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# DESIGN AND DEVELOPMENT OF E-COMMERCE WEBSITE

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Ahkar Hein

M00678794

Supervisor - Mark Springett

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degree of Bachelor of Science.

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## Abstract

This venture is tied in with structuring an E-trade site for a business that sell amusement items, for example, motion pictures, movies, and recreations. The last yield of the undertaking will be a proof of idea for web based shopping store with model powerful site. The business situation is made up theoretically with genuine issues and issues considered at the top of the priority list. Business openings, points and targets were likewise recognized. Inquires about and writing audits are likewise led and prerequisites are assembled at investigation stage. The framework is structured with references to comparative frameworks and the projects created and actualized.

## Chapter 1

### 1.1 Rational

#### 1.1.1 Current Business Introduction

#### 1.1.2 History of Quantum Technology

Quantum Technology company was founded in January of last year and it's was located in London, England. This company is selling the all kind of electronic product such as air conditional, PC, laptop, TV and etc. At first, this company was known only in London. However, this company has a delivery service that is when the customer is order the product by using the phone call, the worker of this company is send this product and collect the money. If the product is need to install in customer's home, they can install it. The delivery service is only in London. Furthermore, this company has many staff who are record the income and outcome of this company using by Microsoft excel. The future plan of this company is year and year out accomplishment in work. We hope it will be well known all over the United Kingdom and European Union.

#### 1.1.3 Current Process of Quantum Technology

Quantum Technology works various kind of electronic product as well as computer and accessories. This company has different kind of brand and category. When the new product arrived, the staff recorded the information of this product in Microsoft Excel file. For example, when the latest gaming laptop arrived, the accountant recorded information such as brand of this laptop, specification of this laptop, price of this laptop and also they recorded the number of laptop like how many laptop arrive to company. In this process, When the customer would

like to buy the product, firstly they must come to shop and see the product what they want. If they need to ask about any other information, customer can be ask to our staff and then they decided to buy or not. If they want to buy, they will purchase it by cash or credit or debit card. After that, the accountant record the require information and give the voucher to customer. When the customer who are from London, they can buy the product by phone call. The delivery can send the product to customer's home and collect the money. Customer need to pay the delivery cost.

## 1.2 Issue

There are some issues in the process of this company. This issues are as follow.

### Selling the Product

When the customer need to buy the product, they must come to store and ask about information of this product to staff. Therefore, company need a lot of employee to explain the information of product. Consequently, it will waste of time for customer and also company waste a lot of money to pay the employee.

### Purchasing the product

When the customer purchase the product, accountant must be recorded the information. Accountant manually put the information to excel file. In that case, there could be some error in excel file. For instance, when the accountant recorded the information, they might be make some mistake during recording. Moreover, this excel file is very low security and easily to destroy.

## 1.3 Description

### Aim & Objective

#### Aim

The main aim of this company is that they want to change the computer base system and also they want to create online website to promote and sell their product. In this system, they want to register the detail information of product such as brand, category and they want to record the information in database. Then, they would like to show all kind of information and

specification of their product as well as they want to sell their product in website. For the customer information, they want to record in database. For example, when customer want to buy the product, they must be register after purchase the product. When the customer register, they must put their information such as name, address, email and so on. While the customer shopping in website, they can easily to see the detail information of the product. And also customer can easily to buy the product from website. All of the information will be save in database. For the admin, they want to manage all of the information of product and also they can manage some statistics of company. They also want to make extremely high security for admin's application. This are the main aim of Quantum Technology company.

## Objective

1. Planning the project
2. Creating the form design by using HTML5 and CSS.
3. Implementation the coding for consumer and admin by using PHP
4. Testing the software

## 1.4 Methodology

To be creating this web application, we are intended to use Dynamic System Development Method (DSDM). The brief definition of this methods are as follow.

### 1.4.1 Dynamic System Development Method (DSDM)

DSDM is Dynamic System Development Method that is framework that is comprised of eight principles, a lifecycle and items, jobs and obligations and a few best practical strategies. This method is turned into extensively used in area that is not only for I.T and " System Development".

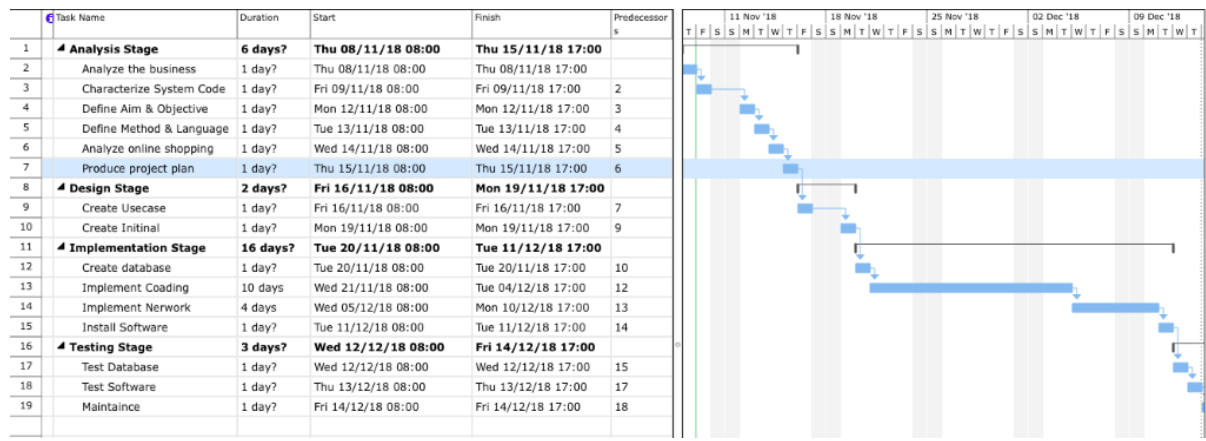
## Deliverable

When we start this project, we expect the output of this project. The main output of this project is website and web application for admin that have very strong security.

## Schedule

The schedule for the whole project is presenting by Gantt Chart.

## Gantt Chart



## Resources

To be creating the Quantum Technology website, we might be used some resources.

Hardware: We have to use computer with high performance.

Software : We will use MAMP Pro for PHP server and Sublime Text for implementing the Coding. We also use Microsoft Word to make a project proposal and Project 365 to make Gantt Chart. Moreover, We also use google chrome to view and test the website.

## Chapter – 2 Literature Review for Quantum

### Technology

#### 2.1 Introduction

In these day, E-commerce website is very popular and helpful for the business organisation especially in retail store. E-commerce web designs gets opportunity to give a service to the customer 24 hours. E commerce website is a processing the management of production, promoting ads, sale, guarantee and payment of the order/product and service over the computer network. E commerce which is recognize through performing the one or more business transaction in the electronic environment (Iskan, H et al 2009).



Therefore, to be using the e commerce website in the business organisation, this business will be popular and get the a lot of loyalty customer. Moreover, people can buy the product anytime from e commerce website. They can also use their credit card or debit card to purchase the product from website. Therefore, e commerce are significantly important for business in these day.

Likewise, in the Quantum Technology project, we are creating the e commerce website for this organisation. When we make the website, we have to choose methodology, programming language and database software. Thus, for the methodology, we choose dynamic system development method (DSDM), for the programming, we choose object orient (PHP) and for the database, we choose MySQL. These methodology, programming language and database software of literature review are as below.

## 2.2 Methodologies review

### 2.3 Dynamic System Development Method (DSDM)

DSDM is agile method which is focus on project lifecycle and it was created in 1994. In the accepted sense, DSDM is not a method but framework of control for RAD which is guidance on how to apply those control. DSDM can illustrates project management, prototyping, configuration management, testing, quality, estimating, timeboxing, team structure and risk management in all RAD environment. In DSDM, most of the principle are based on the RAD. In addition, DSDM is more rapid than waterfall. DSDM designs for “industrial-strength” system that meet user requirement and it can completely extendable and maintainable over long period of time. There is a reason why DSDM is more rapid than waterfall. In DSDM, when developer or user make misunderstanding and wrong direction, they can identified and correct early. In waterfall, when they make like that, they cannot be identified and correct during when it is working. (Stapleton, J 1997)

### 2.4 Principle of DSDM

The basic theory of DSDM is that nothing is built perfect in first time but that eighty percent of clarification can be composed in twenty percent of time, it would take to compose the entire solution. This theory is established on the 19<sup>th</sup> century economic, Pareto’s Law, he argue that the final twenty percent of problem solution takes a lot of issues solving effort. It is the exemption handling schedules and additional feature that increased advancement time excessively. Fundamental functionality can as a rule obliged moderately effectively in ITproject. By concentrating on rapid delivery of the essential activity, useful frameworks can be delivered rapidly, therefore decreasing the cost and time of projects.

