Database EvaluatOr

close out report

Document history

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| --- | --- | --- | --- | --- |
| Version | Date | Author | Changes | Valid from |
| 1.0 | 10-Oct-2016 | Changming Wu | Draft |  |
| 1.0 | 12-Oct-2016 | Changming Wu | Edit |  |

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# Overview of project

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 databases, and upload files to the website, which would after diagnosis reports.

## Objectives

* Client application

Client application is small and light weight application which will be executed by customer on their database system and application generated encrypted dump file which contains all the agreed database and SQL instance parameter values.

* Website

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.

## Team Members

|  |  |
| --- | --- |
| Resource Name | Role |
| Steve McKinlay | Project Advisor |
| Patrick Cura | C# Developer/ Tester |
| Hardik Kansara | Database Specialist/ Tester |
| Kwinno Pineda | Website Developer/ Tester |
| Changming Wu | Project Manager / Tester Manager |

## Roles and Responsibilities

* Project Advisor
* Gave the corresponding feedbacks and suggestions when project required.
* C# developer
* Developed client application and database evaluator.
* Worked with Web Developer and Database Specialist to integrate website, client application and database.
* Worked with the Project Manager for the definition of development requirements and priorities.
* Developed project tasks with goals and schedule
* Set up interfaces with other systems.
* Reported configuration and deployment.
* Developed the technical documentation
* Reported on progress/issues to management.
* Worked with tester to solve the faults/bugs that were been found in testing progress.
* Web Developer
* Developed a website that the customers can download client application and upload dump files.
* Worked with Database Specialist and C# developer to integrate website, client application and database.
* Worked with the Project Manager for definition of development requirements and priorities.
* Developed project tasks with goals and schedule
* Set up interfaces with other systems.
* Reported configuration and deployment.
* Developed and operated of technical testing project.
* Developed the technical documentation
* Reported on progress/issues to management.
* Worked with tester to solve the faults/bugs that are found in testing progress.
* Database Specialist
* Worked with the Project Manager to manage the creation of the project specification and requirements.
* Worked with Web Developer and C# Developer to handle the database evaluation guidelines and the database queries.
* Developed project tasks with goals and schedule with project manager.
* Set up interfaces with other systems.
* Reported configuration and deployment.
* Developed the technical documentation
* Reported on progress/issues to management.
* Worked with tester to solve the faults/bugs that are found in testing progress.
* Project manager
* Managed and lead the project team.
* Developed and maintain a detailed project plan.
* Managed project deliverables in line with the project plan.
* Recorded and manage project issues and escalating where necessary.
* Managed project scope and change control and escalate issues where necessary.
* Monitored project progress.
* Provided supportive reports of project.
* Test Manager
* Defined and implement the role testing plays within the organization.
* Defined the scope of testing within the context of each release/delivery.
* Deployed and manage the appropriate testing framework to meet the testing mandate.
* Implement and evolving appropriate measurements and metrics.
* Planned, deployed and managed the testing effort for any given engagement/release.
* Tester
* Read all the documents and understand what needs to be tested.
* Based on the all documents to decide how it is to be tested.
* Informed the test lead about what all resources will be required for software testing.
* Developed test cases and prioritized testing activities.
* Executed all the test case and reported defects, define severity and priority for each defect.
* Carried out regression testing every time when changes are made to the code to fix defects.

# Scope of Project

* Inclusions
* Client application
* Install
* Uninstall
* Execute on user’s system
* Collect/check the parameters of user’s database
* Generate the dump files of parameters of customers’ database
* Website
* User: register
* User/ Administrator: login in
* User: forgot password
* User: download client application form website
* User: upload the encrypted dump files via website
* User: view and download the final diagnosed report
* Administrator: upload the final diagnosed report
* Database Evaluator
* Quote the encrypted dump files
* Generate the final diagnosed report
* Exclusions
* This project will not support the all type of operating system except Microsoft Windows.
* This project will not support the all type of database except Microsoft SQL 2008 R2 and Microsoft SQL 2012.

