Digitized Engineering Notebook

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Abstract

The web application deals with two levels of users where one would be the admin and the other would be general user. The admin access will be able to create projects, modify them, add general users to the projects and create a list of actions that must be performed by the general user. The general users will be able to create a log of activities being made by them for the project they are added and perform various actions such as log the list of actions being performed by the team members, export the actions, sort them and others. Each user in a team will be able to view the data related to the actions being performed only by the fellow team mates but, whereas the admin will be able to view the actions performed by the general users creating a role based view options for the users.

Additionally, the users will be able upload the files such as images, text files and others and these files will be shared among the team members. On the other hand, a search option allows the users to search for the users and obtain their details, actions being made by them and others. The calendar of events allows the users to take sneak peak at the list of actions that are assigned to the user and need to be completed on a given date.
# Table of Contents

1. Project Description  
1.1. Competitive Information  
1.2. Relationships to other projects  
1.3. Assumptions and Dependencies  
1.4. Future Enhancements  
2. Technical Description  
2.1. Project Architecture  
2.2. Project Information Flow  
2.2.1. Administrator  
2.3. Interaction with other Applications  
2.4. Application Capabilities  
3. Project Requirements  
3.1. Identification of Requirements  
3.2. Operations and Administrations  
3.3. Security and Fraud Prevention  
3.4. Release and Transition plan  
4. Project Design Description  
4.1. Data Flow  
4.1.1. Adding Projects  
4.1.2. Adding Teams  
4.1.3. Adding Logs  
4.1.4. Adding events  
4.2. Database Design  
5. Project Internal and External Interfaces  
6. Project Design Units  
6.1. General User  
6.2. Admin  
7. Open Issues  
8. References
1. Project Description

Digitized Engineering Notebook is a web based application where the users will be able update the activity details that they were performing at the application. The users will be able sign up and login into the application where based on the level of authorization the user has, the user will be able to view the list of actions that can be performed by him. Apart from this the user will be able to create projects, teams, assign new user to the teams and view the actions that are being performed by the user and many other activities. The users will be able to upload files with the status updates to the projects by which the other users will be able to review the documents at the later stages. The users will have an option to change the profiled picture of the user too.

1.1. Competitive Information

The application is similar to the other projects available in the market can be considered as a sample project or an imitation to the other projects available in the market. The user-friendly design and mobile friendly nature of the application will be an advancement when compared with the applications that are available in the market from a long time.

1.2. Relationships to other projects

As mentioned earlier the mobile friendly nature and more user-friendly nature of the web application is a kind of advancement that can be expected from this application. In the current market, there are many other applications where the users will be able to have access to the similar features that can be seen in this application and additionally the more user-friendly nature of the application is a kind of advancement in here.

1.3. Assumptions and Dependencies

Any project is incomplete without any assumptions and dependencies. The below are couple of assumption and dependencies that have been during the development of project and creation a list of requirements.

- To complete the project in time which depends on the availability of the resources.
- To meet all the requirements specified which depends on the amount of time that has been in analyzing the requirements and prioritizing them.

1.4. Future Enhancements

The web application is user friendly but some of the functionalities such as tracking the projects which are not active and other core functionalities will be incorporated in the application. The user will be able to register himself as a regular user only, in the future a user who registers with a specified link or authorized link will be able to register himself as an admin. The application does not have any logic to track the activities of the user which can be used in making the accountability for the user can be added in the future enhancements.

2. Technical Description

Visual Studio 2015 and MS SQL Server Management Studio is used to develop the web application where C#.Net is used in front end design. Apart from this other scripting languages and markup languages have been used to create a more user friendly design.
2.1. **Project Architecture**

As the below diagram depicts the application is developed using three-tier architecture.

![Project Architecture Diagram]

2.2. **Project Information Flow**

In the current project there exists two levels of users which are as follows:

- Admin
- Regular User

2.2.1. **Administrator**

The admin is responsible for the creation of projects, teams and events. The admin has the control over all the actions that can be done in the web application. The below diagram depicts the list of actions that can be performed by the admin and the user where the actions defined in red color depicts the actions that can be performed by the admin.
2.3. Interaction with other Applications

As the primary functionality of the application is to keep a track on the status of projects, create new teams to work on the projects. Apart from this the application does not need any information from any other resources where all the data that is needed by the application will be gathered during the creation of the new item either it might be a user or an item.

2.4. Application Capabilities

The below are the few actions that can be performed by the user if the user has the highest level of access.

- Creation of projects
- View the list of active projects
- Create the teams to work on the projects
- Assign team mates to the projects
- Create the entries, modify them
- Upload files
- Create events
- View the list of events
• View the user profile
• Deactivate the user
• Search for events or projects
• Lock the screen

3. **Project Requirements**

The requirements for the current project are specified and a list of all the requirement has been made.

3.1. **Identification of Requirements**

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3.2. Operations and Administrations

As specified earlier the primary intention of the web application is to keep a track of the project status and other vital information about the projects and the actions also would deal with the similar tasks like creation of projects, teams, events and others.

3.3. Security and Fraud Prevention

When it comes to the security the sign in page where only authorized users will be able to access the application and by which authenticity of the application exists.

3.4. Release and Transition plan

As present the application is not online and can be accessed only within the local system. In future the application will be made online by which everyone will be able to access the application irrespective of the geological location.

4. Project Design Description

The project design description provides information about the list of actions that can be performed by the user which are as follows.

4.1. Data Flow

4.1.1. Adding Projects

In here the user will be able to create the projects by which the teams which are assigned to the projects will be able to create entry logs which in turn reflect the status of the project.

4.1.2. Adding Teams

In here the user will be able to create the teams, i.e. a group of users will be working together on a given project. This will help in keeping track on the status of the projects.

4.1.3. Adding Logs

In here all the users will be able to create logs which contain information about the status of the projects and the files that have been uploaded in relation to them.

4.1.4. Adding events

In here a list of events can be created by the admin where all the users get the notification about the event and attend accordingly.
4.2. Database Design

The below is the database design diagram that contains the list of all the tables that have been used in the web application and the relationships that are present between them.
5. **Project Internal and External Interfaces**

When we consider the web application much interaction with the third-party servers or applications is not seen. The application collects the data about the user and uses the same information in the later stages to process several actions. Therefore, much interaction is not seen with the

6. **Project Design Units**

The project is mainly divided into two modules which are as follows.

- General User
- Admin

6.1. **General User**

The below are the list of activities that can be performed by the user

- Create entry logs
- Upload files
- View the team profiles
- Edit personal profiles
- Search for several activities.
- View the list of events

6.2. **Admin**

The below are the list of activities that can be performed by the admin.

- Create projects
- Create and assign user to the teams
- Create events
- Activate or deactivate user

7. **Open Issues**

When it comes to the web application the user will not be able to receive any form of confirmation upon creation of projects or teams and there is no active user activity tracking which is of great importance.
8. References