Along with this theory, DSDM is based on the number of principles which is how the project is undertaken. There are nine principles and there are as follow:

1. Active user inclusion in the system development process is crucial.
2. The DSDM team members have to allow to make decisions.
3. The target of project is usually delivery of product instead of on activities.
4. All deliverable is fit for its company goals.
5. Alternative and profit development is extremely powerful way to create system.
6. All changes are reversible and no requirements are frozen.
7. Baselineing of high-level system requirements.
8. Testing is integrated throughout the development cycle.
9. Development is necessary when collaborative and co-operative. (Howard, A 1997).

## 2.5 Programming Language Review

### PHP

PHP means Hypertext Pre-processor and it is an open source software, server-side and scripting language designed for web development application. Scripting language means a program that is line of code written for the automation of tasks. PHP can be use in all major operation system such as Windows, Mac OS and Linux which is compatible with major web server like Apache. In addition, PHP can be use the most popular software like WordPress, Joomla and also Ecommerce shopping cart. PHP is too easy for beginner programmer because it has a similar syntax such as C++ and C (Griffin, L).

### Advantages of using PHP

There are a lot of benefit while using the PHP. These advantages are as follow:

- **Free of Cost:** PHP is open sources software and updated by the organisation of developer from around the world. Thus, when you use the PHP, you do not need to pay for license and all of the component are freely to use and distribute.
- **Easy:** PHP has readable and their syntax is very easy and understandable. PHP code is unclosed in the HTML source code and its based on the C and C++. Thus, for the programmer, they are very familiar and comfortable to coding with it.
- **Platform Independent:** PHP can be used to run in all platform such as Mac OS, Linux and Windows.
- **Support all Major Web Server:** PHP can be used in all kind of major web server like MySQL, dBase, IBM DB2 and etc.

- **Faster Development:** PHP own memory so the loading time and workload is very fast from the server. Therefore, web application such as E commerce, CRM and CMS are developed very fast by using it.
- **Secure:** PHP has multiple layer of security and prevent threats.
- **Large Community:** PHP has very large organisation of programmer who regular update tutorial, documentation, online help and FAQs (Peter, W 2015).

### Disadvantages of using PHP

There are some disadvantages facts while using the PHP. These facts are as follow:

- **Weak Type:** Programmers are carelessly surprised by the implicit conversation so the unexpected bugs are leading. For instance the strings “1000” and “1e3” are equal because they are implicitly cast to floating point number.
- **Not Suitable for large application:** The maintenance of PHP is very hard if it is not very modular.

### 2.6 Comparison between ASP.NET and PHP

No	ASP.NET	PHP
1	Web application framework developed by Microsoft	Language called Server-side scripting which is developed by Lerdarf.
2	Support large to medium size business organization's application	PHP support small to medium sized business's web application.
3	License cost need to pay.	Open Source Software
4.	ASP.NET focused on functionalities and Security.	PHP focused on UI and client facing.
5.	Dedicate organization with few developers.	Large size organization since it is open source.
6.	High level secure security.	PHP is a little bit less security than ASP.NET.
7.	Fast enough for desktop application	Slower for desktop application

## 2.7 Database Software Review

### MySQL

MySQL is an open source relational database management system (RDBMS) and it is based on the Structured Query Language (SQL). MySQL can be used in all kinds of operating systems such as Linux, UNIX, Windows and Mac OS. Moreover, MySQL is also associated with a web application which is an open source enterprise stack called LAMP which is a web development platform, uses a Linux operating system, a webserver (Apache) and an object-oriented scripting language (PHP). (Rouse, M)

### Advantages of using MySQL

There are some advantages while using MySQL in PHP. These are as follows:

- **It is easy to use:** MySQL is very easy to install because you can easily add a third party tool to the database and setting up an implementation is a relatively simple task. Moreover, the database working is too easy and if you know the language, you should not get any problem.
- **It's Open Source:** MySQL code is easily found online as it is free and open source. Therefore, a beginner learner can easily learn from online.
- **Inexpensive:** It depends on what plan the developer used. The cost of MySQL is between free and \$10,000 or more. It is significantly less expensive than any other database software compared to Microsoft SQL Server. (Mark, J 2014)

### Disadvantages of using MySQL

There are some disadvantages while using MySQL. These facts are as follows:

1. MySQL does not support very large size of database.
2. There are few stability problems.
3. Sometime, the functionality is too dependent on add-on.
4. Developers may find some of its limitations very frustrating.
5. Transitions are not handled very efficiently.

## 2.8 Comparison between MySQL and SQL Server

Parameter	SQL Server	MySQL
-----------	------------	-------

Definition	SQL means structure query language.	MySQL is an RDBMS which can be retrieve and modified.
Complexity	You need learning efficiently the SQL language for use.	It is easily to download and install it.
Type	It is query language.	MySQL is a database software and same with SQL language to query the database.
Support for connector	SQL do not have any connector.	MySQL have integrate tool called MySQL Workbench which can be create and design the database

## 2.9 Summary

In this literature review, we have reviewed the methodologies, programming languages and Database software. In this review, include, brief definition of DSDM as well as principle of DSDM, advantage and disadvantage of PHP and MySQL. After this reviewed, we decided to choose the DSDM for methodologies, PHP for programming languages and MySQL for database software because we will using the DSDM with UML diagram and using the PHP programming language together with MySQL database software. Consequently, we will get the best web application for Quantum Technology organisation.

## Chapter 3 – Requirements Analysis

### 3.1 Purpose of Requirements Analysis

The people who agree that having many groups of skilled workers is essential in order to create a great software are the people who has never worked on software development project. The participation of business analyst in a project can control whether the project is successful or not although each worker play an important role. Business analyst work with the person and control the scope of the project and set up the requirements and standards that the project needs to meet. Business analyst is also known as business system analyst

and it takes place at the very first beginning of the project. It works with the people and breaks down the processes that are needed in the development of the system, controls practical requirements and high-tech features, showing the details of the software and requirements to set the direction and support the installation.

## 3.2 Business Requirements

Business requirements, otherwise known as high level requirements. The general project scope can be identified by analysing high level requirements. These requirements can include both functional, and non-functional requirements. Functional requirements are essential functions that is required by the system to accomplish the business needs, and non-functional requirements, that determine the system's characteristics are quality, which are optional.

### 3.2.1 Business Cases and Scenarios

#### **Customer Registration**

Customer can register for their account in website by fill their requirement data.

#### **Account Security**

Customer account should be secure by using two-factored authentication to prevent hacker.

#### **Account Activation**

Activation email could be sent to the customer's email when they create account from website.

#### **Browse Product**

Customer can be browsing the product and they can also view the detail information of that product.

#### **Search Product**

Customer can search individual product by using search box.

#### **Add product to cart**

Customer can choose the product and add that product to the cart.

#### **View order form**

Customer can view their order and order detail.

#### **Make Payment**

Customer can make the payment that they choose the product.

### **Payment Security**

The website should be provide the security by using payment authorisation.

### **Tracking Order**

Customer can track their order from website.

### **Add Product into database**

Staff can add the product information by using add product form to database.

### **View and Update product**

Staff can view and update the product's information by using add product form.

### **Add category into database**

Staff can add categories into database by using add category form

### **View and Update categories**

Staff can view and update categories by using add category form.

### **Website Accessibility**

This website can be use for disabled user and provide all devices.

### **Website Security**

This website should be protected from cyber attacker.

### **Database Performance**

All of the data can be inserted into data without taking long time.

## **3.2.2 MOSCOW Prioritization**

Function	Must Have	Should Have	Could Have	Won't Have
Order	✓			
Sale	✓			
Purchase	✓			
Payment	✓			
Add to cart	✓			

Sale report		✓		
-------------	--	---	--	--

### 3.2.2 Functional Requirements

Requirement identity	List of Functional Requirement	MOSCOW Prioritization
1	Approve the customer search	Must
2	Approve inserting data	Must
3	Approve customer order	Must
4	Customer Registration	Must
5	Customer Login	Must
6	Allow customer to purchase the order	Must
7	Allow customer to make a payment	Must
8	Need to be personalise	Could

### 3.2.3 Non-Functional Requirements

Requirement identity	List of Non – Functional Requirement	MOSCOW Prioritization
1	Security	Must
2	View from all devices	Should
3.	Inserting and Updating need to be fast	Could
4.	Website loading fast	Could

