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Second Semester Project

Computing year 2

Group 2B2

Astronomy Equipment Sales Website

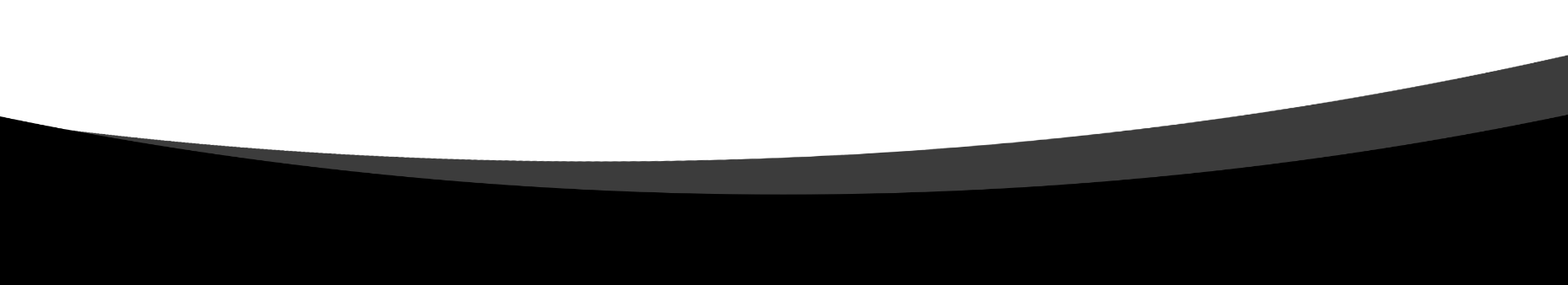


Table of Contents

[Introduction 1](#_Toc70358589)

[Team Responsibilities and Participation 1](#_Toc70358590)

[Project Plan and Requirements 2](#_Toc70358591)

[Goals of the project 2](#_Toc70358592)

[Feasibility of the project 2](#_Toc70358593)

[Requirements analysis 3](#_Toc70358594)

[Iteration Goals 3](#_Toc70358595)

[Class and Use Case diagrams 5](#_Toc70358596)

[Class Diagram 5](#_Toc70358597)

[Use case diagram 6](#_Toc70358598)

[Use Case descriptions 7](#_Toc70358599)

[Manage Product Catalogue 19](#_Toc70358600)

[Iteration One Report 27](#_Toc70358601)

[Design and Development Methodology 27](#_Toc70358602)

[Iteration One Functionality 27](#_Toc70358603)

[Pages/Basic Design 27](#_Toc70358604)

[Add/Update/Delete 27](#_Toc70358605)

[User Accounts 27](#_Toc70358606)

[Database (Category/Product) 28](#_Toc70358607)

[Shop 28](#_Toc70358608)

[Cart 28](#_Toc70358609)

[Order 28](#_Toc70358610)

[Voucher 28](#_Toc70358611)

[Issues or Problems Encountered 29](#_Toc70358612)

[Testing 30](#_Toc70358613)

[Iteration Two Report 31](#_Toc70358614)

[Residual Bugs/Limitations 31](#_Toc70358615)

[Photo Gallery 31](#_Toc70358616)

[Upload of User Pictures 31](#_Toc70358617)

[Image Voting 31](#_Toc70358618)

[Picture of the Month 31](#_Toc70358619)

[User Profile 32](#_Toc70358620)

[Contact Form 32](#_Toc70358621)

[Newsletter 32](#_Toc70358622)

[Product Search 32](#_Toc70358623)

[Issues or Problems Encountered 33](#_Toc70358624)

[Plans for Iteration Three 33](#_Toc70358625)

[Testing 34](#_Toc70358626)

[Iteration Three Report 36](#_Toc70358627)

[Iteration Three Functionality 36](#_Toc70358628)

[Testing 36](#_Toc70358629)

[Test Plan 36](#_Toc70358630)

[Test Cases and Results 36](#_Toc70358631)

[Project Achievements 39](#_Toc70358632)

[What can be improved and implemented in the future 39](#_Toc70358633)

[Reference List 40](#_Toc70358634)

[Other materials accessed during development 40](#_Toc70358635)

[Appendix 41](#_Toc70358636)

[Supervisor Meeting Minutes 41](#_Toc70358637)

[Week 1 41](#_Toc70358638)

[Week 2 41](#_Toc70358639)

[Week 3 42](#_Toc70358640)

[Week 4 42](#_Toc70358641)

[Week 5 43](#_Toc70358642)

[Week 6 43](#_Toc70358643)

[Week 7 44](#_Toc70358644)

[Week 8 44](#_Toc70358645)

[Week 9 45](#_Toc70358646)

[Week 10 45](#_Toc70358647)

[Week 11 46](#_Toc70358648)

[Week 12 46](#_Toc70358649)

[Scrum Meetings 47](#_Toc70358650)

[Student Compliance with Academic Integrity 50](#_Toc70358651)

# Introduction

Our project, Astronomy Shop was undertaken with the goal of creating an e-commerce website which would give the user an experience as authentic as possible, our team strove to make every element of the website feel like a website ready for production.

The site features a shop page which allows customers to browse or search for products through distinct categories and then the process of order and payment. Another major function of the page is a photo gallery page which gives registered customers the option to upload their images taken of the night sky to highlight their use of equipment purchased from the shop. Registered users can also vote for their favourite image which counts towards the picture of the month being awarded, they also can see their order history.

Another way our team looked to emulate was through the use of social media, a contact form and a newsletter through a mailing list.

## Team Responsibilities and Participation

Andrzej:

1. Gallery
2. Order history
3. Accounts

Gavin:

1. Shopping Cart
2. Newsletter
3. Search

Kamel:

1. Contact
2. Voucher
3. Pages

# 

# Project Plan and Requirements

## Goals of the project

The main goals of the project are to create an e-commerce website for the sale of astronomy equipment and encourage customer engagement by providing them with the platform to upload their images taken with the use of the equipment they bought and vote for their favourite images.

The key users are astronomy enthusiasts which includes amateur astronomers and fields related to astronomy such as the increasingly popular astrophotography. Astronomy equipment and accessories prices can vary greatly from low to high but the website will not focus on one individual category of user budget, it will aim to cater for low entry, mid level and high end equipment users.

The primary functionality of this website is the sales platform so this area will be the priority to have working correctly and without errors.

## Feasibility of the project

The project team has built up experience and competence using Django from studying the platform and working with it last semester so we believe that the project is feasible within the timeframe.

During the planning stage the team devoted a lot of time for research of manuals and guides that will assist them with coding of various components of the system.

The team has aimed to be ambitious in our goals for the project, for instance, none of the team has created the functionality to allow customers to upload images with ratings before so we have predicted that this could and most likely will present us with challenges to solve. If we are unable to solve any issues our contingency is to create a more basic version of what we have planned for this functionality or else to remove the additional functionality as a fully working website with less functionality is much more preferable to a half working website with more functions.

The team is confident in developing the core functionality of the website, the sales platform without many major issues as all members have experience with this from Django projects last semester.

## Requirements analysis

The main features of every e-commerce website are a front end to display products and a shop containing the products and payment processing. These are our priorities for the first iteration.

### Iteration Goals

**Iteration One:**

The priority functionality to be implemented is the core functionality of the website, adding products and allowing customers to create accounts.

* Basic website design
* Add, Update, Delete
* User accounts
* Category
* Product
* Cart
* Shop
* Order
* Voucher

Iteration one will also include thorough testing of the functionality and removing errors and bugs.

**Iteration Two:**

Additional functionality will be introduced.

* Newsletter
* Photo gallery
* Upload of user pictures
* Image voting system
* Picture of the month gallery
* Contact
* User tracking - last login
* Product search

Integrating new features without breaking any of existing functionality and removing any remaining issues and bugs from the previous iteration will be a priority. Tests of existing and new features will be carried out.

