Database EVALUATOR DELIVERY Approach Definition

Document history

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Purpose of this document

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|  | * To define standards and styles to be applied during development of the solution * To describe practices to be adopted by the Solution Development Teams in the development of those technical products * To define the Configuration Management process for the technical deliverables of the solution * To describe how, and against what criteria, the outputs of the project will be reviewed and tested. * To describe testing and/or review techniques that will be applied in the development phases of the project. |  |

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# Project Overview

## Objectives and Success Criteria

* **Objectives**

This project can help customers to determine the configuration parameter values for all databases securely and efficiently.

The project is on the using of Microsoft Visual Studio and SQL Server Express to develop a client application and database evaluator. Customers can download the client application from the website and execute it to get the dump files which contain the configuration parameter values for all databses, and upload files to the website, which would after diagnosis reports.

* **Success Criteria**
* Project is completed on time. According to schedule determined at project outset.
* Overall Project quality objectives are met based on baseline, goals, targets, or expectations.
* The project outcome (product, system, service) meet all specified requirements.
* The project outcomes (product, system, service) are used for its intended purpose once completed.

## Milestones and Key Products

|  |  |
| --- | --- |
| Milestones | Key Products |
| Project Proposal | Project Proposal |
| Client brief document |
| Team contract |
| Project Plan/Gantt Chart | Project Plan/Gantt Chart |
| Scope of Project |
| Analysis and Design Documents | Requirements Analysis Document |
| Analysis and Design Document |
| Methodology and Techniques Document |
| Exploration | Client Application |
| Website |
| Engineering | Database Evaluator |
| System Test | System Test Plan |
| System Test Record |

## Key Product Acceptance Criteria

* Client application
* Client application which is a lightweight application could be executed on their database system and generated the encrypted dump files which contain all the agreed database and SQL instance parameter values.
* Website
* Website is provided for customer to use.
* Customer can create their account on the website.
* Customer can download Client application from the website.
* Customer also can use FTP to upload dump file and download the final report.
* Database Evaluator
* Database Evaluator (DBE) can generate the final diagnosed report when customers upload the dump file.

# Project Standards

## Analysis and Design Standards

During the Requirements analysis phase:

Including three stages:

* **Requirements Elicitation**

Focus on collecting the needs of customer or actual users of the system.

* **Requirements Specification**

Identify the needs of users and a comprehensive, clear the vague, ambiguous and inconsistent requirements, and analyze the data requirements of the system.

* **Requirements Validation**

Users and software designers need to meet analysts to review the generated requirement specification to ensure that the software needs complete, accurate, clear, specific, once the missing or blurred discovery must be corrected as soon as possible, re-examination.

During the Design phase:

Including two stages:

* **Preliminary Design**

By decomposing the system into modules to determine the system functions to be achieved on the basis of Requirements Analysis.

* **Detailed Design**

Detailed design is a refinement on the preliminary design, detailed design is the algorithm of each module, the required local data structure.

This project will use DSDM Atern methodology. In the context of DSDM the MoSCoW technique is used to prioritise requirements. It is an acronym that stands for:

MoSCoW - MoSCoW represents a way of prioritising items. In the context of DSDM the MoSCoW technique is used to prioritise requirements. It is an acronym that stands for:

* + MUST have this requirement to meet the business needs.
  + SHOULD have this requirement if at all possible, but the project success does not rely on this.
  + COULD have this requirement if it does not affect the fitness of business needs of the project.
  + WON'T represents a requirement that stakeholders have agreed will not be implemented in a given release, but may be considered for the future.

## Coding Standards

To ensure the maintainability of the software being created, some coding standards will be followed as follows:

* **Comments**

Comments will be placed throughout the code base to ensure that the different functions and logic involved can be easily understood by future developers.

* **Code Formatting**

The code will be formatted as per standards to enhance the readability of the programs.

* **Testing**

There will be regular testing of functionalities to ensure that everything works as per design and no previous features are broken by newly created ones.

* **Documentation**

All software produced would have their corresponding technical documentation to give an overview of how it works and how it is structured.

# Development Approach

## Iterative Development Strategy

The project will use DSDM methodology. This process has five phases: Pre-Project, Feasibility and Foundations, Exploration, Engineering and finally Deployment.

* The Pre-Project phase will ensure that only the right projects are started and that they are set up correctly.
* The Feasibility and Foundations phases will be completed sequentially. These phases could be combined in small projects, the key thing is to understand the scope of work, and how it will be carried out.
* During the Exploration phase, all or some parts of the problem or opportunity is investigated and a partial solution is created.
* During the Engineering phase, this partial solution is made robust enough for operational use.
* The Deployment phase places the solution created in an increment into operational use.

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## Business Acceptance Testing Strategy

According on the condition of this project, it will use Alpha & Beta Testing as Business Acceptance Testing Strategy.

Alpha Testing will take place in the development environment and is done by project team.

During the Alpha Testing, the testers will collect the feedback, these can be used to fix certain issues or bugs and improve the usability of the product.

Beta Testing normally takes place in the customer’s environment and involves some extensive testing by a group of customers who use the system in their environment.

Based on our project, we do not have the particular customer, therefore Beta Testing will take place by project team in the simulate customer’s environment and involves some extensive testing.

During the Beta Testing, the testers will provide feedback, which in turn leads to improvements of the product.

## Technical Testing Strategy

This project will use Unit Testing, Integration testing and System Testing as Technical Testing Strategy.

**Unit Testing:**

Unit testing is the smallest tested function module. Unit testing that will be completed by the developer is the lowest level of test activities during the development process to be carried out. Independent software unit will be tested in the case with the rest of the isolated program phase.

During this project, Patrick as the C# Developer of Client Application and Database Evaluator will take the duty of Unit testing of these and make sure the developed functions are correct. Kwinno as the Web Developer also has the duty of doing Unit testing. Hardik as the database specialist should help the developers to do the Unit Testing.

**Integration Testing:**

Integration testing is performed on the basis of Unit Testing, it also can be seen as a logical extension of unit testing. The simplest form of integration testing is that the combination of the two tested units as a component test the interfaces between them.

Patrick and Kwinno as the developers will take the duty of Integration Testing and make sure the connection of each part of product is correct. Hardik as the database specialist should help the developers to do the Integration Testing.

**System Testing:**

This project will have the System Testing. System testing is conducted for the entire product system test and the purpose is to verify that the system meets the requirements specification definition, find out and demand specifications or with the contradiction of place, and then puts forward the better solution.

All the team members will be as testers to do the System Testing.

## Technical Review Approach

The project will have a peer review in the software life cycle.

Peer review is a method to check whether the software product is suitable for its intended purpose and determine the specification and standard.

It will involve management review, technical review, and document review and evaluation process.