### Risk Matric

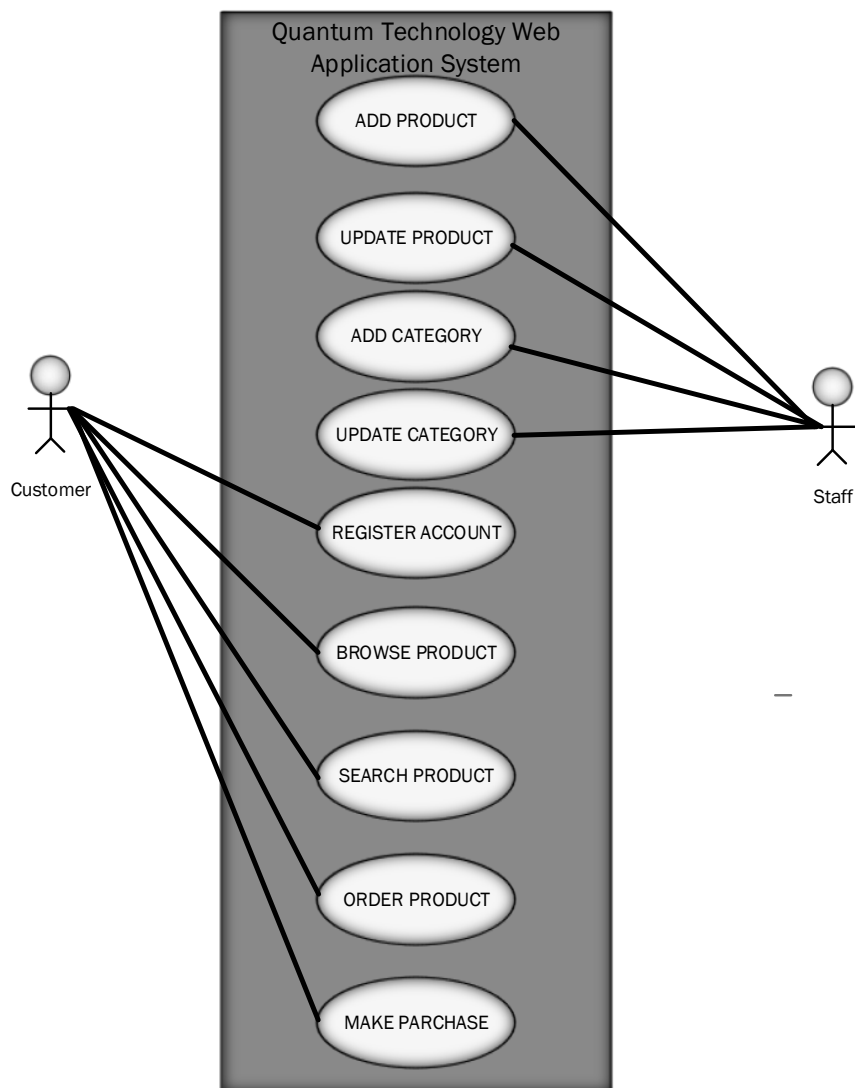
Title and description	Risk Status	Potential impact	Risk owner	Actions	Action Log
Malware	High	High	Ahkar Hein	1.Install anti-virus software. 2. Update anti-virus software 3. Scan Disk 1.1 Re-install the backup data	



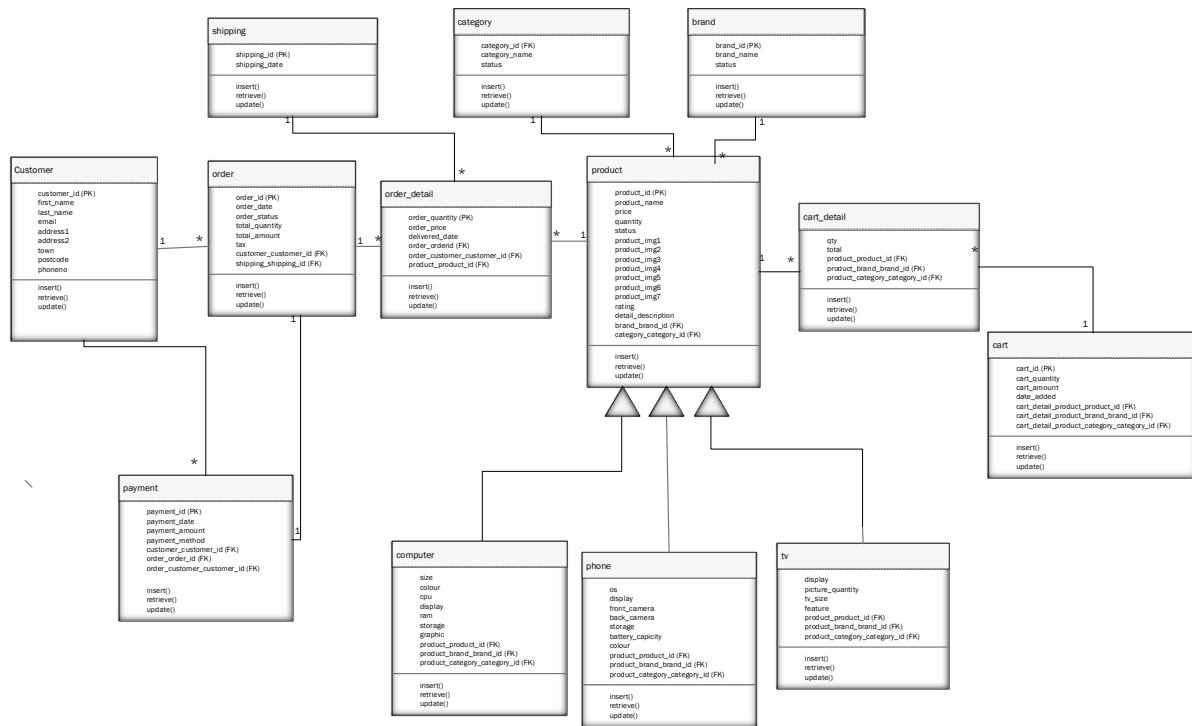
Code Error	Medium	Medium	Ahkar Hein	1.Search the error 2. Analysis the error. 3. Fix the error	
Hardware error	Low	Low	Ahkar Hein	1.Analysis the hardware error. 2.replace the hardware.	
Software error	Low	Low	Ahkar Hein	1.Analysis the software. 2.repair or re-install the software. 3. If the project file is remove, recover from backup file.	