# Analysis of Achievements

## Schedule

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Phase** | **Pre-Project** | **Feasibility and Foundations** | **Exploration** | **Engineering** | **Deployment** |
| Baseline Start Date | 11/07/2016 | 1/08/2016 | 8/08/2016 | 5/09/2016 | 26/09/2016 |
| Baseline Finish Date | 5/08/2016 | 5/08/2016 | 3/09/2016 | 23/09/2016 | 9/10/2016 |
| Duration | 20 days | 4 days | 20 days | 15 days | 10 days |
| Actual Start Date | 11/07/2016 | 3/08/2016 | 8/08/2016 | 5/09/2016 | 15/09/2016 |
| Actual Finish Date | 10/08/2016 | 5/08/2016 | 8/09/2016 | 9/10/2016 | 9/10/2016 |
| Duration | 25 days | 2 days | 25 days | 25 days | 17 days |
| Variance | +5 days | -2 days | +5 days | +5 days | +7 days |

The above tables provides the data of each phase of this project. As can be seen clearly from the table, the fluctuation happened on Pre-Project Phase to Foundations Phase. The variance was increasing dramatically of the last three phase. During the Exploration Phase, These issues (these issues and their solutions will be expounded on the section ***7 Issues and Solutions***) cost a lot of project time to finish.

## The status of tasks and deliverables

|  |  |  |
| --- | --- | --- |
| **Phase** | **Document** | **Status** |
| Pre-Project | Project Proposal | Complete |
| Gantt Chart | Complete |
| Scope of project | Complete |
| Client Briefing | Complete |
| Team contract | Complete |
| Delivery Approach Definition | Complete |
| Management Foundations | Complete |
| Terms Of Reference | Complete |
| Feasibility and Foundations | Requirements Analysis Document | Complete |
| System Analysis and Design Document | Complete |
| Methodology and Techniques Document | Complete |
| Business Foundations | Complete |
| Feasibility Assessment | Complete |
| System Architecture Definition | Complete |
| Prioritised Requirements List | Complete |
| Exploration | Client Application Development | Complete |
| Website Development | Complete |
| Test Report for Application | Complete |
| Test Report for Website | Complete |
| Issue Register | Complete |
| Prioritised Requirements List | Complete |
| Risk Log | Complete |
| Testing Log | Complete |
| Engineering | Database Evaluator Development | Complete |
| Website Development (Upload Page, Forgot Password Page, Documentation Page, Notification function) | Complete |
| Upload Website to online | Complete |
| Test Report for Application | Complete |
| Test Report for Website | Complete |
| Issue Register | Complete |
| Prioritised Requirements List | Complete |
| Risk Log | Complete |
| Testing Log | Complete |
| Deployment | Combine Website, Client Application and Database Evaluator | Complete |
| Test Plan for system test | Complete |
| Test case for system test | Complete |
| Perform and record test results for System Test | Complete |
| System test report | Complete |
| Issue Register | Complete |
| Prioritised Requirements List | Complete |
| Risk Log | Complete |
| Testing Log | Complete |

## Budgets

This project has no equipment costs, material costs and other costs, only has the investment of human resources. There are four members in this project. Project team used 14 weeks to complete this project, it cost a total of 1794 hours.

## Quality

During the Exploration and Engineering Phase, developers and specialist did the unit test and integration test for each iteration.

During the Deployment, project team did the system test for the whole product. The system test used the functional test. This functional testing focused on a part of inclusions scope which has been defined in the test plan including. After developers fixed the defects and testers retested. The result met the exit criteria of test plan

The pass rate of functional test cases is 100%. All discovered defects have been fixed, no leave over defects are not fixed.

The product met the all functions as planned requirements.

# Assessment of Project

This project team considered this project has been mostly successful but there have been some low points.

