

**Feasibility Report**

**<Project Title>**

**E-commerce Website Using HTML CSS and Bootstrap**

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**<Github Repository Link>**

<https://github.com/rabiak0510/SoftwareEngeering.github.io>

* **Objective:**

The research aimed to identify the problem and the need to develop a small-medium enterprise project in a banking company. The analysis used a literature study, interviews, and observations. The results of the analysis supported the problem and were manifested in the development of information systems in the form of a recommendation for an e-commerce web design. The method consisted of data collection, data analysis and depth interview with Head of E-Commerce Department and Head of Marketing Communication in two days. The result shows that the banking company already uses WhatMobile.com.pk to enhance their sales and brand. However, based on research, Facebook and Twitter also can be an option to enhance clients’ market access.

* **Preliminary Requirement Analysis:**

Once the system analyst have identified the precise user requirements and analyzed these requirements to weed out inconsistencies, they proceed to write the document called the Software Requirement Specified (SRS). It is the final output of the requirements analysis and specification phase.

* An SRS document should clearly document following:
* Function requirements of the system.
* Non-Functional requirements of the system.
* Constraints of the system.

A SRS should have characteristics like concise, unambiguous, consistent, complete, well-structured etc.

SRS documentation for the project and its Service Management Program:

* **Environmental Characteristics**

**Hardware:** The hardware at the organization is Pentium 500 MHz + Computers.

Peripherals: The most common peripheral that is required for the program is Printer.

People: The users at the organization will be the entry operators at the Electronic Data Processing (EDP) section or various office clerks attached with Director, CGM, or GM or CEO’s.

* **Interfaces:**
* **Interface with Devices**: The website has just one peripheral device to deal with that is printer.
* **Interface with the Operating system:** The application will be an execute file and hence there is no need for an interface with the operating system.
* **Interface with the Database used:** The application being developed in SQL server so the interface will be the ODBC driver.
* **Interface with the User:** The application assumes its users to be novice and has an extremely simple user friendly interface.
* **Requirement Specification:**
* **Hardware Requirement:**

Processor: Pentium Processor ISA 32 Family  
Secondary Storage: 80GB HDD  
ROM: 52X CD ROM Drive  
Floppy Drive: 1.44 FDD  
Memory: 1GB RAM  
Modem: 128kbps Voice Fax Data  
Others: 17”Color Monitor, Printer, Scanner, Keyboard, Mouse

* **Software Requirements:**

Platform: Windows  
Operating System: Windows 10  
Framework: ASP.NET Framework 2.0  
Front-End Tool: ASP.Net with C#, AJAX  
Back-End Tool: SQL Server  
Scripting Tool: JavaScript, XML (Style Sheet) (.xsl)

Server: Internet Information Server (IIS Server)

* **System Analysis:**

Problem Definition: The e-shopping Administrator is the super user and has complete control over all the activities that can be performed. The application notifies the administrator of all shop creation requests, and the administrator can then approve or reject them. The administrator also manages the list of available product categories. The administrator can also view and delete entries in the guestbook.

**Shop Owner:** Any user can submit a shop creation request through the application. When the request is approved by the Mall Administrator, the requester is notified and from there on is given the role of Shop Owner. The Shop Owner is responsible for the setting up the shop and maintaining it. The job involves managing the sub-categories of the mobiles in the shop. The Shop Owner can view different reports that give details of the sales and orders specific to his shop. The Shop Owner can also decide to close shop and remove it from the mall.

**Employees:** Purchase department under a Purchase Manager to overlook purchasing activities if warehousing needs arise.

* **Security and User Capabilities:**

The software system will support three types of users. In order to access the system all the users will need to login with a password. At the administrative login level, the user will be given additional permissions such as adding or changing staff levels and user types. A limited ability to change categories on the input forms will also be provided. At the other access level (for Librarians, Student, and Reference assistants), only the data entry and editing functionalities would be provided.

* **Reporting**

The reports generated will help in statistical analysis of the reference data that is collected and stored in the central data repository. Daily, weekly, monthly, quarterly, and yearly reports will be created using the functionalities of the system and sorted data.

* **Non-functional requirements**

The software system will be installed and run on existing Windows systems and the system will be tested out on the library servers. The system needs to be functional whenever reference staff needs to access it.