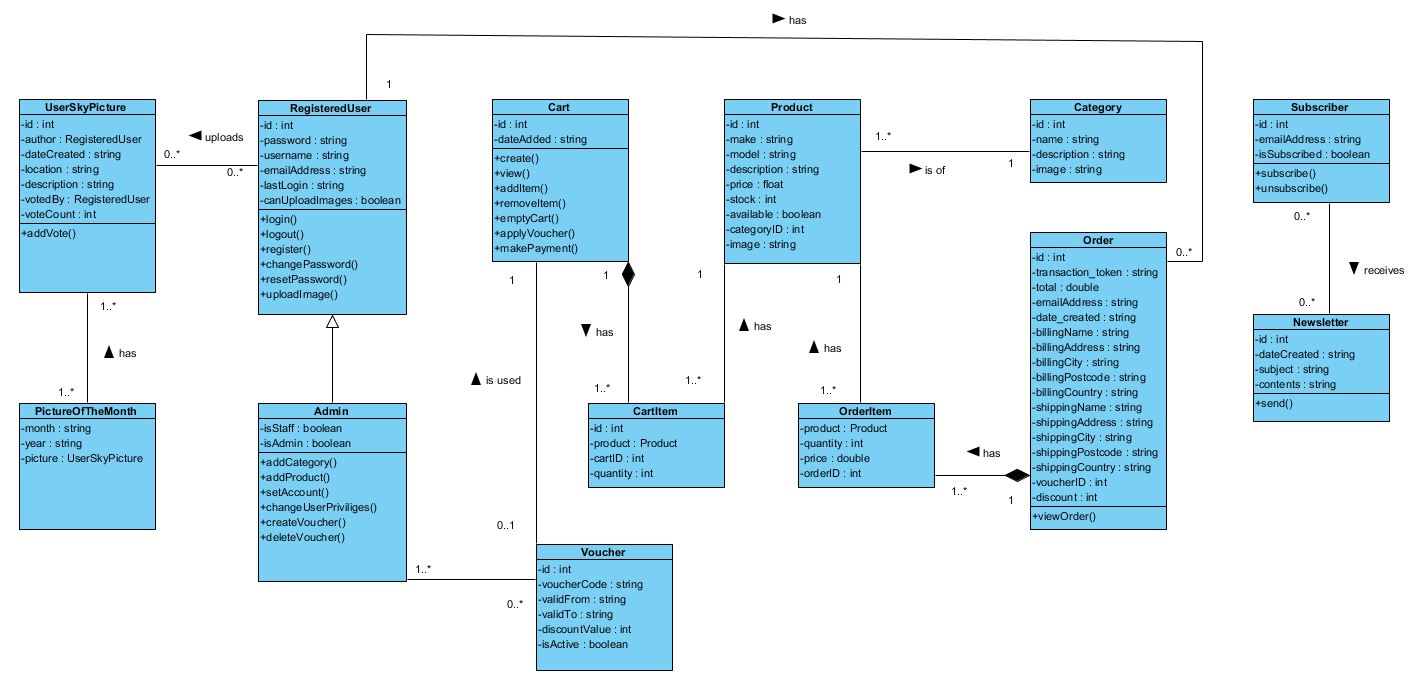
**Iteration Three:**

This iteration will focus on improving the project by enhancing it’s existing functionality such as adding further products to the database, improving UI and other minor details. Extensive testing on various browsers will be a priority at this stage.

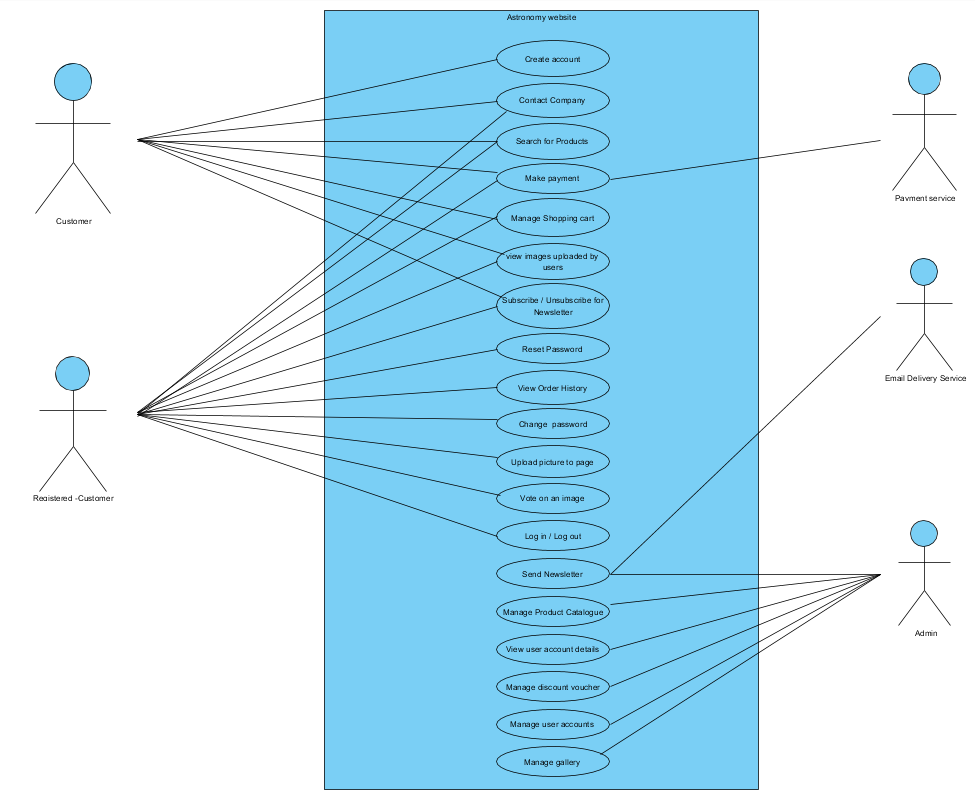
## Class and Use Case diagrams

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### Class Diagram



### Use case diagram



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## Use Case descriptions

|  |  |
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| **Create Account (ID: 52)** | |
| **Use Case:** | Create Account |
| **Actor (s):** | Customer |
| **Goal:** | To create an account on the website |
| **Overview:** | Unregistered customers can become registered customers by creating an account. The customer selects the link on the site to sign up. The customer enters a username and a password and confirms the password. The customer presses the sign up button and the system redirects them to the login page. |
| **Pre-Condition:** | Customer has access to the website, valid email address. |
| **Post Condition:** | The customer becomes registered with a user account |
| **Successful Scenario:** | 1. Customer selects the link for sign up. 2. Customer enters a username. 3. Customer enters a password. 4. Customer confirms their password. 5. Customer presses the sign up button. 6. The system creates an account for the registered customer and redirects them to the login page. |
| **Alternative Scenario (s)** | **Step 6:**   * The customer has entered an invalid username. Customer is prompted to enter a valid username. * The customer has entered an invalid password. Customer is prompted to enter a valid password. * The customer incorrectly confirmed their password and is prompted but the system to re enter their password correctly. |

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| **Contact Company (ID: 43)** | |
| **Use Case:** | Contact Company |
| **Actor (s):** | Customer, Registered Customer. |
| **Goal:** | To contact the business through the contact form. |
| **Overview:** | Customers and unregistered customers can contact the company through email by filling in a contact form on the contact page. |
| **Pre-Condition:** | User has navigated to the contact page. |
| **Post Condition:** | Customer has sent an email which the company receives. |
| **Successful Scenario:** | 1. Customer navigates to the contact page on the website. 2. Customer enters their name, their email address and their message. 3. System accepts this contact form and emails it to the company. |
| **Alternative Scenario (s)** | **Step 3:**   * If the customer does not enter a name or a message they will receive an error and allowed the chance to re-enter them. * If the customer enters an invalid email address they will receive an error and allowed the chance to re-enter a valid email address. |