## Chapter 4 – Design and Implementation

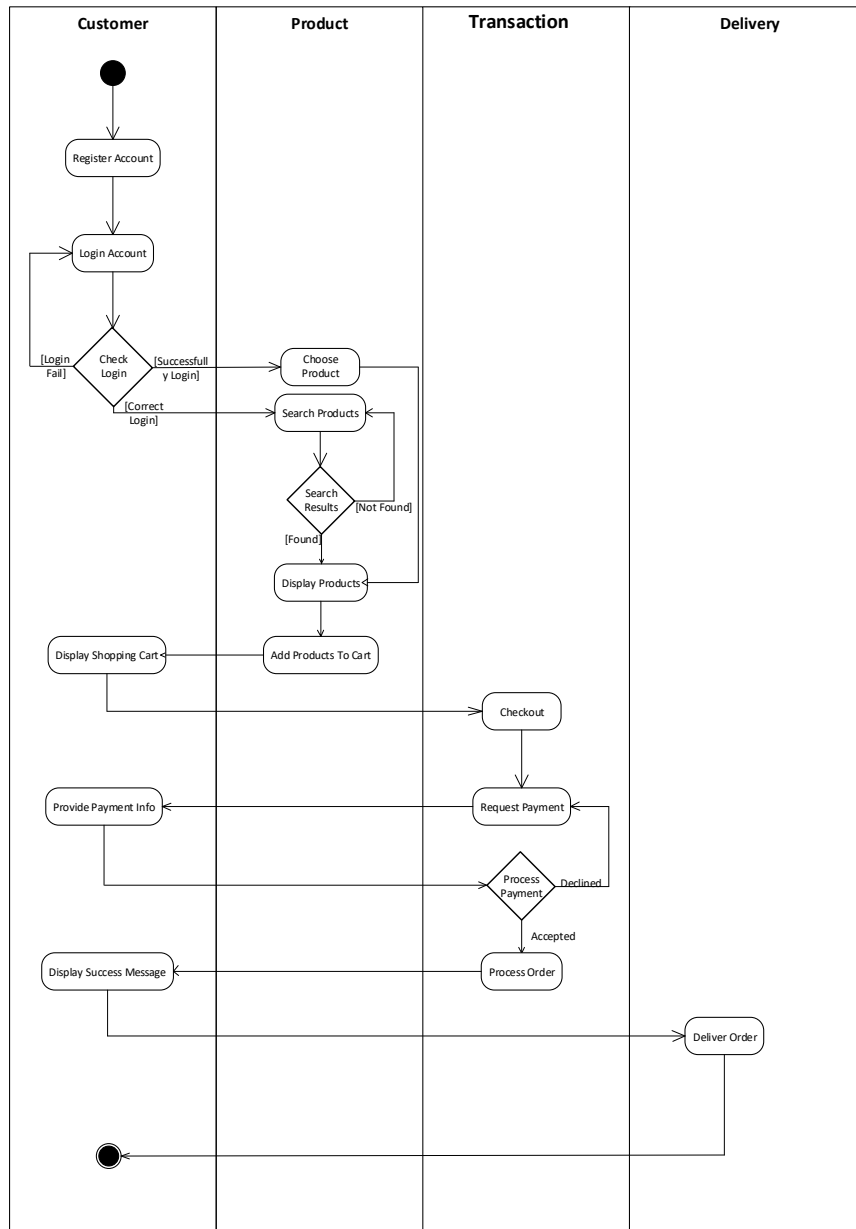
### 4.1 Use Case Diagram



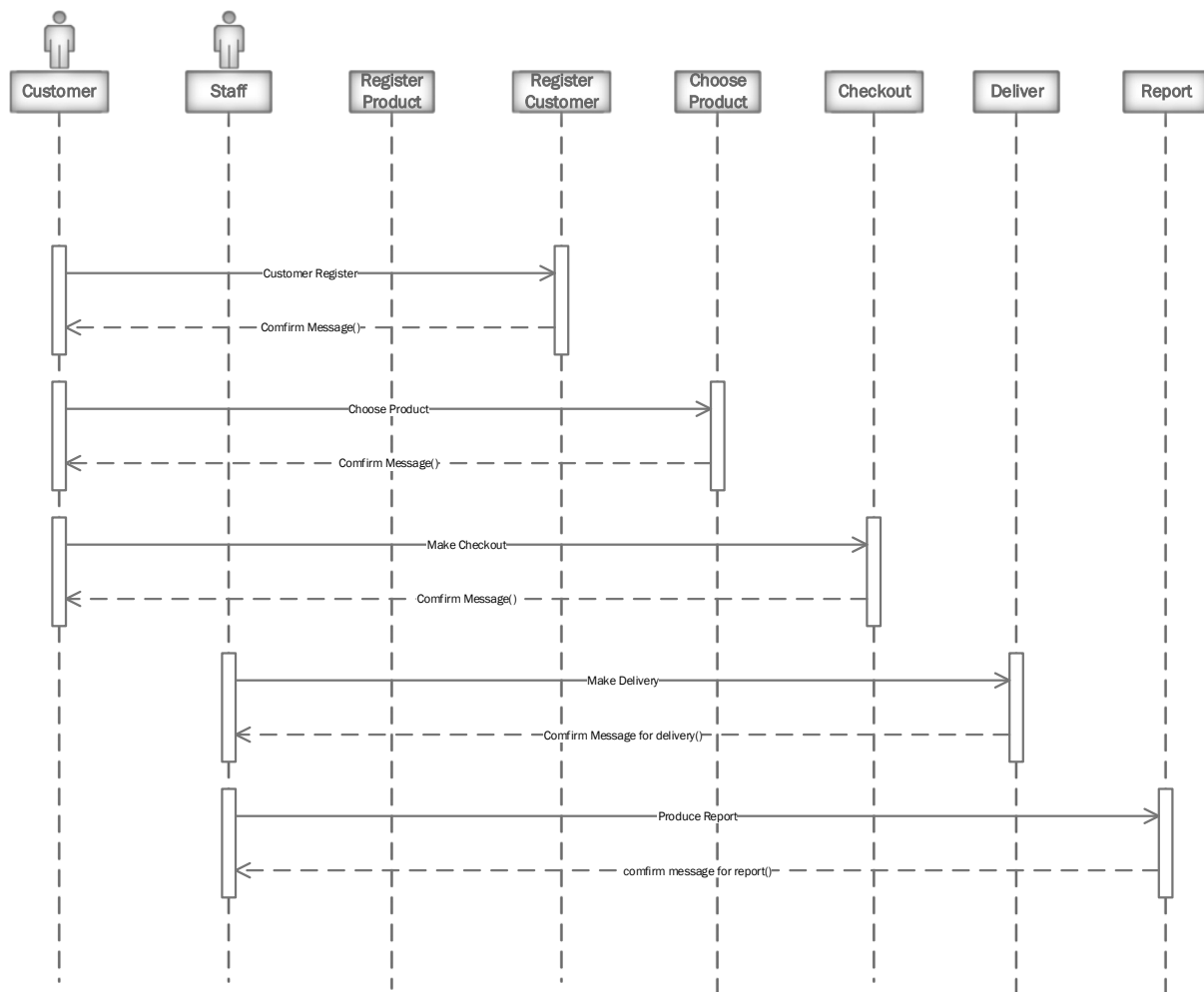
## 4.2 Detailed Class Diagram



## 4.3 Activity Diagram



## 4.4 Sequence Diagram



## Chapter 5 – Testing and Critical Analysis

### 5.1 Test Definition

Testing, webpage or web application is the practise of fully checking through the web application or website before it has launched to the public or live on the web. The main aim of web testing is find the issues, bugs or defects that could have a negative impact on the application or website. Web testing able to be used to research individual areas or aspects of a website that can be gain positive. There are a lot of web testing which is depends on the website aspect.

## 5.2 Test Plan

Test No.	Test Name	Target File	Aim of Test	Date of testing
1.	Execution of Customer Registration Form	customer_registration.php	Testing the customer_registration form works correctly	2019/04/22
2.	Email Validation	customer_registration.php	Testing the users who type the email address correct or not	2019/04/22
3.	Password Testing	customer_registration.php	Testing if user who type password correct or not	2019/04/22
4.	Execution of Login Page	customer_login.php	Testing the customer login page works correctly.	2019/04/22
5.	Execution of Add Product Form	Add_Product.php	Testing the product form function works correctly	2019/04/22
6.	Execution of add product Form	add_product.php	Testing the product list area which is works correctly.	2019/04/22
7.	Execution of product search function	home_page.php	Testing the product search box works correctly	2019/04/22
8.	Execution of sale product page	sale_product.php	Testing all of the product display correctly with product's detail.	2019/04/22
9.	Execution of Add to Cart Function	sale_product_detail.php	Testing the product can add to the cart.	2019/04/22
10.	Execution of view cart Page	view_cart.php	Testing the customer able to see their product correctly	2019/04/22

11.	Execution of Shopping Cart Function	ShoppingCartFunction.php	Testing the shopping cart function works correctly	2019/04/22
12.	Checkout Function Test	checkout.php	Testing the checkout function	2019/04/22

### 5.3 Test Log

Test No.	Test Name	Test Procedure	Expected Result	Actual Result	Action Required
1.	Executing of Customer Registration Form	Fill the form and click Create Account Fig.1.1	Successfully Registered	Fig.1.2	No action required

#### Registration Here!

First Name: Ahkar

Last Name: Hein

Email Address: arkarhein753@gmail.com

Confirm your Email: arkarhein753@gmail.com

Password: \*\*\*\*\*

Retype Password: \*\*\*\*\*

Address line 1: 128 Sunningfields Road

Address line 2: Hendon

Town/City: London

Country: United Kingdom

Post Code: NW4 4RE

Phone Number: 07365880459

Create account Cancel

Fig 1.1

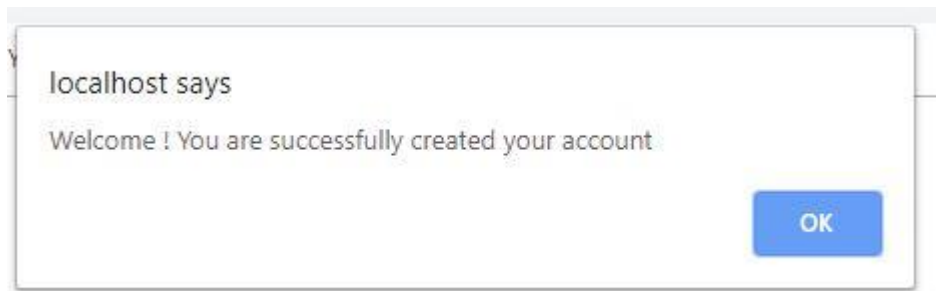


Fig 1.2

Test No.	Test Name	Test Procedure	Expected Result	Actual Result	Action Required
2.	Email Validation	Renter the same email Fig.2.1.1	Successfully signed up	Fig.2.1.2	No action required
		Renter the second with different email Fig.2.2.1	Show "email does not match"	Fig.2.2.2	No action required

