E BOARD

PROJECT SPECIFICATION DOCUMENT

Version – 2.2

Date– 2016/05/22

Team –ELECTRO BLITZ

PROJECT MEMBERS

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1. Preface

The main aim of the project is to develop a basic Internet Whiteboard, which facilitates communication between employees of a consultancy (ConTech) and its customers. It helps them to work together, despite being far away. This is revised version of the project specification document (version-2.2).

In the remainder of the document, Section 3 describes the customer business and current operational environment. Section 4 describes how the customer wants the problems and needs of his system to be addressed. Section 5 contains the limitations of the project. Section 6 deals with the time plan of the entire project. Section 7 describes the breakdown of the entire project into smaller units and allocation of these units to the members. Section 8 describes the configuration management of the project. Section 9 deals with the progress tracking through ProjectLibre. Section 10 deals with the quality control, to avoid dissatisfaction of the customer. Section 11 describes the risk management. Section 12 deals with the system release plan, which explains about testing, packaging and documentation of the project.

1.1 LOG MODIFICATIONS :

Release version 2.2 on 2016/05/22

- Made modifications to all the sections in project specification sheet version 2.1

Release version 2.1 on 2016/04/24

- Added modifications to limitations (section 5), expanded WBS, allotted work division to each member of the team (section 6)
- Made changes to configuration management (section 8), progress tracking (section 9), Quality control (section 10).
- Made changes to risk management (section 11), system release plan (section 12).
- Added references to section 13.

Release version 1.0 on 2016/04/17

- Initial release

2. Glossary and Abbreviations

API	Application Programming Interface
ConTech	Consulting firm (Customer)
DB	Data Base
Git	Version management system
Gitlab	Web based repository management
GUI	Graphical User interface
MySQL	Open-source relational database management system
ProjectLibre	Project management software system
Python	Programming language
PDF	Portable Document Format (File format)
RESTful	Representational State Transfer FULL (Software architectural style)
RT	Real time
WBS	Work Breakdown Structure
Zip	Archive file format

3. Background

ConTech is a consulting firm, which has expanded internationally and want to keep its costs down. They want to provide remote consulting services to their customers. They have requested for an application to facilitate this service. Our product aims to address their needs by creating an internet whiteboard which allows multiple users to communicate and express their ideas in a better way on a common platform.

4. Proposed Solution

The solution proposed is an Internet whiteboard that makes use of an online database with security features.

- When communication between customers and consultants is needed, the employee creates and configures an account for each customer participating and starts the session.
- Once the account is created, an email is sent to the customers with their account credentials. These accounts are maintained in an online database.
- One of the participants will be a moderator, who can lock access to sheets and undo modifications. Each modification done on a sheet is saved in a list stored in the Database. It consists of an index, a timestamp, the name of the user that produced the modification, type and location of the modification.
- An undo operation retrieves the last change from the list. Retrieving the last change is done by redrawing the same shape in white. Undo modifications are saved to a modification list, which cannot be modified by later undo operations.
- When a reload option is chosen by the customer, the whiteboard is cleared and user will move sequentially through the modifications by clicking the mouse. For each click, next modification from the list is added to the whiteboard.

5. Limitation

- No reserved server is being used for the backup of the main server.
- This product can be run only on Windows OS.
- Encryption is provided using encryption framework thus the software will support only encryption features provided by the framework.
- One system is made as a server and all the other users are interfaced to it hence failure of the main server causes the white board to fail.

6. Time Plan

The project is roughly broken down into smaller elements and the WBS is provided in figure 1.0. The individual elements are described briefly with the tentative time of start and completion.

Work Breakdown Structure (WBS):