The criteria for success of the system would be measured by the flexibility and sustainability of the system. The functionality and ability of the system to meet all requirements (i.e. simultaneous access from different workstations, effectiveness of the design of the central data repository, automatic backups, retroactive editing of data, various levels of user access, etc.) would be critical for success as well. Ease of use and efficiency would be adequate measures of performance; after a week of training and testing, the users should be able to use the system effectively.

* **Optional Features**

Ideally, the system should be able to generate data in comma-separated value files, which are known to be easily imported into Excel.

The system may contain a searchable notes field where additional information can be entered via the user interface. Users will be able to search for reference statistics using keywords.

* **Usability**

Usability issues such as speed of operation for the user interface, collection and storage of important quantitative data, speed and efficiency of the work flow processes through automation, and concurrency of collected data will be important considerations.

* **Scope**

The scope of our system includes reference data entry, tabular report generation, and administrative system tasks including user editing, system backup, and limited field editing.

The system will not have general spreadsheet capabilities. It will only perform the calculations necessary to produce the electronic version of the current paper report.

The system will not support critical changes to the fundamental way information is gathered. It will support category renaming and the addition of new user types and locations.

* **Suggested Deliverables**

**Management Deliverables:**

* Requirements Analysis– a document and a presentation to go over the formal requirements of the project, both functional and non-functional. This deliverable ensures that the Group is working on a system that closely matches to the wishes of the Client. This deliverable gives the Client a chance to modify and correct items that were miss-communicated or missed out before allowing the Group to proceed further in the design.
* Design Document– a document and a presentation to go over the design of the System. This is the Group’s opportunity to go over how the project is to be implemented to the Client. This deliverable is done by the more technical and experienced in the Group, based on the understanding of the requirements established in the previous deliverable.
* Source Code– a document, presentation along with the source code of the final completed project. This final deliverable wraps up and concludes the project. In this deliverable, the Group delivers the final implementation based on the requirements specified and the design developed in previous stages. The system would have been tested thoroughly with unit tests and with a final acceptance test and would be ready for deployment to the production system.

**Technical Deliverables:**

* A databasewith the required tables to support the inventory system—a database needs to be set up on the library servers with the tables needed in the system to store the inventory information, geo-referenced materials, and other cartographic data.
* An administrative interfaceto add, modify, delete and search for inventory—a webpage designed to allow the administrator (ie., the Client) of the system to add information to the inventory system for every map that is found in the library and to build up an electronic record of the resources that are found in the library.
* An interactive mapwith labeled countries and clear national boundaries—a map of the world with zooming capabilities and re-centering functions, labeled with names corresponding to the current view of the map, that has clear boundary lines (ie., country border) on a web page.
* A side menuthat is populated with cartographic information based on the inventory—a portion of the web page that shows available cartographic resources for the selected region, based on information in the inventory database. The information that will be displayed has yet to be decided.
* **Outline Plan (Iterations and Milestones):**

Below is the proposed outline of the iteration stages and milestones including what the team expects to have completed at each stage.

* **Milestone 1 (December 3, 2020)** -- **Requirements Analysis (Draft).**

An initial draft of the requirements analysis should be done as Milestone 1. This should come after a formal requirements gathering meeting with the Client.

* **Milestone 2 (December 10, 2020) –** **Requirements Analysis (Final).**

The final draft of the requirements analysis should be done for Milestone 2. In addition, a presentation will be prepared as a part of this milestone.

* **Milestone 3 (December 24, 2020) –** **Software Architecture and Design (Draft).**

An initial draft of the software architecture and design should be done as Milestone. A meeting with the Client should follow Milestone 3 to get feedback on the design of the system.

* **Milestone 4 (January 7, 2020) –** **Software Architecture and Design (Final).**

A final draft of the software architecture and design document should be done for Milestone 4. A presentation should be prepared for the Client.

* **Milestone 5 (January 14, 2020) – Database.**

The database is the most important part of the system, as it is the center of all information. All subsequent system components depend on this deliverable. A database schema needs to be fixed for Milestone 5 to provide a basis for the other components to be based on.

* **Milestone 6 (January 21, 2020) – Inventory Control.**

As the menu of cartographic information needs to be published using information in the database, the next bottleneck is the inventory control, which is a graphical interface to allow the administrator to enter, modify, and delete data.

* **Milestone 7 (January 28, 2020) – Map and Menu.**

The map and the menu are the front-end graphical web interface that the public user sees and interacts with. Milestone 7 is to reach feature-completion on the requirements.