#### Registration Here!

First Name

Last Name

Ahkar

Hein

Email Address

Confirm your Email

arkarhein753@gmail.com

arkarhein753@gmail.com

Password

Retype Password

\*\*\*\*\*

\*\*\*\*\*

Address line 1

Address line 2

128 Sunningfields Road

Hendon

Town/City

Country

London

United Kingdom

Post Code

Phone Number

NW4 4RE

07365880459

Create account

Cancel



Fig.2.1.1

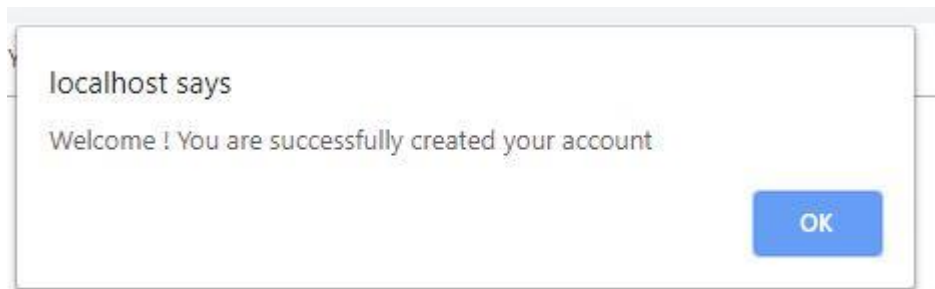


Fig 2.1.2

**Registration Here!**

First Name	Last Name
<input type="text" value="Aung Wai"/>	<input type="text" value="Tun"/>
Email Address	Confirm your Email
<input type="text" value="yantun@gmail.c"/>	<input type="text" value="aungwaiyantun@gmail.com"/>
Password	Retype Password
<input type="password" value="*****"/>	<input type="password" value="*****"/>
Address line 1	Address line 2
<input type="text" value="Rosemead Avenue"/>	<input type="text" value="30"/>
Town/City	Country
<input type="text" value="London"/>	<input type="text" value="United Kingdom"/>
Post Code	Phone Number
<input type="text" value="CR4 1EY"/>	<input type="text" value="7413811237"/>
<input type="button" value="Create account"/>	<input type="button" value="Cancel"/>

Fig 2.2.1

localhost says  
Emails do not match

OK

First Name

Aung Wai

Last Name

Tun

Email Address

yantun@gmail.c

Confirm your Email

aungwaiyantun@gmail.com

Password

\*\*\*\*\*

Retype Password

\*\*\*\*\*

Address line 1

Rosemead Avenue

Address line 2

30

Town/City

London

Country

United Kingdom

Post Code

CR4 1EY

Phone Number

7413811237

Create account

Cancel

Fig 2.2.2

Test No.	Test Name	Test Procedure	Expected Result	Actual Result	Action Required
3.	Password Testing	Renter the same password Fig.3.1.1	Successfully signed up	Fig.3.1.2	No action required
		Renter the second with different password Fig.3.2.1	Show "password does not match"	Fig.3.2.2	No action required

**Registration Here!**

First Name	Last Name
<input type="text" value="Ahkar"/>	<input type="text" value="Hein"/>
Email Address	Confirm your Email
<input type="text" value="arkarhein753@gmail.com"/>	<input type="text" value="arkarhein753@gmail.com"/>
Password	Retype Password
<input type="password" value="*****"/>	<input type="password" value="*****"/>
Address line 1	Address line 2
<input type="text" value="128 Sunningfields Road"/>	<input type="text" value="Hendon"/>
Town/City	Country
<input type="text" value="London"/>	<input type="text" value="United Kingdom"/>
Post Code	Phone Number
<input type="text" value="NW4 4RE"/>	<input type="text" value="07365880459"/>
<input type="button" value="Create account"/>	<input type="button" value="Cancel"/>

Fig. 3.1.1

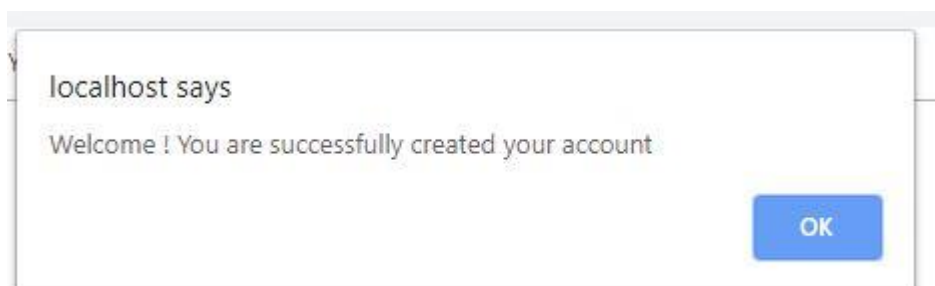


Fig 3.1.2

### Registration Here!

First Name	Last Name
<input type="text" value="Aung Wai"/>	<input type="text" value="Tun"/>
Email Address	Confirm your Email
<input type="text" value="yantun@gmail.c"/>	<input type="text" value="aungwaiyantun@gmail.com"/>
Password	Retype Password
<input type="password" value="*****"/>	<input type="password" value="*****"/>
Address line 1	Address line 2
<input type="text" value="Rosemead Avenue"/>	<input type="text" value="30"/>
Town/City	Country
<input type="text" value="London"/>	<input type="text" value="United Kingdom"/>
Post Code	Phone Number
<input type="text" value="CR4 1EY"/>	<input type="text" value="7413811237"/>
<input type="button" value="Create account"/>	<input type="button" value="Cancel"/>

Fig 3.2.1

localhost says

Passwords do not match.

First Name	Last Name
<input type="text" value="Aung Wai"/>	<input type="text" value="Tun"/>
Email Address	Confirm your Email
<input type="text" value="yantun@gmail.c"/>	<input type="text" value="aungwaiyantun@gmail.com"/>
Password	Retype Password
<input type="password" value="*****"/>	<input type="password" value="*****"/>
Address line 1	Address line 2
<input type="text" value="Rosemead Avenue"/>	<input type="text" value="30"/>
Town/City	Country
<input type="text" value="London"/>	<input type="text" value="United Kingdom"/>
Post Code	Phone Number
<input type="text" value="CR4 1EY"/>	<input type="text" value="7413811237"/>
<input type="button" value="Create account"/>	<input type="button" value="Cancel"/>

Fig 3.2.2

Test No.	Test Name	Test Procedure	Expected Result	Actual Result	Action Required
4.	Login Page Testing	Enter the correct email. password and click Login Fig.4.1.1	Successfully Login	Fig.4.1.2	No action required
		Enter wrong data and click Login Fig.4.2.1	Show “username and password do not match”	Fig.4.2.2	No action required

### Login to your account

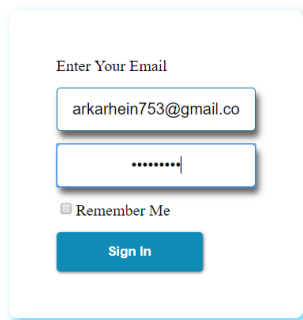


Fig 4.1.1

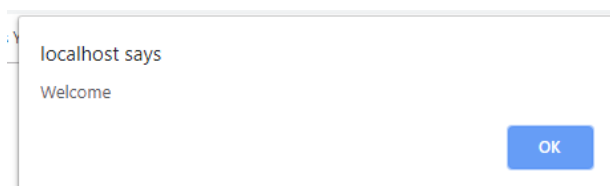
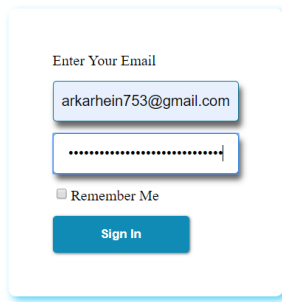


Fig 4.1.2

## Login to your account



Enter Your Email

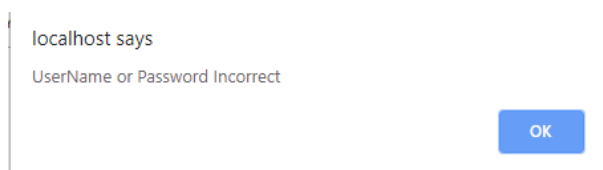
arkarhein753@gmail.com

.....