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| **Search for Products (ID: 33)** | |
| **Use Case:** | Search for Products. |
| **Actor (s):** | Customer, Registered Customer. |
| **Goal:** | Search if the product is available on the website. |
| **Overview:** | The customer can search for a product name or category and be presented with search results. |
| **Pre-Condition:** | User navigated to the shop page. |
| **Post Condition:** | Search result list is displayed on the page. |
| **Successful Scenario:** | 1. Customer navigates to the shop page. 2. Customer enters product name or category. 3. The system displays all products matching search criteria. |
| **Alternative Scenario (s)** | **Step 1:** Shop page was not found on the server, user is informed about it via proper error message.  **Step 3:** User entered name or category that does not exist in database and is informed by it by a proper message. |

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| **Make payment (ID: 37)** | |
| **Use Case:** | Make payment. |
| **Actor (s):** | Customer, Registered Customer, Transaction Processing Provider. |
| **Goal:** | Pay for product(s) |
| **Overview:** | Customers make payment for items existing in their shopping cart, if they have one they can use a voucher with a discount code to receive a discount on their purchase. |
| **Pre-Condition:** | Customer navigated to their cart page, items are added to customer's shopping cart |
| **Post Condition:** | Customers paid for the items that were in their shopping cart, items are removed from the shopping cart and saved in order history. |
| **Successful Scenario:** | 1. Customer navigates to the shopping cart to make payment for previously selected items. 2. Customers can see the order details, can input voucher code if they have one, and they can proceed with checkout. 3. Customer clicks the pay button and is prompted to enter their name and shipping details. 4. Customers enter their name and shipping details. 5. Customers are prompted to enter their card details. 6. Customer enters their card details. 7. Payment is processed by Stripe. 8. Payment is successful. |
| **Alternative Scenario (s)** | **Step 4**: Customer didn't enter all the necessary shipping details and is prompted to re-enter them.  **Step 6**: Customer entered wrong card details and is prompted to re-enter them.  **Step 7**: Payment was rejected by Stripe, customer is informed about it and transaction is cancelled. |

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| **Manage Shopping Cart ID: (36)** | |
| **Use Case:** | Manage shopping cart. |
| **Actor (s):** | Customer, Registered Customer. |
| **Goal:** | View contents of customer's shopping cart, add and/or remove items from shopping cart. |
| **Overview:** | Customers, after placing the items in the shopping cart can review the contents of the cart, change the quantity of items in their shopping cart or remove one or more or all items from their shopping cart. |
| **Pre-Condition:** | User adds items to the shopping cart. |
| **Post Condition:** | Shopping cart details displayed to the user. If changed by the customer, item quantity changed in the shopping cart or item has been removed from the customer shopping cart entirely. |
| **Successful Scenario:** | 1. Customer navigates to their shopping cart. 2. Items in cart are displayed. 3. User selects an item and increases or decreases the quantity of the product they want to purchase. 4. An item/items quantity has been changed in the customer's shopping cart. |
| **Alternative Scenario (s)** | **Step 4:** No items have been put in the shopping cart, information displayed to customer about the empty cart. |

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| **View images uploaded by users (ID: 51)** | |
| **Use Case:** | View images uploaded by users. |
| **Actor (s):** | Customer, Registered Customer. |
| **Goal:** | View images uploaded by other users to the community pictures page. |
| **Overview:** | The customer can view a gallery of previously uploaded by registered customers pictures of the night sky. |
| **Pre-Condition:** | The Customer navigated to the community pictures page. |
| **Post Condition:** | Community gallery page is displayed to the customer. |
| **Successful Scenario:** | Picture gallery is displayed to customer |
| **Alternative Scenario (s)** | **Step 1**: Gallery page was not found on the server, user is informed about it via proper error message |

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| **Subscribe/Unsubscribe from Newsletter (ID: 46)** | |
| **Use Case:** | Subscribe/Unsubscribe from Newsletter |
| **Actor (s):** | Customer, Registered Customer. |
| **Goal:** | To subscribe or unsubscribe from the company newsletter email. |
| **Overview:** | Customers can subscribe or unsubscribe to receive a newsletter from the company by email. They select the newsletter sign up link on the navigation bar of the website and confirm their sign up or unsubscribe using a form on the page. The newsletter system then sends the customer an email to confirm that they have successfully subscribed. When they unsubscribe they are informed by a message on the screen. |
| **Pre-Condition:** | Customer has navigated to the sign-up page. |
| **Post Condition:** | Customer is signed up to receive newsletters or the customer is removed from the mailing list. |
| **Successful Scenario:** | 1. Customer goes to the newsletter sign up page. 2. Customer selects sign up/unsubscribe for newsletter in the form, presses send. 3. Webpage confirms they have sent the form. 4. Customer receives an email confirming they are subscribed to the newsletter. |
| **Alternative Scenario (s)** | **Step 4:** There is an error in the system and the customer does not receive a confirmation email. |

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| **Reset password (ID: 44)** | |
| **Use Case:** | Reset password |
| **Actor (s):** | Registered Customer |
| **Goal:** | The customer can reset their password. |
| **Overview:** | Registered customer has lost their password and can request a new one by clicking on the ‘forget password’ button and receiving a link by email. The customer then clicks on the link to reset the password. |
| **Pre-Condition:** | The Customer registers on the website. |
| **Post Condition:** | The customer will reset the password by receiving a link by email. |
| **Successful Scenario:** | 1. Customer Clicks on Forgot password. 2. The system will ask the customer to enter his email. 3. Customer enters their email. 4. The system will send a link to customer email. 5. The customer clicks links to enter his new password. 6. System saves the new password. |
| **Alternative Scenario (s)** | **Step 3**: System can not find customer email. Customer prompted to re-enter email address. |

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| **View order history (ID: 38)** | |
| **Use Case:** | View order history |
| **Actor (s):** | Registered Customer |
| **Goal:** | View order history. |
| **Overview:** | Customer login to his account and clicks on the order history page to see a list of all their previous orders. |
| **Pre-Condition:** | The customer must be registered and logged in. |
| **Post Condition:** | Customer can see their order history page and all their previous orders. |
| **Successful Scenario:** | 1. Customer logs into their account. 2. Customer navigates to the order history page and a list of all their previous orders is displayed. |
| **Alternative Scenario (s)** | **Step 1:** Customer is not registered in the website.  **Step 2:** Customer did not order anything yet and list of orders is empty. |

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| **Change password (ID: 39)** | |
| **Use Case:** | Change password |
| **Actor (s):** | Registered Customer |
| **Goal:** | To change password. |
| **Overview:** | Customer logs into their account and wants to change the password. By clicking on the ‘change password’ button they are redirected to the password change page, they enter the current password and the new password and enter the new password again to confirm. |
| **Pre-Condition:** | The customer must be registered and logged in. |
| **Post Condition:** | The customer has changed the password. |
| **Successful Scenario:** | 1. Customer login to his account. 2. Customer clicks the change password button. 3. Customer enters the current password. 4. Customer enters the new password. 5. Re-enter the new password to confirm. 6. Customer clicks save password button. |
| **Alternative Scenario (s)** | **Step 1:** Customer didn't log in to their account because of incorrect password, user prompted to re-type.  **Step 5:** New password and confirm password don't match, user prompted to re-type |

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| **Upload picture to page (ID: 34)** | |
| **Use Case:** | Upload picture to page |
| **Actor (s):** | Registered Customer |
| **Goal:** | To upload picture of the night sky made by user to page gallery. |
| **Overview:** | Registered users can share the pictures they made with page users by uploading them to customers' images page. |
| **Pre-Condition:** | Customer is registered and logged in |
| **Post Condition:** | Registered customer successfully uploaded their picture. |
| **Successful Scenario:** | 1. Registered customer navigates to users gallery page. 2. Customer clicks on the upload picture button. 3. Customer is redirected to the upload page. 4. Customer selects a picture from their machine to be uploaded to the page. 5. Customer adds a picture description. 6. Picture is uploaded to the page. 7. Customer is redirected to the review page. 8. Picture is displayed on the customers' images page. |
| **Alternative Scenario (s)** | **Step 7:** Picture is not displayedbecause of unsupported file type  **Step 7.1**: User can edit the picture details and upload the correct file |