* **Milestone 8 (February 5, 2020) – Testing, Debugging and Integration.**

The system needs to be well-tested, debugged at this milestone. Also, once the system has passed the acceptance test, it needs to be integrated to the actual production system for this milestone.

* **Milestone 9 (February 11, 2020) – Project Deadline.**

The project source code should be handed over to the Client for the final milestone. A presentation is presented to the Client.

* **Risk Analysis**

**1. Changing Requirements:**

**Risk:**The Client may have different ideas about the system during the course of the project. Depending on the situation, the changes that the Client wishes to have implemented may require little or major changes to the architecture.

**Solution*:***To reduce the possibility of this occurring, the Group needs to establish a clear visibility plan with the Client.

**2. Incomplete Requirements:**

**Risk:**It is possible that requirements may be implied but not discussed or misunderstood. This frequently occurs after meetings.

**Solution:**The Group’s interpretation of the Client’s requirements will be presented back to the Client to get a confirmation on whether the Group has understood the Client. Frequent client updates and a high level of visibility will also help call attention to any misunderstandings.

**3. Lack of Resources, Tools:**

**Risk:**For the project to meet one of the functional requirements (clicking an area of a map within the boundaries of a country should select that country), a geo-decoding tool is needed. However, at the time of writing of this document, no public/free tools can be found that can do this longitude-latitude pair and country conversion.

**Solution:**A workaround is proposed that would meet the minimal level of this requirement by defining the borders of the selection area to be a rectangle defined by the maximum and minimum longitude and latitude pairs.

**4. System Integration:**

**Risk:**Depending on the level of access to the servers that the Group receives, the Group may need to work on the system offline and eventually integrate with the production system when it is ready and thoroughly tested. Due to different software configuration, there may be unpredictable obstacles.

**Solution:**To ensure a smooth system integration, the Group needs to be aware of as much about the configuration as early as possible.

**5. Technical Requirements:**

**Risk**:The software and hardware server environment are not perfectly certain at this point. The client is not aware of the technical aspects of the project. The technical server configuration may have an effect on system architecture and design.

**Solution**:To resolve this problem, the Group has requested the client to refer the Group to the technical staff working at the library for further inquiries.

**6. Non-functional Requirements:**

**Risk**:Similar to incomplete requirements, non-functional requirements is something that has not been brought up in the initial meeting with the Client. These include requirements on the number of users that the system expects to support concurrently, and the response time of the database lookup.

**Solution**:A follow up meeting is needed to specify the non-functional requirements.

**7. Human resources:**

**Risk:** The Group is relatively small consisting of only 5 members, some members are not technically oriented and almost all members have limited knowledge of relevant web-technologies.

**Solution:**For these reason the Group acknowledges that a slow design and implementation phase may be inevitable, and are planning accordingly.

* **VISIBILITY**

The team will take efforts to maximize the visibility of the system and the development process. This will ensure that the project is being developed in line with client specifications. Any deviations from those specifications can also be caught early and corrected through client feedback. Various visibility methods the team intends to use are described below.

**Communication**

In person meetings and emails would be the primary form of open communication to keep the clients updated with the progress of the project. Regular meetings will be held with the client to discuss progress and for the purposes of two way feedback. The team will also meet as a whole at least once a week to assure all members are caught up and understand their roles and jobs.

**Intermediate Deliverables and Presentations**

Live demonstrations: The client will be given demonstrations of the progress through presentations at the client site and at the monthly presentations corresponding to each major phase in the project.

**Presentations**: Slideshows of design layouts of screens, reports and demos of working functions, and the system will be shown to the client to keep them updated with the team’s progress

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**Reports:** The clients will also be presented with copies of the documentation, which record details at each phase in the software development process. These progress reports will also enable them to be well aware of the details of the project from their perspectives.

* **Conclusion:**

This report has determined the factors that assess the quality of an E-commerce website, identify and rating the main quality attributes to this application domain. The list of attributes was derived from the specialized literature. The survey and analysis described in this paper enabled a greater understanding of the inter-relations and influences these sub-factors have on the main quality factors. The results provide an important foundation for the understanding of quality in E-commerce websites that will allow developers to assess the strengths and weaknesses of their sites in order to know where to focus further development to achieve the high quality needed for Ecommerce success.