* Advantages
* We followed the methodology which we used in this project.
* For different phase, project team created the deliverables, main documents and supportive documents.
* Project team completed all tasks which have been list on the requirements analysis document.
* In order to ensure the quality of the whole product. Project team not only did the unit test and integration test for each iteration, but also did the system test for the whole product.
* Disadvantages
* Project team did not have a very good progress control and estimate the processing time.
* Project team forgot to assign its mission to the project plan such as Create the Project Close Out Report and Create Implementation Support Document.
* At the beginning, the project had already behind the planned schedule one week of Pre-Project phase. Because a lot of changed of the documents have been occurred including project proposal, Gantt chart, client brief document and methodology. As the estimation of project team, we should spend three weeks to catch up the behind schedule.
* Though the effort of all team members, we nearly caught the schedule on the time. Unfortunately, project team was behind the schedule again on the Engineering Phase because of the issues of uploading website. For catching up the behind schedule, project started to perform the system test on the planned date. In order to ensure the quality, project team applied the request change on the schedule to increase the time of system test.

In summary, although there has some low and unwell points, this project has been mostly successful.

# Team’s performance

Every team member of the project worked very hard during this period of this project. Because the change of project development methodology and issues which met during the development. For these reasons, the project has not been able to be carried out in accordance with the expected the planning time.

When the project team realized that the progress of the project has lagged behind the plan, team members aligned themselves with the fast tracking mechanism to do multiple tasks at the same time in order to catch up the behind schedule.

* C# developer
* He is a very excellent and professional developer。
* During the project, the C# developer not only developed the high quality client application and database evaluator, but also worked with Web Developer and Database Specialist to integrate website, client application and database.
* Did the testing for the developing products.
* Reported the status of progress/issues to project manager.
* Helped project manager to create the documents of this project.
* Web Developer
* He is a very excellent and professional developer.
* Did a lot of research of methodology – DSDM Atern.
* Help team member to understand the development methodology.
* During the project, the web developer not only developed a wonderful website for this project, but also worked with C# Developer and Database Specialist to integrate website, client application and database.
* Did the testing for the developing products.
* Reported the status of progress/issues to project manager.
* Helped project manager to create the documents of this project.
* Database Specialist
* He is a very excellent and professional database specialist。
* He not only did his own job, and took the initiative to help other developers to solve the database problems in the project。
* Leading team was not his primary responsibility, but he chose and act as team leader to help project manager to carry out the project when project were behind schedule.
* Did the testing for the developing products.
* Reported the status of progress/issues to project manager.
* Helped project manager to create the documents of this project.
* Project manager
* He is a qualified project manager
* Handled the project management aspects
* Monitored and controlled the project progress
* Provided supportive reports of project
* Motivated team members

# Project Management

* Highlights
* The project manager held the meetings regularly with the project advisor and team members to monitor progress and manage arising issues.
* The project manager created the weekly progress report for the project advisor and team members about the project progress.
* Any risk and issues or changes that arise during the Project has been kept to record.
* Change Management controls was introduced to manage all aspects of this Project.
* Project team used the change control form to control all the necessary change in the project which signed by the all agreed project members.
* Project team had a good conversation about the issues of development and progress.

During the First Audit, Project Co-ordinator pointed out the low points of our project.

* Low points
* At the beginning of the project, although we used GitHub that is a document management application to keep track of the code and documentations, we did not do the backup for each week.
* We did not meet our project advisor few weeks because we would like to prepare all documents of Pro-Project Phase and Foundations Phase before we met our project advisor.
* For the project progress, we just reviewed and discussed the status of project during the team meeting, and wrote the team meeting minutes for every week including project progress. Therefore, we did not create the weekly progress report at the beginning few weeks
* The meeting agenda and meeting minutes did not match 1:1. Sometimes, we modified the discussing topic of meeting minutes.

After the First Audit, we followed the comments from Project Co-ordinator to improve our project management.

