desktops, laptops, and mobile devices.
* The website should be easy to use with easy navigation through the pages and consistent design and page layouts.
* The website needs to have a fast response time and processing time for example in accessing the sign-up forms to register.
* The website will be live for twenty-four hours a day, seven days a week and will be free of charge for users to use.

## Front End Technical Spec

### Application

Our web application will allow certain functions and aspects so that a registered user has the ability to log into their account and browse through the different product pages available and to purchase products through the cart facility. Registered users will also have the ability to delete their account and remove their data for our database.

These pages will include static and dynamic pages:

* Navigate to and from all pages to any other page on the application
* men’s shoes – browse through our online catalogue of men’s shoes
* women’s shoes - browse through our online catalogue of women’s shoes
* kids shoes - browse through our online catalogue of kids shoes
* sign up as a registered user
* log in/log out of user account
* search button – user can search through our database for a particular product

### Cart

Registered users will also have access to the cart page, which will enable each user to:

* view cart
* add products
* remove products
* empty cart
* Favicon

A favicon will be displayed when a user opens our application in certain browsers. The browsers that have the capability to display these favicons are Firefox, Edge and Chrome. At this current time Safari does not offer this function. Our favicon is a coloured shoe.

### Header

Banner section will include the company logo and colours of navy, black and white. A slogan will also be visible to users.

After the user encounters our image header with the main image on the home page alone they will scroll down towards the card image section. This section includes 3 images displayed in a block and each will function as a direct link to the men’s, women’s and kids pages. Each card is coded with a link\_to image tag to the items\_url. When a user hovers over these images they will dynamically change their opacity and make the user aware of their function to redirect to another page on the application.

### Navigation

Navigation area will be developed with buttons and icons and each will be designed with a different colour so as to make it a more dynamic experience for the user throughout the application.

Home button (home icon) with a red colour

Men’s button with a blue colour

Women’s button with a pink colour

Kids button with a green colour

Log in button with a grey colour

Log out button with a teal colour

Search button with a purple colour

Cart button with an orange colour

### Subscribe

The next section will display a subscribe button, coloured in red, which enables a user to subscribe to our email service which will place each user on our mailing list and give them access to special offers on an advanced basis.

Side by side with this is our special offer section, alerting the user to current offers available.

### Footer

At the bottom of our application is the footer section. This includes links to numerous other pages which increases the functionality and options available to the user. These pages are:

* about us – displaying the general information in relation to the company
* contact us – allowing the user to contact us using a form
* support - send details of a technical issue to our support team
* shipment – check out our shipping policies
* giftcard – allow a user to purchase a gift card
* returns/refunds – make user aware of the processes involved in returning a product

Links to various social media websites are displayed in this section also which will enable user to access these websites on request.

The Ruby language also provides the option of including a piece of code which increments the date. Our application has the functionality built into it which will change the year on an incremental basis when it is required. The code used is: <%= Time.now.year %>.

### Items/Products pages

When the user redirects to the products pages they will be able to visualise the different product ranges that are on offer. Once they browse and select a product they like, they can view a description of the product, the price, available sizes and colours and if they wish, add the product to their cart. The functions available to the user will ensure that the chosen product is then sent to their cart where they can finalise their purchase or if they decide to change their mind can remove the product from their cart and begin the search for another product.

### Thank you page

Once a purchase has been completed a page displaying a thank you message, and order number will be visible on the user’s screen.

## 2.10 Use of Third-Party Gems

* Devise gem used to generate authenticated users.
* PayPal gem – To allow us to receive payment via PayPal system.