☐ Remember Me

Sign In

Fig 4.2.1



localhost says

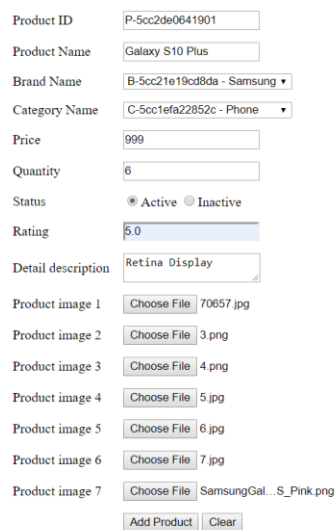
UserName or Password Incorrect

OK

Fig 4.2.2

Test No.	Test Name	Test Procedure	Expected Result	Actual Result	Action Required
5.	Testing of add product form	Enter product data in add product form Fig.5.1	Product is successfully added to database	Fig.5.2	No action required

### Add Product Form



Product ID: P-5cc2de0641901

Product Name: Galaxy S10 Plus

Brand Name: B-5cc21e19cd8da - Samsung

Category Name: C-5cc1efa22852c - Phone

Price: 999

Quantity: 6

Status: ☒ Active ☐ Inactive

Rating: 5.0

Detail description: Retina Display

Product image 1: Choose File 70657.jpg

Product image 2: Choose File 3.png

Product image 3: Choose File 4.png

Product image 4: Choose File 5.jpg

Product image 5: Choose File 6.jpg

Product image 6: Choose File 7.jpg

Product image 7: Choose File SamsungGal...S\_Pink.png

Add Product Clear

Fig 5.1

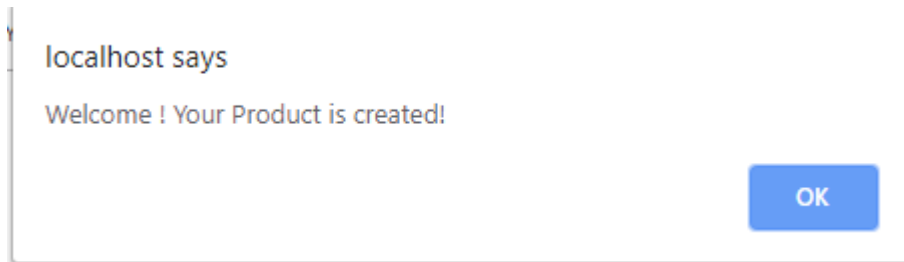


Fig 5.2

Test No.	Test Name	Test Procedure	Expected Result	Actual Result	Action Required
6.	Rendering of Product Listing Form	Go to product listing form	Product is correctly listed on the form	Fig.6	No action required

#### Product Listing

Product ID	Product Name	Category	Brand	Status	Price	Quantity	Description	Image1	Image2	Image3	Image4	Image5
P-5cc264b294a30	iPhone XS	C-5cc1efa22852c	B-5cc1ef933daa	Active	999	5	AAA	31p2THFTJL_SL1024_.jpg	41XgrVomNtL_SL1024_.jpg	61NwLyLMiAL_SL1024_.jpg	61SQ4fVdq5L_SL1024_.jpg	512F7mwDVyL_SL1024_.jpg
P-5cc26d51efb7e	Macbook Pro	C-5cc1efd361755	B-5cc1ef933daa	Active	1999	5	A	41xGUYYUZsL_SL1024_.jpg	51NGvCaCd2L_SL1024_.jpg	61Sh697CCL_SL1500_.jpg	514YVPAmEmL_SL1500_.jpg	
P-5cc270e169561	Sony Bravia	C-5cc1efdb2e693	B-5cc21e1ec3e64	Active	1400	5	HDR. Brilliant highlights, beautiful textures. HDR preserves the detail in the brightest and darkest scenes found in PS4 games and Netflix titles, for a more dynamic and realistic picture. Compatible with all HDR PS4 Game titles via HDMI and HDR videos of	41O60kb84PL_SL1200_.jpg	51ANIi4sNwL_SL1200_.jpg	face.jpg	51aWglKvyYL_SL1200_.jpg	51Ej6exOCmL_SL1200_.jpg

Image6	Image7	Action
apple-iphone-x-review-5.jpg	apple-iphone-x-review-5.jpg	<a href="#">Edit</a> / <a href="#">Delete</a>
		<a href="#">Edit</a> / <a href="#">Delete</a>
91HBh1R2dHL_SL1500_.jpg	619cCs8QVjL_SL1200_.jpg	<a href="#">Edit</a> / <a href="#">Delete</a>
7.jpg	SamungGalaxy_S10PLUS_Pink.jpg	<a href="#">Edit</a> / <a href="#">Delete</a>

Fig 6

Test No.	Test Name	Test Procedure	Expected Result	Actual Result	Action Required
7.	Testing the product search function	Enter and click the search button Fig.7.1	Showing relevant product or products	Fig.7.2	No action required

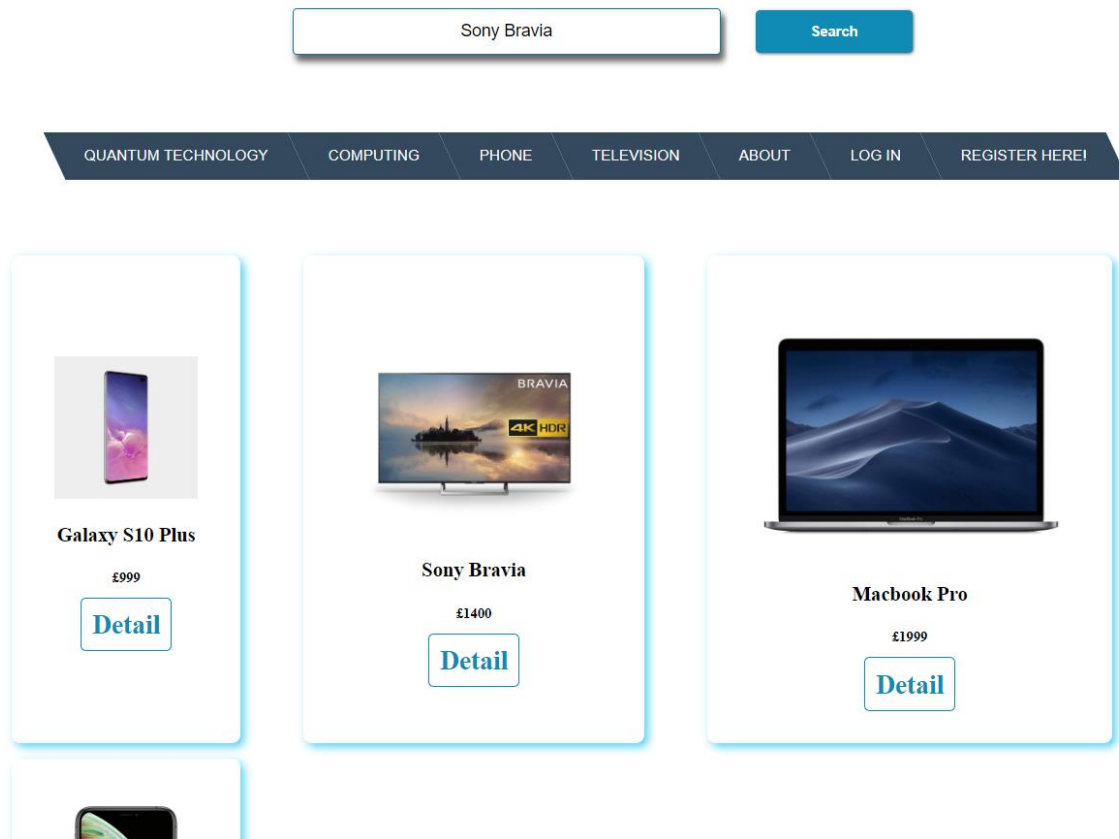


Fig 7.1



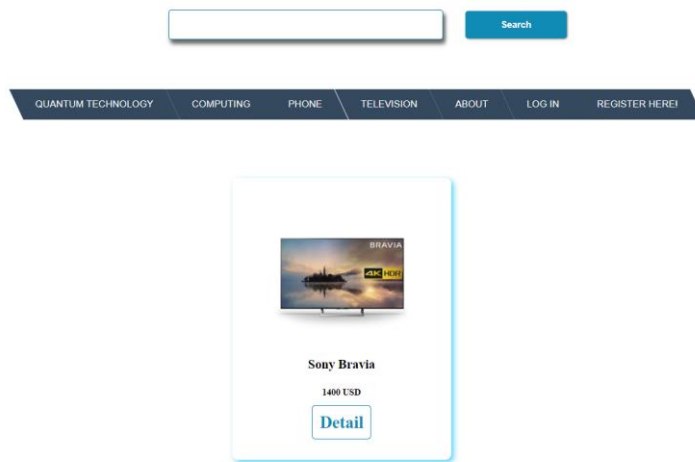


Fig 7.2

Test No.	Test Name	Test Procedure	Expected Result	Actual Result	Action Required
8.	Testing the Home Page	Browse the all product and click detail Fig 8.1	Showing detailed information of the product	Fig.8.2	No action required

