King Fahd University of Petroleum and Minerals

College of Computer Sciences and Engineering CCSE
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Obesity Group Clinic

Team B

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Document Revision History

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25th February 2011	1.0	Initial Proposal	Shaeq
4th March 2011	1.1	Final Proposal	Shaeq
1st June 2011	1.2	Revised Proposal for final submission	Shaeq

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1. Project Objectives

The aim of this project is to develop a web-based system to enhance treatment process of the Obesity Group Clinic *[OGC]* patients' in Aramco Hospital. The system should assist the *OGC* Team by maintaining an intelligent collaborative bank of ideas, and to help monitor the progress of the treatment and relate it to the behaviors of the patients as well as the assigned activity.

2. The need of the project

Currently the process of tracking the progress and implementing weight loss plan for patients in ARAMCO's *OGC* is done manually. As a result, Patients have to come to the clinic to create a new profile if he or she is not registered in the clinic. In addition, the health team will have to fill different forms when they follow up the patients to track the progress. Tracking the progress of patients may go on over extended period of time.

The *OGC* has a need for a new system that can make the long process systematic and easier for patients and the health team. Also, the health team will be able to track their patients and contact them for timely follow ups. In short, the new system is needed to focus more on achieving patients' goals rather than wasting time and effort spent in the lengthy process.

3. Expected Outputs

This section describes the artifacts that are going to be delivered during the development life cycle of the project. Also it describes the outputs that the system is going to produce for to its users.

1. **Software Project Management Plan**

   This document is the roadmap through the whole project. It guides the development team by describing what tasks should be accomplished, what are the durations and deadlines, who is responsible for accomplishing these tasks, and what are the dependencies between these tasks.

2. **Vision Document**

   This document sets the objectives and goals of the system. It assures that the development team is working to achieve a unified and agreed on objectives and goals. It provides a description of the most important components of the application, for example it has a user description (user profiling, user environment…), product overview (system capabilities, assumptions and dependencies…) and many others.

3. **Software Requirement Specification**

   This document describes the behavior of the system by modeling it into a set of interacting use cases that are linked to certain users, the language used is the Unified Modeling Language [UML]. There are two types of functionalities that the document describes:

   a) Functional requirements are the functions of the system (e.g. add patients, modify a patient).

   b) Non-functional requirements are certain behaviors or constraints that provide the opportunity to assess and measure the system (e.g. performance, accuracy…).

4. Software Design Description

This document presents the architecture of the system and how are the components of the system are linked together to form the overall system. It is going to guide the developers through the development process by emphasizing how to create the components that make the system.

5. Software Test Document

This document describes the testing process that is going to be applied. It defines the test plan which emphasizes what is going to be tested, who is going to test, how the specified components will be tested and how long will the test process take. The document also consists of the test cases which will help determine the results of the tests that are applied (either pass or fail).

6. User Manual

This document will guide the user on how to use the system by giving a detailed description on how to use the functionalities.

7. Installation Manual

This document will define the requirements that must be achieved to fully deploy the system. These requirements and configurations are going to be described in a step-by-step procedure.

8. Presentations

The development team will arrange sessions for presentations to give the sponsor and the supervisor what is the state and the progress of the project.

9. User Training

The development team will provide training sessions (if needed) to the users of the system to make sure that the users will be able to use the system correctly.

10. Deployment Package

The deployment package contains the source codes which is the actual programs that consists of the algorithms that are used to manage and achieve the functionalities required.

Table 1 *– Expected outputs for the doctor*

Output	Description	Inputs [subject to various changes until implementation phase]
1. Send reminders via SMS/emails	The system is expected to send reminders via SMS/emails to patient reminding them to follow up their scores on the system.	• Daily/weekly score for each weight loss activity.
2. Patient progress reports.	The system is expected to produce reports for patients so that the health team may monitor their progress.	• Set of goals to achieve. • Initial BMI. • Initial weight. • New weight. • New BMI.
3. Patient satisfaction	On the basis of progress made by patients, their motivation and approval of weight loss activities will be recorded	The patient should complete certain surveys provided to them through the system.

4. Key features of the Obesity Group Clinic Project

1. The *OGC* health team and patients are users who will be interacting with the system.

2. The patient can add weight loss goals and use the system to enter their timely scores to assess their progress for weight loss. The *OGC* health team can view these selections made by patients and make appropriate changes necessary.