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| **Vote on an Image (ID: 35)** | |
| **Use Case:** | Vote on an Image |
| **Actor (s):** | Registered Customer |
| **Goal:** | To vote a rating out of 5 stars on customer images on the customer image page. |
| **Overview:** | Registered customers can vote on images uploaded by registered customers on the customer image gallery page. |
| **Pre-Condition:** | The registered customer is signed in. |
| **Post Condition:** | The registered customer has voted on an image. |
| **Successful Scenario:** | 1. Customer enters their sign in credentials into the website. 2. System verifies the customer. 3. Customer navigates to the customer photo page. 4. Customer selects image. 5. Customer selects rating for image. 6. System accepts ratings. |
| **Alternative Scenario (s)** | **Step 3**: Customer has not logged in and cannot navigate to customer photo page. |

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| **Manage Product Catalogue (ID: 59)** | |
| **Use Case:** | Manage Product Catalogue |
| **Actor (s):** | Admin |
| **Goal:** | To add a new product or product category to the database. |
| **Overview:** | An administrator can sign into the system administration page and add a new product or new product category to the database. |
| **Pre-Condition:** | Admin has sign in credentials and the database exists. |
| **Post Condition:** | A new product or new product category has been added to the database. |
| **Successful Scenario:** | 1. Admin enters admin sign in credentials on the system administration page. 2. System verifies admin credentials. 3. Admin selects to add a new category/product. 4. Admin enters the name of the category/product and clicks save. 5. system confirms category/product has been added to the database. |
| **Alternative Scenario (s)** | **Step 4:** Category/product not added because it already exists |

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| **Send Newsletter (ID: 55)** | |
| **Use Case:** | Send Newsletter |
| **Actor (s):** | Admin, Email Delivery Service |
| **Goal:** | Send newsletter to email addresses who subscribed to receive one |
| **Overview:** | An administrator can write and send newsletters to customers who subscribed to receive them. |
| **Pre-Condition:** | Admin has sign in credentials and is logged into admin panel. |
| **Post Condition:** | Newsletter is created and sent to subscribed email addresses. |
| **Successful Scenario:** | 1. Admin enters admin sign in credentials on the system administration page. 2. System verifies admin credentials. 3. Admin selects to add a new newsletter. 4. Admin enters newsletter contents. 5. Admin sends newsletter to subscribed addresses. |
| **Alternative Scenario (s)** | **Step 5**: Communication error with the email delivery service, newsletter has not been sent |

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| **View user account details (ID: 42)** | |
| **Use Case:** | View user account details |
| **Actor (s):** | Admin |
| **Goal:** | To view details of Registered Customer accounts. |
| **Overview:** | An administrator can sign into the system administration page and view a registered customer's account details in order to assist them if any problem arises. |
| **Pre-Condition:** | Admin has sign in credentials and is logged into the admin panel. |
| **Post Condition:** | List of registered accounts and their details is displayed to the admin. |
| **Successful Scenario:** | 1. Admin enters admin sign in credentials on the system administration page. 2. System verifies admin credentials. 3. Admin selects to add a new category. 4. Admin navigates to the customers page. 5. List of registered accounts and their details is displayed to the admin. |
| **Alternative Scenario (s)** | **Step 1:** Cannot sign in due to incorrect credentials. |

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| **Manage discount voucher (ID: 57)** | |
| **Use Case:** | Manage discount voucher |
| **Actor (s):** | Admin |
| **Goal:** | To add a new voucher with a discount code that can be used for a discount on checkout, edit or remove existing voucher. |
| **Overview:** | An administrator can sign into the system administration page and add a new voucher to database edit or delete existing one. The voucher will be valid for a period of time and enable the Registered Customers to receive a discount on their purchase when used during checkout |
| **Pre-Condition:** | Admin has sign in credentials and is logged into the administration page. |
| **Post Condition:** | A new voucher has been added to the database, edited or removed. |
| **Successful Scenario:** | 1. Admin enters admin sign in credentials on the system administration page. 2. System verifies admin credentials. 3. Admin selects to add a new voucher. 4. Admin enters the name, lifespan and discount percent of the new voucher and clicks save. 5. System confirms the voucher has been added to the database. |
| **Alternative Scenario (s)** |  |

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| **Manage user accounts (ID: 61)** | |
| **Use Case:** | Manage user accounts |
| **Actor (s):** | Admin |
| **Goal:** | To manage user accounts |
| **Overview:** | An administrator can create, delete or edit user accounts. Admin can grant or revoke staff privileges to an account. Admin can also revoke the users privilege to upload a picture to the website if the user has previously uploaded offensive content. |
| **Pre-Condition:** | Admin has sign in credentials and is logged in to the admin panel. |
| **Post Condition:** | User account created or privileges changed or account is removed. |
| **Successful Scenario:** | 1. Admin enters admin sign in credentials on the system administration page. 2. system verifies admin credentials. 3. Admin selects user account to modify. 4. Admin modifies the user account. |

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| **Manage gallery (ID: 60)** | |
| **Use Case:** | Manage gallery |
| **Actor (s):** | Admin |
| **Goal:** | Manage the photos uploaded by users. |
| **Overview:** | An administrator can sign into the system administration page to find and remove from the website any offensive or inappropriate or not related to page theme images uploaded by users. |
| **Pre-Condition:** | Admin has sign in credentials. |
| **Post Condition:** | Offensive or inappropriate or not related to page theme images are removed from the website. |
| **Successful Scenario:** | 1. Admin enters admin sign in credentials on the system administration page. 2. System verifies admin credentials. 3. Admin navigates to the gallery section in the admin panel. 4. Admin finds the image that needs to be removed and clicks delete. |

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| **Log in/Log out (ID: 62)** | |
| **Use Case:** | Log in/Log out |
| **Actor (s):** | Registered Customer |
| **Goal:** | To log in or log out from the website. |
| **Overview:** | Registered Customers can log in or log out of their account on the website. The customer selects the link on the site to log in or log out. The customer enters a username to log in. The customer presses the login button and the system redirects them to the login page, or the customer presses the log out button to log out. |
| **Pre-Condition:** | Customer is a Registered Customer. |
| **Post Condition:** | Registered Customer successfully log in to their account or logged out of their account. |
| **Successful Scenario:** | 1. Registered Customer selects a link for log in and is redirected to log in page. 2. Registered Customer enters a username. 3. Registered Customer enters a password. 4. Registered Customer presses the log in button. 5. The system verifies the user and redirects them to home page. |
| **Alternative Scenarios:** | **Step 1:** The customer selects a link to log out from the page and is logged out.  **Step 5:**   * The customer has entered an invalid username. Customer is prompted to enter a valid username. * The customer has entered an invalid password. Customer is prompted to enter a valid password. |

# Iteration One Report

## Design and Development Methodology

Due to how this project is organised we found it was ideally suited to using Agile methodologies for design and development of the website. As a Scrum team, Agile allowed us to break the tasks for this iteration into three one week periods for the duration of the time allowed.

At the beginning of week one of this iteration we were able to implement the basic template for how the website is to look and carried out our first Sprint planning meeting in which we met on Microsoft Teams and decided between ourselves the organisation of the work to be done. The most critical functionality was carried out in the first Sprint and then the next meeting we reviewed our Sprint and our backlog and planned for the next Sprint.

For this iteration we focused more on having the core functionality like user accounts, online shop with card and ensuring that order history was fully functional, while the final user interface design is not decided on yet. During the next iterations, adding new functionality we will modify and improve the look and feel of the website prototype.

## Iteration One Functionality

For the project as a whole and consequently for iteration one, our team set out ambitious goals for the quantity of functions we wished to create and we believe we achieved these goals.

### Pages/Basic Design

The first step was creating the home page including a basic design, a background and a navigation bar with the pages app.

### Add/Update/Delete

One of the fundamental requirements of iteration one, we successfully implemented add/update/delete functionality and tested.

### User Accounts

New users have the ability to create user accounts. Returning customers have the ability to sign in, sign out and view their order history.

### Database (Category/Product)

The foundation of the shop app is the database and we deemed it important to have a small database of categories and products allowing us to test the functionality of the shop and build on other core apps such as cart, order, voucher. We added a small amount of basic styling which will be elaborated on further along.

