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**FESIBILITY REPORT**

**Android Application**

**Name: SAFE**

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**1) Task statement:**

The following system is intended for the Software Engineering course instructor. The instructor is supposed to go through and suggest the implementation that needs to be undertaken and approve the feasibility. So basically our customer is our instructor and we are making application according to his needs. We make application which is user friendly and allow user to take control of their home appliances. The application provide user to control the electric appliances and also make secure his home by controlling his door locks through this application.

**2) Preliminary requirements**

**Application Overview**

**Objective**

Will be to give remote access of the home to the user. This will be implemented in his android smart phone; different modules will be spread across the house to perform various tasks such as controlling appliances, lights, air condition.

**Business Objectives**

The main objective of the project is to reduce the electricity usage of the home making it more economical for the user and better for the environment. This will also increase security by providing means to monitor the home using cameras and other sensors. In the case of insurances the company will be more confident in analyzing the property and the process will be smother.

**Current Business Process and Rules**

In previous time the person cannot handle his home appliances from some far distance and also cannot secure his door control by introducing this application the person can now able to handle the security and appliances control. The client use this application on smart phone and can perform his desire action in a specific range of his house. He should first login into the application and provide his basic detail like name, address and phone number etc then he will be verify from our official website. Then he will able to use this application.

**User roles and responsibilities**

Administrator role: The administrator will be able to set permissions, lock and unlock, monitor, and time the various modules.

**Interactions with other systems**

The system will interact with the main power supply of the home. This will also communicate over the internet to services that maybe implemented in the future.

**Production rollout considerations**

The android app is supposed to be developed in a phased manner, one feature at a time. The user can start using the app right away since the app is will be made very user friendly

**Functional Requirements**

**Statement of Functionality**

This software system will be flexible and sustainable with a user interface for handling, controlling and monitoring his home. Users need to be able to view a log of all the activities happening in the house. The software system may have different accounts for different types of people, for example guests or children. The system may be made accessible from various devices so that anyone in the house can have control of the home. The priorities will be set by the admin user. At any time no more than five user will be accessing the system for security reasons. The system should be able to produce a range of reports specific to user needs. Automatic backups of information from the central data repository should be enabled as well as password protected user access.

**Security and User Capabilities**

The software system will support two types of users. In order to access the system all the users will need to login with a password. At the administrative login level, the user will be given additional permissions such as adding or changing ser levels and user types. A limited control will be given to the non-admin users, the limit will be set by the admin. Logs and other private info will only be visible to admin user.

**Reporting**

The reports generated will be the logs of the activities happening in the house, the footage recorded by the cameras and any notifications that might be given out.

**Non-functional requirements**

The software system will be installed and run on android devices (either phone or tablet) and the system will be tested out on various android devices. The system needs to be functional the user needs to access it. The criteria for success of the system would be measured by the flexibility and sustainability of the system. The functionality and ability of the system to meet all requirements (i.e. effectiveness of the design of the user interface, various levels of user access, etc.) would be critical for success as well. Ease of use and efficiency would be adequate measures of performance; no training is required for a user to use this app he can install and start using it right away considering he has the system installed.

**Optional Features**

The app may be connected to the cloud for it to create backups of logs and camera footages.

**Usability**

Usability issues such as robustness, reliability and smoothness is critical for this app since this will be the key for the user to control his home.

**Scope**

The scope of our system includes complete control of the user’s home accessories and appliances. Create activity logs and record security footage.

**3) Process to be followed**

For this project the team has decide to follow an approach which is extreme programming. We decided this approach because our team members are in pairs and they perform programming in pairs so it is feasible for us according to our group environment. In this Model the interaction and coordination between the team members are very important. This model allows us to iteratively do any step which we want.

**Release plan**

We will release our product by 5th May which requires 3 months, using strictly the methods given by the extreme programming model.

**Iteration plan**

If we want to add new feature we will need more time for this so our project release date may be extended in that case.

**Acceptance test**

We test the ideas on different platform in order to check its rightness.

**Stand up meetings**

We conduct meetings which are of short duration in which we discuss the ideas and planning of our project

**Pair negotiation**

Each pair negotiates with each other and suggests or defends their ideas.

**Unit testing**

We test each unit manually according to our project.

**Pair programming**

After all these steps our main step starts which is programming in which we starts programming parallel in different pairs and each pair is assigned task with some deadline and they have to submit their task within given deadline.

**Code**

Finally we come with up a final code

**4) SUGGESTED DELIVERABLES**

To satisfy the instructor’s need for a digital and (semi-) automated solution to their current system, the following set of work-products will be delivered to the instructor:

**(1) Periodic Status Reports**

Throughout the software development process, periodic reports will be written and presented to the instructor to maintain process visibility and enhance the team’s responsiveness to the instructor’s needs. The team understands that the instructor will wish to comment and respond to the development progress. In turn, the team will strive to continually adjust and target processes and progress to the instructor’s needs. Periodic status reports will detail the feasibility of the project, its exact requirements, its design, and ultimately, its final form and implementation. These will be written documents that are presented to the instructor and any other individuals the instructor identifies.