# Issues and solutions

* Though the monitored project progress, project team realized that the progress of schedule had already behind the planned schedule one week. Because a lot of changed of the documents have been occurred including project proposal, Gantt chart, client brief document and methodology. Project team had to do the search of new methodology, make and plan the tasks to flow the methodology and goals.
* **Solution**
* Project team made an estimation of the behind schedule, it will cost their 3 weeks to catch up the scheduled.
* Set more detailing goals for each task every day.
* Fast tracking. Project team will do the some tasks as same time. (But it involves risk that could lead to increased cost and some rework later)
* On the exploration phase
* The main issue of this phase is that how Administrator account of Website upload the particular diagnosed file to particular user. In theFoundations Phase, project team did a mistake on this point. We did not thing about the how to send the final diagnosed report to the user expediently.
* Solution

There are three solution options for this issue

* Send an email to user instead to upload file
* Using the existing code to add the upload file function for solving this problem
* Create own code for upload file function for particular user
* Project had already behind the planned schedule again during the Engineering Phase because the issues of uploading the website to online as the following list:
* Different structure between local host and online server.
* Does not automatically change the path when upload the website to online.
* Therefore resulting that the functions are working on the local host, but some functions do not work on the online server.
* Therefore, developers used more time than expected on uploading the Website to online, this phase was behind the planned schedule.
* **Solution**
* In order to ensure the progress of the project, project team still did the system test on the planned schedule. We did the system test on the local host Website with the Client Application and Database Evaluator, but in order to ensure the quality, we increased one week to do the system test on the online Website with the Client Application and Database Evaluator.
* Increase test time (03/10/16 – 09/10/16)

Add 2 more iterations for system test

Iteration 3: 02/10/16 – 03/10/16

04/10/16: fix issues

Iteration 4: 05/10/16 – 06/10/16

07/10/16 – 08/10/16: fix issues and regression test

# Lessons Learned

* For Pre-Project Phase
* At the beginning, this project has changed the methodology from Spiral to DSDM Atern based on the comment for the Project Co-ordinator.
* Project team did a lot of research and study on DSDM. We clearly understood the tasks for each phase and created the Gantt chart to meet DSDM.
* Project team had created the planned documents of this phase as well as created the supportive documents are recommended of Project in the box.
* For Foundations Phase
* Know what the different from Requirement Analysis Document and System Analysis and Design Document

Requirement analysis –

* Analysis document focused on the logical execution steps
* It includes all the requirements, all the functions your system is going to do.
* All the requirement of your system have, system hardware, list all the requirement you will do.

System design analysis –

* Design document focused on details function execution
* Relate to the environment of asset for you to run the system, hardware we need (such as memory requirement).
* Sometime it called as non-functional requirement.
* It is part of environment
* For Exploration Phase
* Developers have a clearer and understanding idea of how to develop the website and application.
* Developers knew how to solve the technology and security questions which occurred in this phase such as String Encryption through they did research and study.
* Developers and specialist worked together to combine the function and connection between application and database.
* For Engineering Phase
* Developers have a clearer and understanding idea of how to develop the website and application.
* Developers knew how to solve the technology and security questions which occurred in this phase such as String Encryption through they did research and study.
* Developers and specialist worked together to combine the function and connection between application and database.
* For Deployment Phase
* Developers and specialist worked together to combine Website, Client Application and Database Evaluator and solved the issues during the combination of whole product.
* Developers have a clearer and understanding idea of testing and how to test a whole product. During the system test, project team used some testing approaches to test the whole product.
* Unit test
* Integration test
* System test
* Functional test
* Business test
* Installation test

These testing approached focused on the different items of testing.

* Other
* Have a deeply understanding:
* How to create the formal project proposal
* How Estimate the processing time
* How to monitor and control project progress
* How to plan and record the meeting
* How to allocate the tasks for each phase of project

# Recommendations for Future Projects

* Implement more secure file transfer mechanism
* Include SQL server latest version (SQL Server 2014 & SQL Server 2016)
* Include more option to check in SQL Server database.
* Include option to check implementation for disaster recovery scenario.