Institute of Technology Australia

**Technical** Requirements Document

e-Commerce Website for

Bazaar Ceramics.

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# Introduction

## Purpose

This document defines the technical aspects related to the development and subsequent implementation of the Bazaar Ceramics Website.

The Bazaar Ceramics Website is an e-commerce website with online payment capabilities, customers account implementation and administrative functionalities for management of customer accounts and inventory and for calculation and representation of sales figures.

## Target Audience

Anyone who is going to work on, or with the system. This includes developers, designers, business owner, testers and management.

## Project Scope

The scope of this project is to develop a complete e-commerce solution, including related documentation and its deliverable items.

The solution consists on an e-commerce website that provides browsing and purchasing functionalities to Bazaar Ceramics customers and administrative functionalities to Bazaar Ceramics management.

Documentation includes requirements documents and specifications, plans and project maps, design, mock-ups and prototypes, development and testing documentation and user manuals.

## Document Conventions

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in RFC2119. However, for readability, these words do not appear in all upper case letters in this specification.

## Reference

This technical specification can be used as a stand alone document and contains in itself all the information to be understood. However, in some cases, the information here included are a brief version of other documents which can be referenced for a deeper understanding of the solution.

# **Description**

## **Client**

### Unregistered

Unregistered clients can access the website without having an account. They can access to every single functionality, but the checkout.

While on the website they are allow to:

* **Register**: Create an account and become registered customers.
* **Navigate**: Browse the website pages.
* **Contact** **company**: Send a message to Bazaar Ceramics through a form.
* **Select** **category**: Select what category of products to see from a drop down list.
* **Browse** **catalogue**: Browse to the catalogue of products sorted by category.
* **Search** **product**: Use the search bar.
* **View** **product** **detail**: Select a product to view its details.

### Registered

A registered client is a user that has registered an account on the website. A registered client has access to all the customer facing part of the website and its functionalities. All the operation performed by the unregistered client, can also be performed by the registered client.

* **Log** **in**: Login into their account.
* **Change** **password**: Change the password of their account.
* **Add** **product** **to** **cart**: Select a product to add to their shopping cart.
* **Manage** **shopping** **cart**: Add, update, or remove items from their shopping cart.
* **Checkout**: Provide shipping details, and make online payments.

## Administrator

An administrator user is authorised to manage the products inventory and the registered customers accounts. They are allowed to access back-end of the system.

* **Manage inventory**: Maintain products from the inventory
* **Manage accounts**: Maintain registered customers accounts
* **Sales report**: View sales report produced by the system.

## **User overview**

## **Client**

### Unregistered

Unregistered clients can access the website without having an account. They can access to every single functionality, but the checkout.

### Registered

A registered client is a user that has registered an account on the website. A registered client has access to all the customer facing part of the website and its functionalities. All the operation performed by the unregistered client, can also be performed by the registered client.

## Administrator

An administrator user is authorised to manage the products inventory and the registered customers accounts. They are allowed to access back-end of the system.

## **Operating Environment**

* Server OS: Windows Server 2019
* HTTP Server: IIS HTTP Server 10.0
* Payment gateway: Paypal, Stripe
* Database: MySQL 8.0

## **Constraints: Implementation / Design**

A proper environment for the solution to be deployed is required. The design will follow industry standards to get cross-browser compatibility.

## **Documentation**

The following documentation will be provided by the end of the project.

|  |  |
| --- | --- |
| • Business Requirements  • Technical Requirements  • Problem Statement  • Scope  • Work Breakdown Structure  • Project Plan | • Database Design and Architecture  • Site Map  • Test Plan  • Test Summary Report  • Test Acceptance Report  • Project Closure Document |

## **Assumptions / Dependencies**

### Data

It is assumed that the organisational documentation and any other source provided by the client to extract the data needed, is accurate and reflects the real needs of the company.

### **Imagery and Copyrights**

Depends on the client to provide the images and content files that they wish to implement. It is assumed that the client will provide timely the files required and with their copyrights.

### **Merchant account**

The client needs to provide a merchant account in order to interface with the Stripe and Paypal payment gateways.

### **IT Infrastructure**

The system will be developed according to the IT Infrastructure specifications provided by the client. Bazaar Ceramics has a Microsoft Server 2019 running Microsoft IIS 10.0. For the successful implementation of the system the IT Infrastructure must be as described by the client and in working conditions for deployment and testing.

# **Functional Requirements**

## **Client**

### **Unregistered**

#### ***Sign up***

|  |
| --- |
|  |
| Figure 2 – Sign up process |

### Registered

#### ***Sign*** in

|  |
| --- |
|  |
| Figure 2 – Sign in process |

#### Purchase

|  |
| --- |
|  |
| Figure 3 – Purchase process |

### Administrator

#### Manage products

|  |
| --- |
|  |
| Figure 4 – Maintain Products from Back-End |

# **Requirements of the external interface**

## **User Interfaces**

The solution will rely on Bootstrap 5.0 as a CSS framework to ensure responsiveness and a coherent design throughout all the pages.

Every screen will have a navigation bar at the top, to give access to the user to any page on the main level of navigation from anywhere in the website.

The approach adopted is to keep the pages simple and minimal, with only the few and most important elements on screen at any time.

This choice is also reflected by the colour palette, with no backgrounds behind the main content and light pale colours to highlight the boundaries between each section.

## **Hardware Interface**

The server is a Microsoft Windows 2019 running Microsoft IIS 10.0 HTTP web server, MySQL 8.0 as a database engine and PHP as a server side programming language.

The system is stored in a datacenter that provides storage, networking and 24/7 security with a SLA of less than 99.99% but equal or greater than 99.0% (Amazon EC2).

## **Software Interface**

The system is built using PHP 7.4 as a server side language and runs on a Windows 2019 server with IIS as a HTTP server and MySQL 8.0 as database engine. For the client side the system uses HTML 5.0 and Bootstrap 5 as a CSS framwork. Jquery is used as a Javascript library. The system integrate consumes Google Mpas API for location purposes and Paypal and Stripe APIs to process online payment.

## **Communication Interface**

Email notifications will be handled by PHPMailer. The communication between client and server is be handled by the HTTP/2 protocol. Database daily backup is handled by the IIS scheduler and Code management is handled by GIT, using the GIT-FTP extension.

# Non-Functional Requirements

## Performance

* Page load must not exceed 5 seconds on regular conditions.
* Use of minified JS and CSS from CDN.
* SEO optimized
* Responsive

## Security

* The website will adopt the HTTPS protocol to encrypt the data transferred
* The website will obtain an SSL certificate
* Server logs will be monitored regularly for suspicious activities
* Data validation will be implemented both on the client side and on the server side
* Encryption on server side will implement reliable and secure algorithms
* Session management must include inactivity timeouts, duration, actions and traceability

## **Quality**

* Accessibility
* Confidentiality
* Integrity
* Usability