**(2) Periodic Presentations**

Accompanying requirements, design, and final reports will be periodic presentations where the team will demonstrate different aspects of the software system in development. For example, the user interface may dominate particular presentations. These presentations are designed to give the instructor maximum understanding of how their needs are being addressed in the actual product. Feedback will be critical to these presentations, so that the team may use the instructor’s comments to understand completely how the system meets the instructor’s needs.

**(3) Computerized, Web-based System for Reference Statistics**

This system will be the core deliverable for the instructor. It will consist of a coded, android app. The instructor has identified four major functionalities that this system will need to deliver:

**(4) Good Faith Requirements Agreement**

After the project requirements have been discussed and reviewed with the instructor, a requirements agreement will be presented to the instructor to clarify exactly what the project intends to accomplish. The agreement will explicitly spell out which features and objectives the team intends to deliver.

**(5) Documentation for Use and Mechanics**

The instructor will be provided documentation both explaining how to use our system and describing its underlying mechanics. The instructor has expressed interest in gaining familiarity with the system, and the documentation will be useful for reference needs.

**5) TECHNICAL FEASIBILITY**

The feasibility of the technical requirements can be judged by identifying and outlining *at least one* technical

Method that will satisfy the client’s needs. Since any technical solution must embody the client’s requirements,

it is useful to identify them:

**Requirements:**

***\*Data sorting by different fields (time, date, etc.):***

The requirements gather from user in a very effective manner and sort the requirement by considering the time and date aspects. Means which requirement achieved first from user’s point of view. Each digital “hash-mark” will need to include different fields of information since it will be desirable to be able to sort and organize the data in different ways depending on the user’s preference.

***\*Centralized data repository***

The varies kind of data information are stored in a database, the centralized data repository to manage all of the databases of the application. Since many locations will be operating at once and more locations may be added, a centralized data repository is needed to coordinate all of the information.

***\*Multiple levels of access to the system:***

The application is not one sided this means that the app provide multiple level of access for those users which are interesting to user our app. For example if here we consider only one house its also needs a multiple access to the system because every member of house have a equal level of user’s preference which are using our app.

***\*Retroactive editing of input data***

Data may need to be inputted much later, especially if the library is busy, or it will need to be corrected or deleted.

***\* Multiple, simultaneous users and input***

Many reference assistants may be working simultaneously and everyone will need a way to enter their data without waiting for someone else to finish on another computer.

***\*Multiple, remote access points***

The reference locations will be spread across multiple libraries and desks. All these locations must be able to access and use the system.

***\*Administrative interface***

In the future, an administrator will be needed to add new access levels, change categorical descriptions, or make certain modifications to the central data repository or reporting system.

*\** ***Automatic report generation***

The new system will generate reports as one of the main goals of switching to an automated, computerized system.

***\*Security***

Security needs to be maintained to ensure the integrity of the data, although no malicious or advantageous editing is expected. Password-protection and a login system (based on access-level or user-type) are sufficient.

a central server contains a central data repository of all of the reference statistics that need to be tracked. It also contains information about the potential types of users and the reference locations, categories, etc. The central server itself contains backups of the central data repository.

**6) VISIBILITY**

The team will focus on the visibility of the project and the process through which it will be developed. Process will ensure the fact that client’s requirements are understood clearly and the project is developed accordingly. Following techniques are used to ensure it.

**Communication**

Regular meetings will be conducted with the user in order to ensure that the requirements are explained as clearly as possible and they are comprehended clearly as well.

**Intermediate deliverables and presentation**

Deliverables and presentations will be given on the regular interval of a week in order to ensure the visibility.

**7) RISK ANALYSIS**

Our entire project is not evidently risk free. Three major risk categories are identified as follows.

**TIME RISK**

As this is a course project so it must be completed within one semester. The extension will not be possible. This will introduce a risk that our project will not be completed in the given time frame. It will further induce our risk of delayed implementations and functionalities.

**RESOURCE RISK**

As our working team is comprised of four members, so there is a risk of lack of the technical resources like sufficient number of laptops. Furthermore, the platform which we are working on is android so the tool like android studio must run on the machine. This will induce a risk of insufficient specifications of the machine e.g. it needs minimum of 2 GB RAM.

**FUNCTIONALITY RISKS**

Functionality risk deals with how a system works. It may be possible that the application we will develop will not be user friendly or interactive or it may not be liked by the end user.

The biggest risk in that case will be that we will develop an application not desired by the user. This is possible that the functionalities which have been promised are not delivered wholly.

**RISK MANAGEMENT/MINIMIZATION**

The risk mentioned above will be dealt accordingly and effectively. A team member will be associated with the task of risk management. All the risk are more or less associated with the ineffective commutation. So the basic solution is to communicate with the user iteratively.

**8) CONCLUSION**

From the results of the feasibility study, the team finds that the Reference Statistics for our project is feasible in terms of technicality, skill of team members, and time. Given the time constraint of one semester, the team believes the scope of the project is manageable and that the client’s requirements can be satisfactorily fulfilled upon system completion. The team members also possess the adequate skills to implement the system and are familiar with hardware and software that may be used in this project. The conclusion of the feasibility

Report is to go ahead with this software development project.

**Gantt Chart**