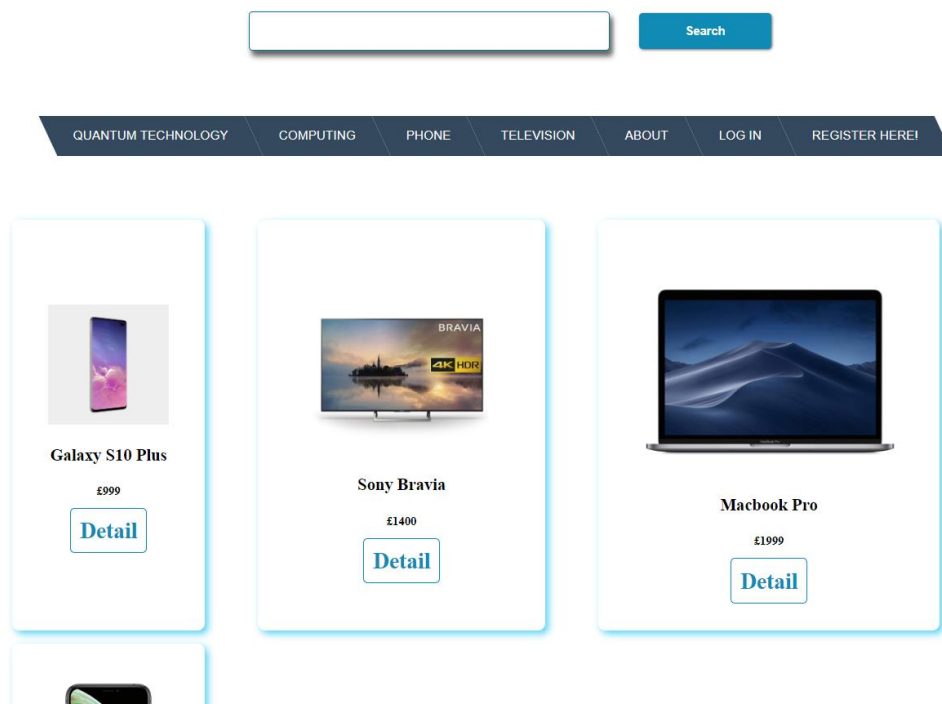


Fig 8.1

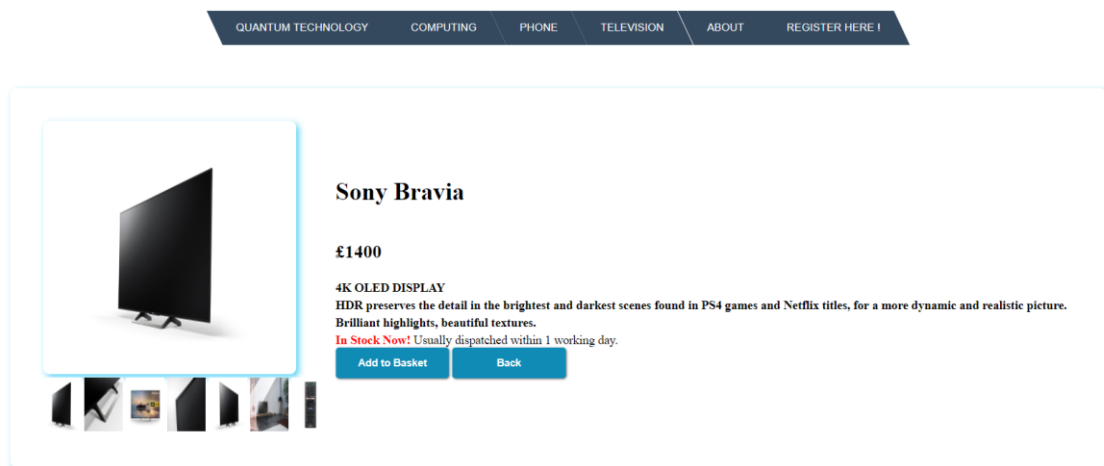


Fig 8.2

Test No.	Test Name	Test Procedure	Expected Result	Actual Result	Action Required
9.	Testing the Shopping Cart Form	Click the add to basket button and check the shopping cart page	Show shopping cart	Fig.9.1	No action required

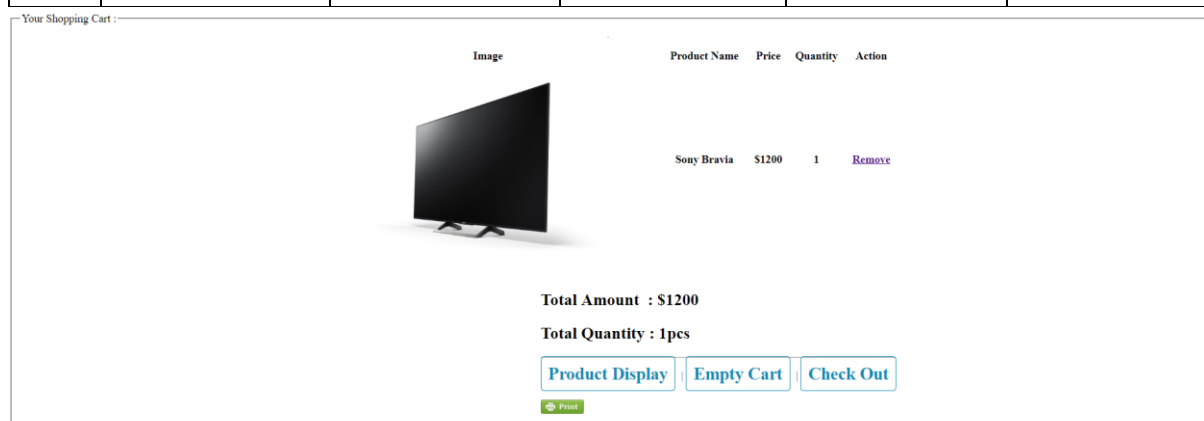


Fig 9.1

Test No.	Test Name	Test Procedure	Expected Result	Actual Result	Action Required
10.	Checkout Function Test	Click checkout button	Go to checkout form	Fig.12	No action required

The screenshot displays a checkout form with two main sections: Billing Address and Payment. The Billing Address section includes fields for Full Name (John M. Doe), Email (john@example.com), Address (542 W. 15th Street), City (New York), State (NY), and Zip (10001). The Payment section includes a checkbox for 'Shipping address same as billing' (checked), a 'Proceed to checkout' button, and fields for Name on Card (John More Doe), Credit card number (1111-2222-3333-4444), Exp Month (September), Exp Year (2018), and CVV (352). Accepted Cards logos (Visa, Mastercard, American Express) are shown above the Name on Card field.

Fig 12

Test No.	Test Name	Test Procedure	Expected Result	Actual Result	Action Required
11.	Testing the Checkout form	Enter the billing address and payment detail and clicked proceed to check out button Fig.13.1	Show message and go back to the home page	Fig.13.2	No action required

### Billing Address

▲ Full Name

✉ Email

🏠 Address

🏙 City

Country

Postcode

☒ Shipping address same as billing

Proceed to checkout

### Payment

Accepted Cards

Name on Card

Credit card number

Exp Month

Exp Year

CVV

Fig 13.1



Fig 13.2

Test No.	Test Name	Test Procedure	Expected Result	Actual Result	Action Required
14.	Testing the add brand form	Enter the brand name and clicked the add brand button Fig .14.1	Add brand successfully	Fig.14.2 Fig. 14.3	No action required

## Add Brand Form

Brand Name

Status
☒ Active
☐ InActive

Add Brand
Clear

Fig 14.1

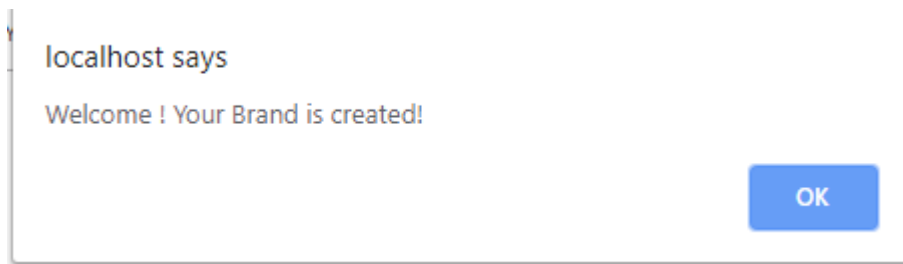


Fig 14.2

				brand_id	brand_name	status
<input type="checkbox"/>		Edit		Copy		Delete
				B-5cc1efe933daa	Apple	Active
<input type="checkbox"/>		Edit		Copy		Delete
				B-5cc21e19cd8da	Samsung	Active
<input type="checkbox"/>		Edit		Copy		Delete
				B-5cc21e1ec3c64	Sony	Active
<input type="checkbox"/>		Edit		Copy		Delete
				B-5cc21e24df3f3	HP	Active
<input type="checkbox"/>		Edit		Copy		Delete
				B-5cc31779b1057	Blackberry	Active

Test No.	Test Name	Test Procedure	Expected Result	Actual Result	Action Required
15.	Testing the add category form	Enter the category name and clicked the add category button Fig .15.1	Add category successfully	Fig.15.2 Fig. 15.3	No action required