## External interfaces

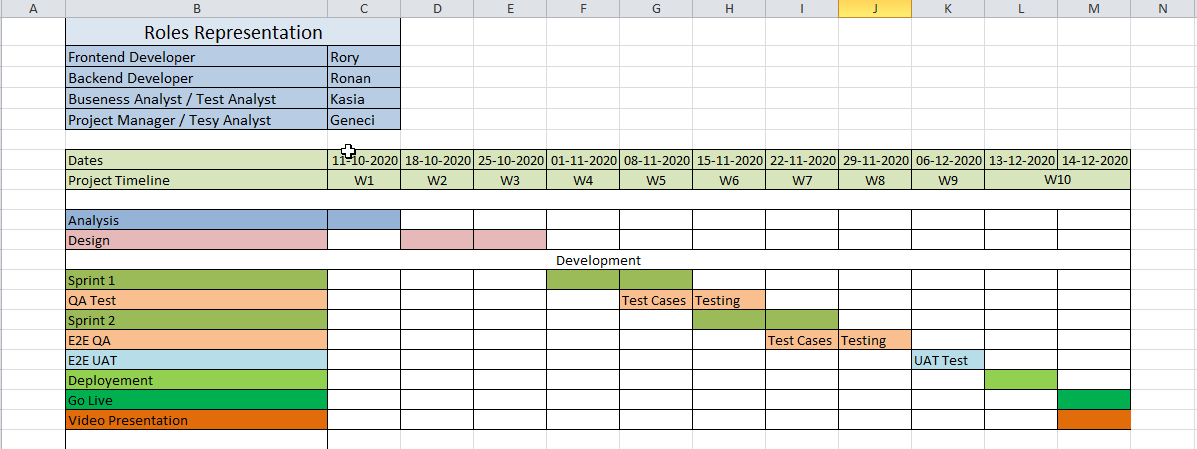
* The shoes@web application will have a link to social media such as: Facebook, Instagram, Snapshot, Twitter, and LinkedIn.

## Extra functionalities

To make the website more users friendly and fast to access it some functionality can be added.

* Allow user to login to the shoes@web via Facebook or Google account.
* Provide users with order history.
* Add some useful JavaScript
* Make the application responsive which will resize the content on all devices.
* Allow the user to navigate throughout the application at different sections on each page.

# Project timeline



# Bibliography

Roth, R.M., Dennis, A. and Barbara Haley Wixom (2013). *System analysis and design.* Hoboken, N.J.: Wiley.

Lecturer McCabe, L (2020) ‘Introduction to Server-Side Development’ [PowerPoint presentation]. [HDSDEVSEPOL\_YR2](https://mymoodle.ncirl.ie/course/view.php?id=813)Server-Side Development*.* Available at: <https://mymoodle.ncirl.ie/course/view.php?id=813> (Accessed: 11 October 2020).

Lecturer McCabe, L (2020) ‘Ruby on Rails’ [PowerPoint presentation]. [HDSDEVSEPOL\_YR2](https://mymoodle.ncirl.ie/course/view.php?id=813)Server-Side Development*.* Available at: <https://mymoodle.ncirl.ie/course/view.php?id=813> (Accessed: 12 October 2020).

Lecturer McCabe, L (2020) ‘Routes, Relationships and Active Record’ [PowerPoint presentation]. [HDSDEVSEPOL\_YR2](https://mymoodle.ncirl.ie/course/view.php?id=813)Server-Side Development*.* Available at: <https://mymoodle.ncirl.ie/course/view.php?id=813> (Accessed: 12 October 2020).

‌Dr. Muhammad, I (2020) ‘SQL Programming DML (Part I)’ [PowerPoint presentation]. *HDCOMP\_877117964 Introduction to Databases.* Available at: <https://moodle.ncirl.ie/mod/resource/view.php?id=50820> (Accessed: 13 October 2020).

Dr. Muhammad, I (2020) ‘SQL Programming DML (Part II)’ [PowerPoint presentation]. *HDCOMP\_877117964 Introduction to Databases.* Available at: <https://moodle.ncirl.ie/mod/resource/view.php?id=50820> (Accessed: 13 October 2020).

MySQL:: MySQL Tutorial. 2020. Date Calculations. [ONLINE] Available at: https://dev.mysql.com/doc/mysql-tutorial-excerpt/5.7/en/date-calculations.html. [Accessed 13 October 2020].

Learn the Unified Modelling Language V2 – Up2UML within distinct Software Development Processes [ONLINE] Available at: <https://moodle.ncirl.ie/pluginfile.php/505443/mod_resource/content/1/alpha1191248764%20%281%29.pdf>. [Accessed 19 October 2020].

Schramel, M (2020) ‘POST Case study part II Analysis Phase’ [PowerPoint presentation]. [HDSDEVSEPOL\_YR2](https://mymoodle.ncirl.ie/course/view.php?id=813) *Object Oriented Software Engineering.* Available at: <https://moodle2019.ncirl.ie/course/view.php?id=420> (Accessed: 13 October 2020).