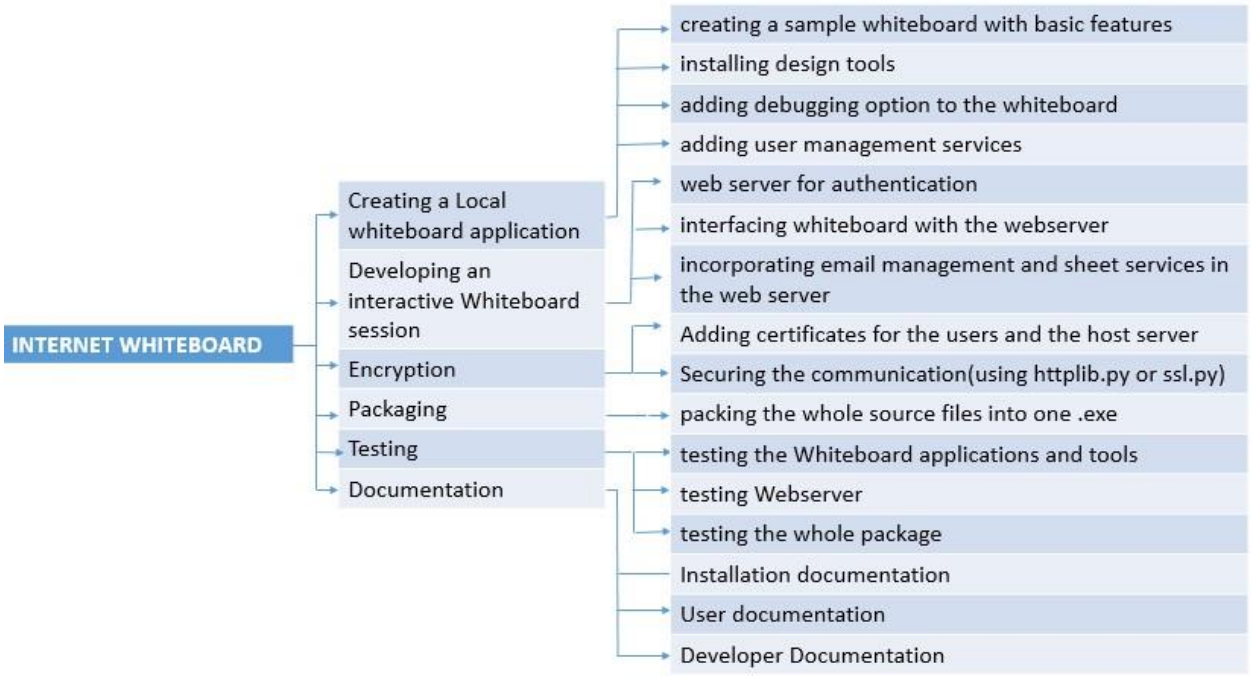

Figure 1.0 Division of WBS elements to team members

- **Creating a Local whiteboard application(2016/04/18– 2016/04/22):**

  A sample whiteboard is created initially with basic features such as pencil, eraser and black color.

- **Developing an interactive Whiteboard session(2016/04/25- 2016/05/2):**

  A web server is created to authenticate the users in the server, to manage admin, employee, users and assigning a moderator in the server. It also saves all the modification data with a timestamp and name of the user who is responsible for the modification.

- **Encryption(2016/04/25– 2016/05/2):**

Encryption involves implementing the encryption models and certification for secured whiteboard communication.

- **Packaging(2016/05/3 – 2016/05/19):**

  Combining libraries, modules etc into one executable file. This executable file is compressed with readme.txt with information regarding installation.

- **Testing (2016/04/27 – 2016/04/29):**

Testing involves running the tests to ensure the operation of whiteboard, web server, interface

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- **Documentation (2016/04/15 – 2016/05/18):**

  Documents for installing the application, for the customer to use the application and developer documentation.

- **Milestones and Tollgates:**

Milestones:

- M1: Delivering initial project specification. **(2016/04/17)**
- M2: Software Requirements Specifications (SRS). **(2016/04/24)**
- Creation of a basic working Whiteboard with limited users **(2016/04/25).**
- M3: Delivering design document. **(2016/05/01)**
- M4: Delivering test plan. **(2016/05/08).**
- M5: Delivering beta Eboard. **(2016/05/15)**
- M6: Releasing final product. **(2016/05/22)**

Tollgate:

- M1: Delivering initial project specification. **(2016/04/17)**
- M2: Software Requirements Specifications (SRS). **(2016/04/24)**
- M3: Delivering design document. **(2016/05/01)**
- M4: Delivering test plan. **(2016/05/08)**
- Requesting feedback after release of first version. **(2016/05/10).**
- M5: Delivering beta Eboard. **(2016/05/15)**
- M6: Releasing final product. **(2016/05/22)**

7. Project Organization

The entire Internet Whiteboard project is broadly divided into 6 WBS elements. Each WBS element is further divided making a total of 16 WBS elements. The team constitutes of 11 members and so multiple items are allocated to each member. Each member can work on any part of the project. However, each person is made responsible for a particular item in the WBS. Thus they are given the rights to structure and methodology of their respective tasks.