### Shop

For this functionality we have the categories and products which are added through the admin page.

From the shop the user will see all our products and categories and can further the purchase process by adding items to cart.

### Cart

The cart app allows customers to review the items that they have already added to cart, and they can add or remove the quantity of items. Cart also allows customers to apply voucher codes at checkout for a discount and finally they can go through the payment by entering their card details for the checkout.

### Order

The order app is the functionality that allows the customer to transfer from having items in the cart to completing the purchase process.

### Voucher

As mentioned in the cart section, we implemented a voucher feature allowing the entering of voucher codes at checkout to receive a discount. This app was also tested for bugs and errors.

## Issues or Problems Encountered

We had a small issue at the beginning of the project, where we created superuser accounts first and after that we created a Custom User model. That resulted in a database problem, we had to delete from the database our admin accounts, migrate the database to use a new model and recreate admin accounts. Besides a few typos we didn’t encounter any other problems.

## Testing

We performed a number of tests using Selenium IDE alongside manual tests carried out when new functionality was implemented or when an existing functionality or user interface modified.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Test Case Matrix** | | | | | |
| **Test Case No** | **Test Case Name** | **Input** | **Expected Outcome** | **Actual Outcome** | **Result (Pass/Fail)** |
| 1 | Sign up | Username: test005  Email: test002@gmail.com  Password: K123456s  Confirm Password: K123456s | Your account has been successfully created | Your account has been successfully created | Pass |
| 2 | Login | Username: Kamel  Password: K123456s | Login to the home page. WELCOME, Kamel | Login to the home page. WELCOME, Kamel | Pass |
| 3 | Wrong password | Username: Kamel  Password: asdasd | Please enter a correct username and password. Note that both fields may be case-sensitive. | Please enter a correct username and password. Note that both fields may be case-sensitive. | Pass |
| 4 | Add Product to cart | Add product to cart | product added to shopping cart | product added to shopping cart | Pass |
| 5 | Remove product from cart | Remove product from shopping cart | Your shopping cart is empty | Your shopping cart is empty | Pass |
| 6 | Apply voucher | Code: k123k222 | Applied "k123k222" voucher (10% off) | Applied "k123k222" voucher (10% off) | pass |
| 7 | Order | Email: [x00167381@mytudublin.ie](mailto:x00167381@mytudublin.ie)  Card Number: 4242424242424242  Expired date: 04/2024  CVC: 424 | Thanks for placing your order.  You order number is: 5 | Thanks for placing your order.  You order number is: 5 | Pass |
| 8 | Order History | Go to Order History page | Order Number: 5  Order Date: 02 Mar 2021  Total Amount: 1500  Status: Complete  Action: View order | Order Number: 5  Order Date: 02 Mar 2021  Total Amount: 1500  Status: Complete  Action: View order | Pass |
| 9 | Out Of Stock | Buy all the items from any product that we have in the shop. | Show us in the shop this product Out Of Stock | Show us in the shop this product Out Of Stock | Pass |

# Iteration Two Report

## Residual Bugs/Limitations

As required we included tests from iteration one even though we had no known bugs or errors going into iteration two. In the first two iterations of the website the main focus has been on implementing functionality and ensuring that it works correctly with an aim to honing the design in the final iteration.

Our team was again ambitious in our plans and implemented a number of apps which greatly enhanced the functionality of the website.

## Photo Gallery

One of the core functions of the website was to create a photo gallery for astrophotography images and build other functions onto this to expand the customer experience.

## Upload of User Pictures

Registered customers are able to upload their own photos of the sky. Administrators are able to remove inappropriate images.

## Image Voting

Registered customers are also able to click a vote for an image they like, those votes would be gathered and used in the following application.

## Picture of the Month

The idea behind this application is to use the image voting system to and based on the number of votes given to each picture each month, pick the one with the most votes and place it in a Picture of the Month gallery.   
Due to time constraints and few issues encountered with the gallery app, the Picture of the Month functionality was delayed. As of the time of writing this document, works on this functionality are underway and are expected to be finished during project iteration 3, within the next few days.

## User Profile

A user can have a profile on their account for their role along with a user number. This includes the ability to upload a profile image and the ability for the user to update their profile.

User profile will be created when the user signs up on the website, in the profile there is a default image for user and user role will be as Customer.

## Contact Form

A web form allowing customers to send emails to the company by entering their email and subject and the Message.

## Newsletter

Newsletters are very commonly used in e-commerce websites, so we decided to implement one. This system allows a user to choose to sign up to a newsletter from the company with special offers, company news by entering their email address into a simple web form and sending them an email with a link to confirm subscription. The system also features administration facilities on the django admin page.

## Product Search

The team added a basic product search functionality allowing customers to search in the online shop.

## Issues or Problems Encountered

There was an issue involving the newsletter app allowing people who sign up to the newsletter to confirm that they wish to subscribe. The system sends the user an email containing a link to click which forwards them to a HTML page which confirms subscription. This HTML link was returning an error stating that the URL was not found. Upon debugging it was found that in the ‘views.py’ file the URL ‘/confirm/’ was duplicated in the code. It was removed and fixed the issue.

In the product search app an issue was found which would not allow the user to view a product after it was searched for. The problem was found to be in the use of URL’s in the ‘search.html’ template. The wrong method for the URL to link to the product was used, ‘slug’ was implemented and the error was fixed.

In the gallery app due to a mistake in class design, there was a problem with extracting data from the database in HTML frontend. Class relations were changed and the problem was solved. Users can now vote for their favourite pictures.

## Plans for Iteration Three

We were encouraged by our supervisor to push the project even further and if possible in the remaining time, add more functionalities like page and user moderation from an admin special page. We are also considering adding social media links, cookies notice, two factor authentication, as well as many improvements and input validations to already existing features. We will also work on aesthetics of user interface and we will continue testing of existing features and UI elements.

## Testing

We performed a number of new tests using Selenium IDE alongside manual tests for iteration two when new functionality was implemented and also when an existing function or user interface was modified. We also run the test cases for iteration one to ensure compatibility with new functionality with iteration two.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Test Case Matrix** | | | | | |
| **Test Case No** | **Test Case Name** | **Input** | **Expected Outcome** | **Actual Outcome** | **Result (Pass/Fail)** |
| 1 | Sign up | Username: Test00001  Email: test01@gmail.com  Password: K123456s  Confirm Password: K123456s | Your account has been successfully created | Your account has been successfully created | Pass |
| 2 | Login | Username: Kamel  Password: K123456s | Login to the home page. WELCOME, Kamel | Login to the home page. WELCOME, Kamel | Pass |
| 3 | Wrong password | Username: Kamel  Password: asdasd | Please enter a correct username and password. Note that both fields may be case-sensitive. | Please enter a correct username and password. Note that both fields may be case-sensitive. | Pass |
| 4 | Add Product to cart | Add product to cart | product added to shopping cart | Product added to shopping cart | Pass |
| 5 | Remove product from cart | Remove product from shopping cart | Your shopping cart is empty | Your shopping cart is empty | Pass |
| 6 | Apply voucher | Code: k123k222 | Applied "k123k222" voucher (10% off) | Applied "k123k222" voucher (10% off) | pass |
| 7 | Order | Email: [x00167381@mytudublin.ie](mailto:x00167381@mytudublin.ie)  Card Number: 4242424242424242  Expired date: 04/2024  CVC: 424 | Thanks for placing your order.  You order number is: 5 | Thanks for placing your order.  You order number is: 5 | Pass |
| 8 | Order History | Go to Order History page | Order Number: 5  Order Date: 02 Mar 2021  Total Amount: 1500  Status: Complete  Action: View order | Order Number: 5  Order Date: 02 Mar 2021  Total Amount: 1500  Status: Complete  Action: View order | Pass |
| 9 | Out Of Stock | Buy all the items from any product that we have in the shop. | Show us in the shop this product Out Of Stock | Show us in the shop this product Out Of Stock | Pass |
| 10 | Gallery vote | User can go to Gallery page and vote up or down to images | Total vote for the image will increase or decrease the total vote number | Total vote for the image will increase or decrease | Pass |
| 11 | Profile | User can have a profile and update their profile | User profile has been updated | User profile has been updated | Pass |
| 12 | Newsletter | Unregistered email can send a newsletter | Newsletter send to the email | Newsletter send to the email | Pass |
| 13 | Contact\_us | User can contact with us by filling contact form:  Email: [kamel.sh70@gmail.com](mailto:kamel.sh70@gmail.com)  Subject :  Hi there  Message:  Hello world | Contact form have been sent successfully | Contact form have been sent successfully | Pass |
| 14 | Search category | Write in the search category bar “Filters” | Show us the all the products in the filters category | Show us the all the products in the filters category | Pass |
| 15 | Search Product | Write in the search product bar “celestron moon 2” | Show us the celestron moon 2 product | Show us the celestron moon 2 product | pass |

# Iteration Three Report

The main focus of Iteration 3 was to thoroughly test the functionality already added and hone the design elements of the website.