## Add Category Form

Category Name

Status ☒ Active ☐ InActive

Fig 15.1

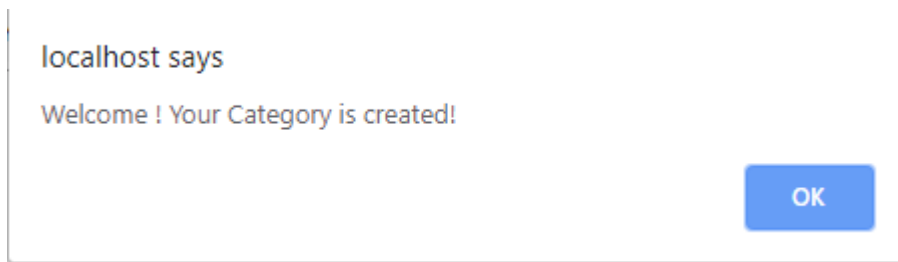


Fig 15.2

		category_id	category_name	status
<input type="checkbox"/>	<a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	C-5cc1efa22852c	Phone	0
<input type="checkbox"/>	<a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	C-5cc1efdb2e693	Computer	0
<input type="checkbox"/>	<a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	C-5cc1efdb2e693	TV	0
<input type="checkbox"/>	<a href="#">Edit</a> <a href="#">Copy</a> <a href="#">Delete</a>	C-5cc3185183ae0	Phone	0

Test No.	Test Name	Test Procedure	Expected Result	Actual Result	Action Required
16.	Testing the add phone detail form	Enter the data and clicked the add button Fig .16.1	Add Phone created	Fig.16.2 Fig. 16.3	No action required

### Phone Form

Product Name

Brand Name

Category Name

Operation System

Display

Front Camera

Back Camera

Storage

Battery Capacity

Colour

Fig 16.1

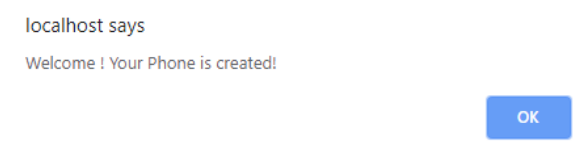


Fig 16.2





	os	display	front_camera	back_camera	storage	battery_capacity	colour	product_product_id	product_brand_brand_id	product_category_category_id
  	IOS 12	Retina Display	5MP	12MP + 5MP	128GB SSD	10000	Black	P-5cc264b294a30	B-5cc1efe933daa	C-5cc1efa22852c
  	Android 8.0	OLED	10MP	20MP	128GB	1000	White	P-5cc20e0641901	B-5cc21e19cd8da	C-5cc1efa22852c

Fig 16.3

Test No.	Test Name	Test Procedure	Expected Result	Actual Result	Action Required
17.	Testing the add computer detail form	Enter the data and clicked the add button Fig .17.1	Add computer Created	Fig.17.2 Fig. 17.3	No action required

### Computer Form

Product Name

Brand Name

Category Name

Size

Colour

CPU

Display

RAM

Storage

Graphic

Fig 17.1

localhost says

Data you entered is already exist!

Fig 17.2




	size	colour	cpu	display	ram	storage	graphic	product_product_id	product_brand_brand_id	product_category_category_id
  	15 inches	Black	Core i7	Retina Display	8GB DDR5	128GB SSD	No	P-5cc26d51cfb7e	B-5cc1efe933daa	C-5cc1efd361755

Fig 17.3

Test No.	Test Name	Test Procedure	Expected Result	Actual Result	Action Required

18.	Testing the add TV detail form	Enter the data and clicked the add button Fig .18.1	Add TV Created	Fig.18.2 Fig. 18.3	No action required
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## Television Form

Product Name

Brand Name

Category Name

Display

Picture Quality

TV Size

Feature

Fig 18.1

localhost says

Welcome ! Your TV is created!

Fig 18.2

display	picture_quantity	tv_size	feature	product_product_id	product_brand_brand_id	product_category_category_id
4K OLED Display	HDR preserves the detail in the brightest and dar...	64 inches	HDR. Brilliant highlights, beautiful textures	P-5cc270e169561	B-5cc21e1ec3c64	C-5cc1efdb2e693

Fig 18.3

## 5.5 Issues faced During Development

During the project development, there were many issues faced by the team. This project is to build the e commerce website and web application. A considerable amount of knowledges and skills are required for this web design project. Many difficulties arise due to a lack of experience in writing the code in PHP, HTML and CSS. At the start of the coding process, the project faced a series of syntax error. Therefore, much of the time is spent on finding and fixing the



error. When creating the CSS design for this website, there were insufficient knowledge of CSS coding and tricks.

Another issue that the project encountered is during database design like ERD, Detail Class Diagram. It was challenging to design the database structure, entity relationship diagram, and UML diagrams. Moreover, because of a lack of E-commerce business knowledges, there was challenge in creating MySQL server. As the result, the project got a bit rushed towards the end of the development. Some functions have to be stripped down or removed in order for the project to meet its deadline.

## 5.6 Lessons Learnt from the Project

This project is about creating the E commerce website and the general flow to business in E commerce must researched. Therefore, the advantages and disadvantages of business in E commerce are learnt while investigating the project. Moreover, to be researched the requirement of business, the general business criteria and business e commerce are also learnt. Then, Language such as JavaScript and jQuery which can be use in PHP, HTML coding are also be learnt.

## Chapter 6 – Conclusion and Further Work

### 6.1 Conclusion

In this project, there are divided into six chapters. In chapter one, include rational, problem and issues definition of this organisation and current process of Quantum Technology organisation. And also, it includes Aim and Objective which is related with this organisation. Next chapter is literature which consist about DSDM and principle of DSDM. Moreover, there is comparison table which is difference between MySQL and SQL server and PHP and ASP.NET. In the chapter 3, this chapter is about requirement analysis which is include the aim of requirement analysis and business requirement. There is also involve business cases and scenarios and MOSCOW prioritization, functional and non-functional requirement and risk matric. In chapter 4, it is design and implementation stages, there is include the diagram like Use Case, Detail Class, Activity and Sequence diagram. Chapter 5 is testing stages. There is include test definition for website and web application, test plan, test log, issues faced during development and lesson learnt. In this chapter, there is a lot of screenshot of Quantum Technology organisation online system. The last chapter is that involve appendix. There are divided into three part. Appendix A,B and C. Appendix A is for installation guide and B is for user guide. C is for project code.

## 6.2 Future Amendments

Not all of the products are considered as perfect final product that meet all the requirements needed since there are some sacrifices that have to be made because of the knowledge of the developers or the time frame of the project. Some of the functions that are considered less priority have to be taken out during the project which also applies the same to this project. There are a lot of improvements that can be made if this project has to be redeveloped again in the future which are design and layout which will improve UI, function of sorting products by names, release date and price can be added, implement payment authorisation function and live chat and wish-list functions can also be added. An improvement of delivery system and sales report which is accessible to the staffs can also be added to this project.

## List of References

Agilekrc (2018) What is DSDM and the 8 principles. Available at: <https://agilekrc.com/resource/168/what-dsdm-and-8-principles> (Accessed: 9 September 2018).

## Appendix A – Installation Guide

### Step1

Before using the application, user must install the apache sever application. Therefore, they have to download application like XAMPP, MAMP. Then, they can install this application on their computer which can be easily download on <https://www.apachefriends.org/>.

### Step 2

After that, they must open the application and start the MySQL server and apache server. Then, they need to open the browser and type local:8080/phpMyAdmin. After that, they can import the SQL file.

### Step 3

After importing the SQL file, they need to copy the all of the PHP and CSS files to the htdocs which is located on C://XAMPP/htdocs. Finally, they need to open the browser and type the localhost:8080/filename and then they can start use the application.

## Appendix B – User Guide

In this project, there are divided into two parts which is front end and back end. The front end is home page, customer registration form, customer login form, sale product display form and add to cart form. The backend is that database, add product form, update product form and add and update category form as well. Therefore, there are some steps to adding the product, categories and brand. Those steps are as follow:

### Step 1

To be add the product to the database, firstly, they need to open the product form.

### Step 2

After that, they can type the product data on each text box and they can upload the images as well.

### Step 3

Finally, click the Add Product button and then all of the product data are immediately inserting to the product table.

Likewise, they can also be adding the categories and brand like this. And also, they can update and view the data which is located on the add product, category and brand form. There are three steps to update and view the data. These steps are as follow:

### Step 1

If they want to update or view the product, firstly, they need to open the product form.

### Step 2

After that, they need to scroll down the form and then they can see the product list.

### Step 3

Then, they can click the update button to change the data.

## Appendix C – Project Codes

Program Code Link available on GitHub

<https://github.com/98ahkarhein/M00678794-BIS3999-Project-Code/tree/master/Quantum>