The allocation of responsibilities of the tasks is given to members as follows:

1. **Creating a local whiteboard application:** This WBS element is further split into four elements and thus it is made the responsibility of two members.

2. **Developing an interactive whiteboard session:** Since this section requires more time and resources, each sub-element is given to one member.

3. **Encryption:** Addition of encryption facilities involves certification and encryption of communication and thus, two members are assigned this task.

4. **Packaging:** It involves the packaging of the whole application and modules into one package, this is a relatively simple task and thus is given to one person.

5. **Testing:** Since testing is meant to be extensive and thorough, server and whiteboard are tested by one person each and finally after the creation of the final whiteboard, the whole package is tested by the rest of the teams.

6. **Documentation:** Documentation task is given to only two people, who will look after the user, installation and developer documentation, this way all documentation is consistent.

WBS ELEMENT	***ASSIGNED MEMBER***
1. User documentation	Shiva Sai
2. Installation documentation	Shiva Sai
3. Developer documentation	Robin Philip Joseph
4. Creating Sample Whiteboard	Shruti Adidamu
5. Installing Design Tools	Shanmukha Sai
6. Adding Debugging option	Rohith Reddy
7. Adding User Management Services	Robin Philip Joseph

8. Web Server for Authentication	Potluri Preethika Choudary
9. Interfacing Whiteboard with webserver	Rajashekar Reddy Ramidi
10. Incorporating email management and sheet services in server	Sindhu Vasireddy
11. Adding Certificates service	Dharani Nimmagadda
12. Securing communication	Kuna Vignesh
13. Packaging	Shanmukha Sai
14. Testing Whiteboard	Divya Kondaveeti
15. Testing webserver	Rohith Reddy
16. Testing whole package	Sindhu Vasireddy Rajashekar Reddy Ramidi Dharani Nimmagadda Divya Kondaveeti Potluri Preethika Kuna Vignesh Shruti Adidamu

Table1.0 Allocation of WBS items to team members

Upon completion of the designated tasks the users need to look up the ProjectLibre timeline and discuss with the member responsible about the tasks available.

The software process model decided upon is the spiral model which is very agile and flexible, thus suitable for this project. We begin with the creation of a sample whiteboard with basic drawing tools and with every stage of development we add features on top of the sample whiteboard. As the spiral extends, newer features are added and tested and finally the whole system is created and tested.

8. Configuration Management

Version Management:

- Git is used for Version Management
- Gitlab is the software used for progress tracking of each member of the group.
- It does the job efficiently, every member of the team has access to all files of the project being done.
- In the process of progress, whenever a developer makes any changes to the board, it will be updated to Gitlab.
- During documentation, the contribution of each member of the group and changes are updated to a Gitlab repository.
- Codes of the developers of the group members are committed to the Gitlab repository responsible for coding**.**

System Building:

- In this stage, a final system is built by combining the system components with the library functions, configuration files.
- We may use development tools such as compilers, source code editors etc. for this process of system building.
- We use py2exe for building our system.

Release Management:

- We are going to maintain a full documentation of our software releases on a time to time basis as a backup along with specific versions of the source codes components so that we'll be able re-create exactly the release version, in case needed, in the future.
- As mentioned in the limitations, this product is only for customers with a windows background. We will run checks to make sure that our product is compatible with all versions of windows.
- We are also going to keep a record of the libraries, compiler versions and other tools that we employ in building our software.

9. Progress Tracking

- To ensure on-time delivery of the product we have set up a time line for tracking the stages through the development using ProjectLibre to make sure that our product is ready within the stipulated time.

- Each member is required to lookup the time plan and communicate with the team members responsible for the tasks.
- Meetings are scheduled twice a week to track progress of each member.

10. Quality Control

- Testing phase, where we weigh our product against all the standards available in the market to ensure that the expectations of the customer are met.
- We will test chunks of code separately and then put them together and will test again.
- The software developed is tested in different versions of windows such that the user do not face problems.
- Authentication, encryption features make the E-Board more reliable.
- Different versions of the software are released (alpha, beta) which help in fixing the bugs and delivering an error free final product to the user.
- Standard procedures and functions are being used such as RESTful APIs, standard python libraries.
- Encryption is done for protection against potential hackers.
- Customer feedback helps to address the problems faced by them, and can be resolved.