## Iteration Three Functionality

We added a site management functionality to the project. Admin users can manage all aspects of the page directly from the page, without the need to access django admin page.

## Testing

### Test Plan

We began testing in iteration one and continued the tests in the following iterations to ensure that no functionality stopped working, whilst adding new tests for new functionality added along the way.

### Test Cases and Results

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Test Case Matrix** | | | | | |
| **Test Case No** | **Test Case Name** | **Input** | **Expected Outcome** | **Actual Outcome** | **Result (Pass/Fail)** |
| 1 | Sign up | Username: Test00001  Email: test01@gmail.com  Password: K123456s  Confirm Password: K123456s | Your account has been successfully created | Your account has been successfully created | Pass |
| 2 | Login | Username: Kamel  Password: K123456s | Login to the home page. WELCOME, Kamel | Login to the home page. WELCOME, Kamel | Pass |
| 3 | Wrong password | Username: Kamel  Password: asdasd | Please enter a correct username and password. Note that both fields may be case-sensitive. | Please enter a correct username and password. Note that both fields may be case-sensitive. | Pass |
| 4 | Add Product to cart | Add product to cart | product added to shopping cart | Product added to shopping cart | Pass |
| 5 | Remove product from cart | Remove product from shopping cart | Your shopping cart is empty | Your shopping cart is empty | Pass |
| 6 | Apply voucher | Code: k123k222 | Applied "k123k222" voucher (10% off) | Applied "k123k222" voucher (10% off) | pass |
| 7 | Order | Email: [x00167381@mytudublin.ie](mailto:x00167381@mytudublin.ie)  Card Number: 4242424242424242  Expired date: 04/2024  CVC: 424 | Thanks for placing your order.  You order number is: 5 | Thanks for placing your order.  You order number is: 5 | Pass |
| 8 | Order History | Go to Order History page | Order Number: 5  Order Date: 02 Mar 2021  Total Amount: 1500  Status: Complete  Action: View order | Order Number: 5  Order Date: 02 Mar 2021  Total Amount: 1500  Status: Complete  Action: View order | Pass |
| 9 | Out Of Stock | Buy all the items from any product that we have in the shop. | Show us in the shop this product Out Of Stock | Show us in the shop this product Out Of Stock | Pass |
| 10 | Gallery vote | User can go to Gallery page and vote up or down to images | Total vote for the image will increase or decrease the total vote number | Total vote for the image will increase or decrease | Pass |
| 11 | Profile | User can have a profile and update their profile | User profile has been updated | User profile has been updated | Pass |
| 12 | Newsletter | Unregistered email can send a newsletter | Newsletter send to the email | Newsletter send to the email | Pass |
| 13 | Contact\_us | User can contact with us by filling contact form:  Email: [kamel.sh70@gmail.com](mailto:kamel.sh70@gmail.com)  Subject :  Hi there  Message:  Hello world | Contact form have been sent successfully | Contact form have been sent successfully | Pass |
| 14 | Search category | Write in the search category bar “Filters” | Show us the all the products in the filters category | Show us the all the products in the filters category | Pass |
| 15 | Search Product | Write in the search product bar “celestron moon 2” | Show us the celestron moon 2 product | Show us the celestron moon 2 product | pass |
| 16 | Cookies | Accept cookies | Log in to the website and accept cookies | Log in to the website and accept cookies | pass |
| 17 | user | Sign up for new user and login with same user | Create a new user and login and landing on the right pages with adding product and remove it from cart | Create a new user and login and landing on the right pages with adding product and remove it from cart | Pass |
| 18 | console | Login with Admin  username:Kamel  Password: K123456s | Login with admin and go through and landing on the right pages on the Console (management page) | Login with admin and go through and landing on the right pages on the Console (management page) | Pass |

We couldn’t conduct the test of making the purchase using Selenium IDE, because of the limitations of the tool - we weren’t able to put in the card details - but we tested payment functionality many times manually, and transactions went through.

# Project Achievements

The largest achievement was how our team managed to complete the ambitious plans we outlined in the development stage. We were able to complete all the tasks we planned for the project and many more. These aspirations often led to complications, difficulty and stress but through teamwork and determination we were able to accomplish our goals. Excellent teamwork was a mark of success for the project, with each member willing and able to help the others as much as possible as collaboration is vital in a large undertaking such as this.

## What can be improved and implemented in the future

Given more time there are a number of areas that we wished to implement or improve. In the shop a more advanced search would have been preferred, along with the ability to order the products on the page by price high-to-low, low-to-high and so forth, but time did not allow the chance to implement these. In the newsletter app the confirmation request email sent to the user would have benefited from some nice styling with images and logos, this is something to explore further. We added a cookies notification banner in iteration three but it did not function correctly so we were forced to remove it as we could not fix it in time.

Cookies notice is another piece of functionality we worked on, but we were forced to comment it out from the final prototype, as we were not able, even after contacting the application developer for guides, to make it work as intended.

For increased security of the website for staff and users, a two factor authentication could be added. For staff to make sure that no one not authorised would change the contents of the website, and for customers to provide them with additional security, if they decide to save their payment details. We did make an attempt to introduce this system, but due to lack of sufficient documentation and guides of the external app we wanted to use, we had to unfortunately drop this idea.

# Reference List

Twilio. (2020) Build an Email Newsletter with Django and Twilio Sendgrid. Available at:

<https://www.twilio.com/blog/build-email-newsletter-django-twilio-sendgrid> (Accessed: 1 February 2021).

Django-cookie-law. (2021). Available at: <https://pypi.org/project/django-cookie-law/> (Accessed: 15 March 2021).

Code used from labs or previous CA’s:  
Semester 3 - Various labs by Patricia Magee - mostly lab 6 code

Semester 3 CA2 by Andrzej Zero and Kamel Shaaban - contact app

Bootstrap 4 carousel:  
<https://www.w3schools.com/bootstrap4/bootstrap_carousel.asp>

Bootstrap 4 flip-cards:  
<https://www.w3schools.com/howto/howto_css_flip_card.asp>

## Other materials accessed during development

Django tutorials:  
<https://www.youtube.com/playlist?list=PL-osiE80TeTtoQCKZ03TU5fNfx2UY6U4p>

<https://morioh.com/p/81055c4dc7a6> - star rating tutorial

Visited websites to take inspiration and materials from:  
<http://www.astronomy.ie/telescopehelp/>

<https://ktectelescopes.ie>

<https://astronomynow.com/>

<https://www.astroshop.eu/>

<https://www.celestron.com/>

<https://eu.telescope.com/home.jsp>

<https://www.harrisontelescopes.co.uk>

# Appendix

## Supervisor Meeting Minutes

### Week 1

**Date**: Wednesday 27/01/21

**Present**: Kevin Bayliss, Kamel Shaaban, Gavin Moloney, Andrzej Zero

**Items Discussed**

Kevin agreed that our project idea is suitable for the assignment. Next, Kevin outlined each of the stages, requirements and delivery dates for the project and for the first stage deliverable.

**Next Steps**

The group is to continue using Azure Devops to develop the project.

The group is to attend the SCRUM meeting with Karen Nolan on Tuesday 2nd February.

