Requirements Specifications Document

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Table of Contents

1 Purpose

The purpose of this document is to list the requirements for the Basis of Estimate project that MSE has proposed . This will be done by specifying user, system, and compliance requirements. All of these are required to follow SMART criteria. The user requirements should allow customers, managers, and any other regular users of the program to have a clear understanding of the purpose of the project. The system requirements should allow developers, system architects, and client engineers to have a clear understanding of the environment the product should perform in. The compliance requirements outline how the database and website should be regulated. This document should be maintained throughout the lift of the program for any changes in requirements.

2 Scope

The scope of this document covers only the requirements which fall within the bounds of the Basis of Estimate project. The scope of the requirements will include a database which will hold tables of information pertaining to previous projects that MSE has completed. The requirements will also include the website which will be used to interact with the database allowing users to store, retrieve, and manipulate the data inside.

2.1 Exclusions, Assumptions, and Limitations

- Exclusions: As of right now supporting filetypes beside csv and json is not a top priority and will be seen as an exclusion during development; it is not a requirement to be attained by the team.
- Assumptions: It is currently being assumed the requirements have the potential to be changed at any point during development to better suit the needs of MSE. It is also assumed the website will function on all major browsers.
- Limitations: Any user interacting with the frontend can not remove data from the database. The database management system being used for this project is limited to mySQL.

3 Requirements

The requirements section will be broken down into 3 smaller sections.

- User requirements: These requirements are what the customer, as a group, wants to be produced from the project once it is finished. These are usually high level goals and may change as the project moves forward especially in an agile environment.
- System requirements: The system requirements give a detailed description of a project's functions, services, and operational constraints while defining what should be implemented into the project. System requirements can be broken down into two different categories as follows:
    - Functional requirements: This describes the services the product should provide and how the product should react based on given inputs. It also sets boundaries for how the product should respond in certain situations that arise.
    - Non-functional requirements: This describes the limitations of the services offered by the product. This includes things like timing, development, and process limitations.

- Compliance requirements: Certain regulations that the requirements, while being produced, must follow during the creation of the database and afterwards.

3.1 User Requirements

Req#	Requirement Description	Scope	RCR	RRR
UR1	**Information vital to the project estimation will be able to be stored into appropriate database tables by way of a website.**	**Sprint 1**	**high**	**high**
UR2	**A layout will be created by team snake to show the order in which the data will need to be entered when using a csv file to input information into the database.**	**sprint 2**	**high**	**high**
UR3	**An ER diagram will be provided by team snake to show a layout of the database for management's convenience.**	**Sprint 5**	**med**	**med**
UR4	**The website will allow data input to the database by way of manual user input.**	**Sprint 2**	**med**	**high**
UR5	**The website will allow input by way of a desired file type if supported. If the file type is not supported by the website then it will not allow input.**	**sprint 3**	**high**	**high**

UR6	**Any data entered into the database through the website that contains syntax errors will be caught by the front end which will notify the user of the syntax error.**	**Sprint 4**	**high**	**high**
UR7	**On the website, the user will be able to look for specific details on any important element that is encompassed in the database by searching with details relating to that element.**	**sprint 3**	**high**	**high**
UR8	**The website will allow the user to make changes to any encompassed data in the database by first searching for the element that holds the data and then entering the new data manually.**	**sprint 3**	**high**	**high**
UR9	**Information generated from the database is displayed as a report on the website containing the requested user information.**	**Sprint 3**	**high**	**high**
UR10	**A website interface that clearly labels the options that are available to the user so a new user can successfully learn and navigate the system within one hour.**	**Sprint 2**	**med**	**med**
UR11	**Information requested by a user through the website is obtained within a time proportional to the complexity of the information being requested.**	**Sprint 1**	**high**	**high**
UR12	**The database will be made to hold the structure for any projects that will relate to the Basis of Estimate project.**	**Sprint 5**	**high**	**high**
UR13	**Database is able to take in information from past projects and manipulate that information to make a basis of estimate for future projects.**	**Sprint 4**	**high**	**high**

UR14	**The workings of the entire Basis of Estimate project is clearly stated by deliverable documentations provided by team snake throughout the development of the project.**	**Sprint 5**	**high**	**med**

3.2 System Requirements

Req#	Requirement Description	Scope	RCR	RRR
SR1	**The website will require a login(username and password) so that data can be inputted into the database securely.**	**sprint 2**	**med**	**high**
SR2	**From SR1 login data will be hashed and stored within another database.**	**sprint 2**	**med**	**med**
SR3	**The website will allow users to input information manually by way of preselected parameters which are labeled to reflect their respective entry into the database.**	**sprint 2**	**med**	**med**
SR4	**The website will allow file input by way of an upload button that will allow the user to search through files on their system to find and select the file they want to upload.**	**sprint 2**	**high**	**high**
SR5	**From SR4 when uploading a file the user will need to select whether the file being uploaded has a header or doesn't have a header.**	**sprint 2**	**high**	**med**