3. "The Bank of Ideas" is created by the *OGC* health team with activities for weight loss called "goals".

4. The patients start at the clinic in groups and their accounts are created by the *OGC* health team. The patients can then login to the system using this account and get started by appointing goals for themselves and following up on their progress.

5. The *OGC* health team and patients will receive timely reminders of when the filling in of progress sheets is due.

6. The OGC team will be able to deactivate the account of a patient in case a patient chooses to drop out of the clinic.

7. The system should be able to generate reports according to different categories and parameters. Some possible reports that can be generated are –

- On progress of individual patients
- Dropout rate and contributing factors
- Most chosen behavior goals
- Most achievable goals
- Most successful goals
- Number of chosen goals and relation to outcome
- Dietary vs. PA goals and outcome
- Emotional rating and outcome
- Emotional rating and number of chosen goals
- Other types of reports maybe added upon request from sponsor

5. Team members capabilities

Aziz

Software Engineering	Capability
Requirements	- Eliciting requirements. - Use case modeling. - Use case description. - Activity diagrams.
Design	- Robustness analysis diagrams. - Class diagrams. - Sequence Diagrams. - Applying some design patterns.
Testing	- Creating test plans. - Creating test cases. - Mutation.
Development	Programming: - Java.
	Web development: - HTML. - CSS. - JavaScript. - PHP.

Saeed

- Software Requirements in general (specially Requirements Elicitation)
- Software Design tools and techniques
- Software testing (Test case generation and mutation testing)
- Web Development in general (specially the GUI).
- Programming languages (Java, C, and PHP).
- Networking.
- Documentation.
- Database Management (will improve after ICS 324).
- AutoIt scripting language (good background)
- Video and Audio editing (CyberLink PowerDirector software).
- Designing simple Adobe Flash animations.
- Flexible with learning new languages, tool... etc.

Sameer

- Software Requirements elicitation.
- UML Modeling.
- Software testing (Test case generation)
- Web Development (ASP.NET).
- Programming languages (Java, C#).
- Scripting language (specially JavaScript)
- Fundamental Networking.
- Documentation.
- Database Management (will improve after ICS 324).

Yasir

Software Engineering Aspects:

- Requirements analysis.
- Class design and design patterns.
- Implementation.
- Deployment and maintenance.
- Experience in Waterfall model and Spiral model.
- Experience in Web Development.
- Experience in UML and UML tools.

Programming and Scripting Languages:

Java, Jscript, JavaScript, XML, HTML, XHTML, CSS, ASP, ASP .NET

Rakan

- Good experience in requirement engineering.
- Good experience in system modeling and database modeling.
- Good experience in user interface design.
- Good experience in developing web applications.
- Good knowledge of programing languages such as Java, PHP, SQL, CSS.

Shaeq

- Requirements analysis and interviewing, brainstorming techniques.
- Using UML to document requirements using the tool Enterprise Architect.
- System design using Object Oriented Concepts and design patterns.
- Making high quality user interface designs using tools like Photoshop [prototypes]
- Programming in Java using Netbeans.
- Designing, running the developed test cases and recording results.

6. Project Impact

Impact on individuals:

This system will help the *OGC* team to monitor their patients' performance. Periodic reports, progress reports and the upgrading of an activity are characteristics of performance measures. Also, the system will contain a full profile of every patient with the corresponding attributes. Age, BMI, weight, and number of medicines are some of these attributes. New doctors won't have any problems with their new patients, as each profile will be counted as a patient's file. The system will generate individual patient schedules. Emails notification will help in reminding the patients and *OGC* team to complete scoring their activities online in order to assess their progress.

Impact on organization:

The productivity will surely be increased after the usage of the system. Being able to do follow-ups online instead of visiting the clinic again will save patients time and encourages them to continue on the program. Since the number of the appointments will be decreased, doctors will have more time to watch over their patients. The OGC team will concentrate on adding more ideas to the Bank of Ideas and be more creative in upgrading the old ones. All of these factors will definitely have their impacts on improving the productivity.

Impact on society:

The system will have impact on the Aramco's society. Psychologically, when a patient lives within Aramco society and this system is operating and serving, he will be motivated to continue his treatment program since the process are automated for him. That will result in increasing patient satisfaction, which will affect the reputation of the clinic. Through this system we are helping people avoid obesity related diseases and creating a better future for them.