Kevin will look at the class diagrams of previous group projects to confirm the correct type.

All parties will attend the next supervisor meeting on the Wednesday 3rd February

### Week 2

**Date**: Wednesday 3/02/21

**Present**: Kevin Bayliss, Kamel Shaaban, Gavin Moloney, Andrzej Zero

**Items Discussed**

Kevin asked the team to share the project work on use cases assigned to members, and Kevin asked us to add him on our project on Azure DevOps.

Kevin then asked us to add screenshots for the Use Case diagram and add a link for the hard copy.

**Next Steps**

The group will continue to work on use cases using Azure DevOps and Visual Paradigm Standard.

In the next meeting, we will share our screen and go over the use cases and what we did so far on the project document.

### Week 3

**Date**: Wednesday 10/02/21

**Present**: Kevin Bayliss, Kamel Shaaban, Gavin Moloney, Andrzej Zero

**Items Discussed**

Team presented to Kevin draft of Project Plan and Requirements, use case diagram and class diagram. The team was advised to consider adding the following use cases:  
-manage image gallery  
-moderate user account   
We discussed Project Plan and Requirements, scope of the project and iteration goals. Team is confident that they can produce the core – e-commerce – functionality of the project within the first iteration time frame.

**Next Steps**

Students will continue using Azure Devops to develop the project.

The group is to finish work on the Project Plan and Requirement document before Friday, 12/02/2021.

### Week 4

**Date**: Wednesday 17/02/21

**Present**: Kevin Bayliss, Kamel Shaaban, Gavin Moloney, Andrzej Zero

**Items Discussed**

Kevin asked the team for their next step with the project, the team informed Kevin that the next step is to divide out the work for Iteration one evenly between the group and to have some functionality before the next meeting.

**Next Steps**

To share out the work for iteration one and have some functionality for Kevin to view before the next meeting on the 24th of February.

### Week 5

**Date**: Wednesday 24/02/21

**Present**: Kevin Bayliss, Kamel Shaaban, Gavin Moloney, Andrzej Zero

**Items Discussed**

Kevin asked the team about the progress of the project, the team informed Kevin about current status and work done by team members over last week. The team is confident that they are on track and will meet the desired goal for this iteration. Kevin shared with the team links to django tutorials, they are much appreciated. Team made a short presentation of the current state of the project and working functionalities.

**Next Steps**

Continue work on the project, add 3 planned applications, next presentation of the project state will happen at next week's meeting.

### Week 6

**Date:** Wednesday 3/03/2021

**Present:** Kevin Bayliss, Kamel Shaaban, Gavin Moloney, Andrzej Zero

**Items Discussed**

Kevin asked us to share the screen and go through what we have done so far for iteration 1.

We went through the shop app and we added items to cart and went through the payment and it was successful.

Andrzej sent a meeting chat screenshot for the payment from the stripe website.

Then Kevin asked us to show him the order history and in the order history we viewed the view order.

And then Kevin asked us to buy all the items on the shop to show him if it will show on the website that item will be out of stock

We asked Kevin if we need permission for the images that we will take from the internet, and how many products and categories we should have on our project.

**Next Steps**

Continue work on the iteration 1 document and finish it and upload it on the time. Next meeting we will talk about iteration 2.

### Week 7

**Date:** Wednesday 10/03/2021

**Present:** Kevin Bayliss, Kamel Shaaban, Gavin Moloney, Andrzej Zero

**Items Discussed**

Kevin requested that the team send him a progress report by email next week (17th March) due to a bank holiday that day, and then to demonstrate the latest iteration the following week (24th March).

**Next Steps**

Continue developing iteration two and it’s required paperwork and carry out the steps as requested above.

### Week 8

**St. Patrick’s Day Email:**

**Date:** Wednesday 17/03/2021  
  
St. Patrick’s Day email:  
We would like to inform you about the progress we made since last week. We have built a newsletter app, a user profile page where they can see when they were last logged in and upload a profile picture and gallery for user made pictures of the sky - add, edit, delete. Things left to do are search for items in the store and gallery for most voted pictures this month. The last one might take a bit longer and development of that might continue in the next iteration.

### Week 9

**Date:** Wednesday 24/03/2021

**Present:** Kevin Bayliss, Kamel Shaaban, Gavin Moloney, Andrzej Zero

**Items Discussed**

We demonstrated functionality added and upgraded. Gallery of pictures uploaded by users is functional, shop search was improved. We discussed contact form mandatory fields and email validation for newsletter subscription, also case sensitivity for contact form and newsletter. Kevin suggested email validation and error catching pages - like “Sorry not found” or other custom made error pages. We discussed page layout comparing our page to other astronomy equipment sales pages. Kevins asked us what more can we do for the project to make it stand out more and suggested that we build an application that will allow the admin or moderator user to manage the page directly from the website, not from the django admin panel. We agreed to do that over Easter break.

**Next Steps**

Team proposed a plan for next week - css improvements, finishing existing functionality, testing and website management.

### Week 10

**Date:** Wednesday 14/04/2021

**Present:** Kevin Bayliss, Kamel Shaaban, Gavin Moloney, Andrzej Zero

**Items Discussed**

We presented the shop management page - it wasn’t fully finished yet but it was close to being finished. Gallery voting system and shop search improved. We discussed a problem with newly added cookies functionality. We spoke about tests for the project and additional apps to make the project stand out. We tried to add two factor authentication for admin users, but we didn’t manage to make it work fully, so we dropped the idea. We presented the gallery voting system and we discussed our plans for the next two weeks - mostly fixes, page styling.

**Next Steps**

Finish management page, finish styling, do last tests, work on project document and video presentation.

### Week 11

**Date:** Wednesday 21/04/2021

**Present:** Kevin Bayliss, Kamel Shaaban, Gavin Moloney, Andrzej Zero

**Items Discussed**

Kevin asked the team for a demonstration of any functionality and to outline what items are still outstanding to complete, Kevin was given a demonstration by Andrzej of the console page functionality and informed that the team have some small items to complete on the website such as styling and pudding more shop items, along with the project paperwork.

**Next Steps**

The teams next steps are complete the project and paperwork before the deadline and to prepare our individual screencasts for upload and to be prepared for the team interviews which will take place next week.

### Week 12

Pre upload project update email:

**Date:** Monday 26/04/2021

**Present:** Kevin Bayliss, Kamel Shaaban, Gavin Moloney, Andrzej Zero

**Items Discussed**

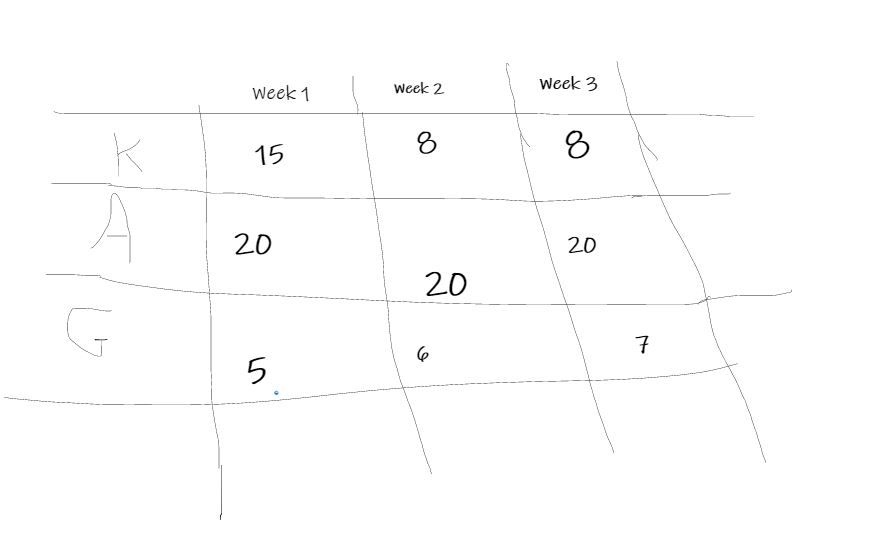
We are finishing the work on the project, mostly documentation now, some minor css changes and we are looking for any remaining small mistakes, adding category descriptions etc.