SR6	**Ability to calculate metrics for future projects based off of the metrics of past projects that are stored in the database.**	**sprint 4**	**high**	**high**
SR7	**If a user inputs incomplete data, the system alerts the user and prevents the incomplete data from being inserted into database.**	**sprint 3**	**high**	**high**
SR8	**The website handles errors from SR7 by checking against the database.**	**sprint 3**	**high**	**high**
SR9	**The database needs to be capable of storing the project being inserted that includes details pertaining to the programs, wbs, CPCR, date of development, sloc of project, hours spent on project, name of sprints in project, and weeks of the sprint.**	**sprint 4**	**high**	**high**
SR10	**The database will have stored procedures to implement frequently used sql code so the full command of the code doesn't have to be typed out each time it is needed.**	**Sprint 3**	**med**	**low**
SR11	**If a user tries to input a file not allowed by the database the website will alert the user about this problem. and reject the file from being uploaded.**	**sprint 3**	**high**	**high**
SR12	**The database can store gigabytes of historical data without hanging up when completing any calculations or adding more data.**	**TBD**	**high**	**high**

3.3 Compliance Requirements

CRS#	Requirement Description	Scope	RCR	RRR
CR1	The database is to be made to hold all relevant information from previous projects to make basis of estimate reports.	sprint 3	high	high
CR2	Database can take in and parse information from a csv file or json file.	Sprint 2	high	high
CR3	A website is required to handle the user interaction with the database.	sprint 2	high	high
CR4	The website needs to allow multiple levels of access for regular users and management users.	sprint 5	high	high
CR5	Regular users will be allowed to look at reports and search through the database.	sprint 4	high	med
CR6	Management users will be allowed to work with all website functions including but not limited to reports, searching, and changing of the data inside the database.	sprint 3	high	high

4 Roles and Responsibilities

The following describes the Roles and Responsibilities for developing, verifying, and implementing a Solution. A note on the development team roles, these are all interchangeable but are listed specifically as such because some development team members have skills more attuned

to certain areas and will be used as such during development to get the most productivity out of all team members.

Role	Responsibilities
Product Owner	Manages the product backlog and does most of the interaction with the MSE employees
Scrum Master	Makes sure everyone follows the scrum methodology and solves any problems the development team might have
Development Team	Does the bulk of the design and implementation of the project.
Development Team github master	This member of the dev team will be in charge of handling github repository along with any questions anyone has about github for this project.
Development Team front end builder	This member of the dev team will be responsible for creating the front end website for the project.
Development Team database builders	These team members will be responsible for the creation of the database for this project.

5 Terms and Definitions

The IT Glossary of Terms maintains the common terms in this document. Additional terms and definitions specific to this document are included below:

Term or Acronym	Definition
PK	Stands for Primary key, which is a special relationship used in a tables column to identify a tables records. If a variable is a primary key it must contain a unique value for each row of data.
FK	Stands for foreign key, which is a field in a table that refers uniquely to a specific row of another table. This means that the foreign key is defined in a second table, but it refers to the primary key in the first table.
RCR	Requirements criticality rating, is how critical this requirement is to the project.
RRR	Requirements risk rating, is the type of risk that could appear from the requirement not being implemented correctly into the project.
Basis of estimate	Used to estimate specific parts of a project depending on desired analysis
ER diagram	This stands for entity relationship diagram, which is used to show relationships between entities inside a database. This allows easy visualization of the database.
SQL injection	where an attacker executes malicious sql statements in order to obtain and retrieve data from the database
WBS	Stands for work breakdown structure and includes the following information: the wbs code and the wbs name.
Program	Section of the project that is being worked on. Includes the following: Program code, program name, build date, and end date.

CPCR	Bug status from a product and program in the project that includes information about the bug status, last update for the bug, and the creation date of the bug.

6 Supporting References

There are no supporting references specific to this document.

7 Revision History

Version	Version Date	Revisions
1.0	**10/12/16**	**Added purpose and scope to document**
1.1	**10/14/2016**	**Added Requirements, roles and responsibilities, terms and responsibilities, and supporting references**
1.2	**10/15/2016**	**Fixes to different sections**
1.3	**11/29/2016**	**Redone to reflect SMART criteria. Grammatical fixes.**
1.4	**12/4/2016**	**Updated to reflect current requirements.**