11. Risk Management

STAGE	RISK	PROBABILITY	IMPACT	STRATEGY
1. Sample whiteboard creation	More members may involve in the same work and there may not be scope for concentrating on other tasks simultaneously	low	Low	Reorganize the team
2. Setting up server and database	Database used in the system cannot function as required.	medium	catastrophic	Investigate the possibility of using a better database.

3. Setting up server	Users connected to a compromised server could place themselves at risk of having their own computers hacked.	medium	catastrophic	Investigate the possibility of using a standard server.
4.Interfacing whiteboard with server	Communication may be affected due to improper interfacing	high	serious	Code should be checked again
5. Installing features	May run beyond the deadline for doing the project.	low	Low	Assign more team members.
6. Encryption and Certification	Not selecting the suitable and standard libraries may fail to give the required secure communication	medium	catastrophic	Investigate the standard libraries and work more for the better encryption features
7. Testing	Large number of tests may be difficult to implement manually.	high	serious	So an automated alternative must be sought after
8. Documentation	May run out of the deadline	low	Low	Reorganize the team so that there is more overlap of work and can be done in time.

Table 2.0 Strategy to manage risks in project

12. System Release Plan

The tentative dates for release are:

On 2016/05/06 Beta version will be released.
On 2016/05/22 Final product will be delivered.

12.1 Testing Plan

The testing will be done with every stage of progress.

STAGE	TESTING	REASON	TIME
Authentication of user	Web server created for user authentication	To ensure that the authorized users use the whiteboard	2016/04/27
Basic White Board creation	Whether the drawing and text made on the white board are stored in the database	To make the white board flexible for the user to make required changes.	2016/04/27
Communication between white board and server	The interface between white board and server	To ensure that the changes made in the white board are stored in the server for future use	2016/04/27
Starting the white board session	The working of white board session	To communicate the information	2016/04/28
Adding Functionality	The functionality of additional features	To provide proper tools for consulting	2016/04/28
Debugging the errors occurred during the process of whiteboard functioning	The debugging process	For proper functioning of the white board	2016/04/29

Executing the software as a whole	The individual modules and the software as a whole	To ensure that there are no problems in the whole software	2016/04/29
Packaging the software	The whole software after packaging	To ensure that there are no issues with the software after packaging	2016/04/29 2016/04/29

Table 3.0 Strategy for testing

12.2 Packaging Plan

We are delivering the product as a zip archive which binds the application source codes as an executable file, readme.txt, changes.txt. The readme.txt explains the customer about how to setup and use the product. The changes.txt mentions the changes in the present version in comparison with the previous versions. We are planning to start the packaging process on 2016/05/02 and finish it on 2016/05/03.

12.3 Documentation Plan

Documentation has started from 2016/04/15 and is expected to end by 2016/05/06. It consists of following divisions:

12.3.1 Installation Documentation

Installation documents are provided in the PDF format. Which consists of details about the installation, configuration and setup files required for setting up the Internet Whiteboard application. Documentation work starts from 2016/04/25 and expecting it to end by 2016/05/06.

12.3.2 User Documentation

User documents are provided in the PDF format. This document describes completely about how users can use the Whiteboard application, what features does it contain, some restoration methods to overcome the problems if they have occurred. Documentation work starts from 2016/04/15 and expected to end by 2016/05/06.

12.3.3 Developer Documentation

Developer documents are provided in the PDF format. This document tells about APIs which help developers to interact with functions. It includes source code organization, data format used when communicating with the system, DB table(s) format. It tells about the functionality of the application to users. It provides the details of debugging facilities. Documentation work starts from 2016/04/27 and expecting it to end by 2016/05/06.

13. References

[1] Scott Chacon and Ben Straub, Pro Git, 2nd Edition, May 2014. [Online]. Available: https://gitscm.com/book/en/v2

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[3] Thomas Heller, Jimmy Retzlaff and Mark Hammond, Py2exe documentation. [Online]. Available: http://www.py2exe.org/index.cgi/FrontPage