Since our last meeting we worked on styles a bit, management pages are done, shop page received a slider to give a bit more life to the page. We added products and categories. Many Selenium IDE tests were done, where IDE had some limitations, we did plenty of manual tests - everything looks good. We added a few unit tests as well. We should be done with everything shortly.

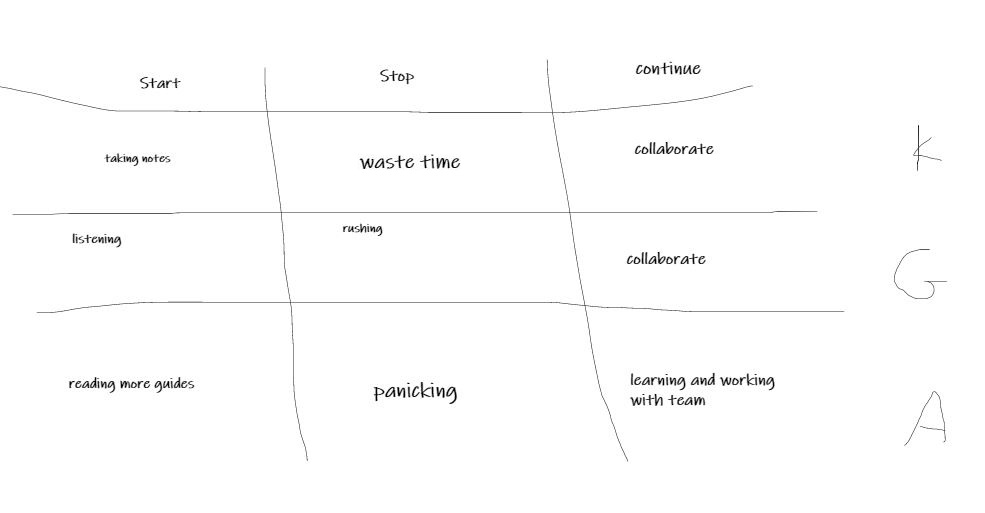
# Scrum Meetings

Our team attended four scrum meetings where we were encouraged to collaborate in order to plan for the next iteration of the project using various tools such as MS Teams and using the boards in Azure DevOps.

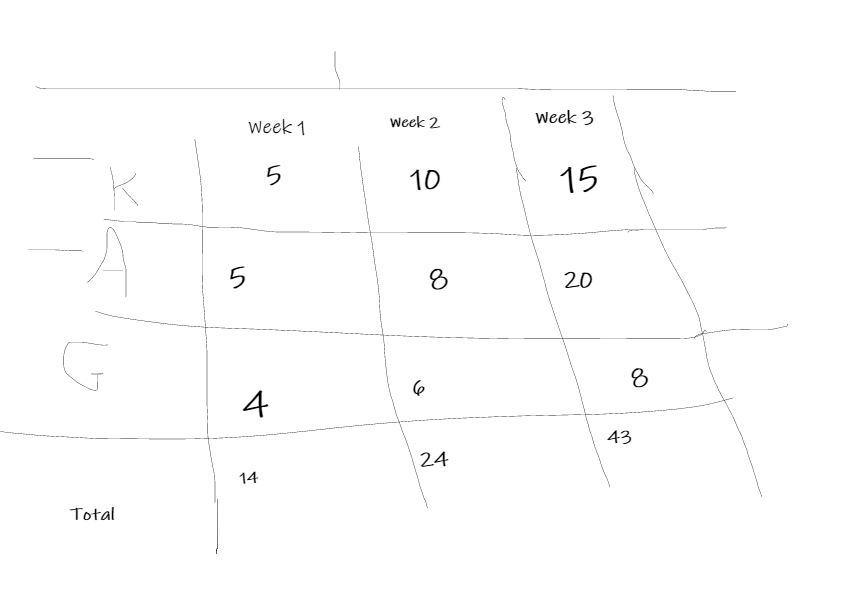
Scrum One our predicted time commitment:



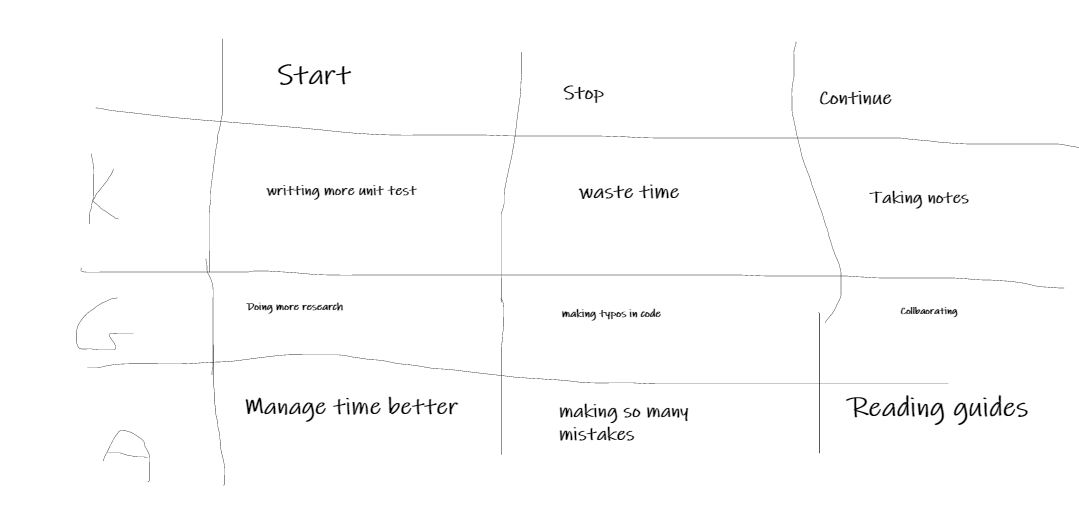
Our reflections after this sprint and what we think we should improve for the next one:



Scrum Two, our predicted time commitment:



Our reflections after this sprint and what we think we should improve for the next one:



# Student Compliance with Academic Integrity

All students are expected to complete their courses in compliance with University regulations and standards. No student shall engage in any activity that involves attempting to receive a grade by means other than honest effort, for example:

1. No student shall complete, in part or in total, any examination or assignment for another person.

2. No student shall knowingly allow any examination or assignment to be completed, in part or in total, for himself or herself by another person.

3. No student shall plagiarize or copy the work of another and submit it as his or her own work.

4. No student shall employ aids excluded by the instructor in undertaking course work.

5. No student shall knowingly procure, provide, or accept any materials that contain questions or answers to any examination or assignment to be given at a subsequent time.

6. No student shall procure or accept assignments from any other student from current or prior classes of this course.

7. No student shall provide their assignments, in part or in total, to any other student in current or future classes of this course.

8. No student shall submit substantially the same material in more than one course without prior authorization.

9. No student shall alter graded assignments or examinations and then resubmit them for regrading.

10. All programming code and documentation submitted for evaluation or existing inside the students computer accounts must be the students original work or material specifically authorized by the instructor.

11. Collaborating with other students to develop, complete or correct course work is limited to activities explicitly authorized by the instructor.

12. For all group assignments, each member of the group is responsible for the academic integrity of the entire submission.

**N.B to be filled out by each member of the team.**

By including my name in the form below, I declare that I understand and will abide by the University Regulations and Policies covering Academic Integrity. I accept that each member of the group is responsible for the academic integrity of the entire submission. I will retain a copy of this agreement for future reference.

|  |  |  |  |
| --- | --- | --- | --- |
| **Student Name (1):** | **Gavin Moloney** | **Student No.:** | **X00166625** |
| **Student Name (2):** | **Kamel Shaaban** | **Student No.:** | **X00167183** |
| **Student Name (3):** | **Andrzej Zero** | **Student No.:** | **X00166801** |
| **Module title:** | **Year 2 Project** | | |
| **Programme Title:** | **BSc (Hons) Computing with Software Development** | | |
| **Date: DD/MM/YYYY** | **26/04/2021** |  | |