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Cairo University

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Care Point

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Academic Year 2017-2018

Midyear Documentation of Graduation Project

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Abstract:

One of the main problems in the medical system in Egypt is the lack of coordination between medical organizations, like hospitals, clinics, pharmacies, … etc. That is, the patient looks for some place to get one medical service and that’s it. This problem has led to a shortage in the medical service ***as a whole***.

“Care Point” is a website that provides a set of facilities that aim to mitigate such shortage and improve the medical service level by integrating individual medical services through one powerful system. The project focuses mainly on care-related services, and the following are the main ones:

* A doctor can view the whole medical history of his patient along with medical attachments such as radiology, analysis, … etc. This breaks the boundary between medical organizations and gives the doctor all information he needs to correctly diagnose a patient.
* A citizen can search for any medical service (e.g. ICU – incubator – dialysis room – … etc.) across the system or search for a medicine in surrounding pharmacies. The search can be based on distance, cost, popularity or rate
* A doctor can send prescriptions to pharmacists through the system. Also, the system suggests alternative medicines to the doctor, and ***accepted alternatives*** are shown also to the pharmacist. This creates a channel between doctors and pharmacists.
* A user can mark another user as a friend, parent or sibling. This feature supports two other important services:
* In emergency situation a citizen can send an SOS to the nearest hospitals, his friends and his family.
* When a doctor adds a ***genetic*** disease to the medical history of a citizen, the system sends a warning to his family as they have the same disease.

To accomplish the project, we are using the following tools and technologies:

* **ASP.Net:** the technology we use to develop the website.
* **Microsoft Azure:** we use it to host the database, and we will use it to deploy the website.
* **Gitlab:** we use it to collaborate and share project files.
* **Moqups:** used to make UI blueprints.
* **Microsoft Project:** usedto help us do project management tasks.

In the recent few decades, many reports and articles have been published to draw attention to significant problems in the medical service, either in Egypt or generally in the world.

In 2006, Washington Institute of Medicine (IOM) published a report saying that wrongly read prescriptions cause around 7000 ***yearly*** deaths all over the world.

In 2011, an Egyptian Medical Board Officer said that about 30% of diagnosis in the Private Sector and about 70% in the Public Sector were wrong, with a total of 114 complaints in one year.

In 2017, Hossam Abdel Ghaffar, the spokesman of the Egyptian Ministry of Health, said that there is around 50% of shortage in ICUs in Egypt. This definitely makes it harder for a patient to quickly find a care room.

Those examples and many others are motivating us to do our project hoping it will be a new contribution to the medical system in Egypt.

Work Plan:

The project has seven milestones, the details are in the following table:

|  |  |  |  |
| --- | --- | --- | --- |
| **Task** | **Task Title** | **Description** | **Task Status** |
| 1 | Idea selection | Prioritize candidate ideas and meet our supervisor to discuss them and choose one | Completed |
| 2 | Scope specification | Determine features/ services that will be included in the project scope and prioritize them | Completed |
| 3 | Learning plan | Discover technologies that can help us, decide which technologies we will use and put a plan to learn them in parallel with other tasks | Completed |
| 4 | Similar work analysis | Discover previous projects with similar work, determine the pros and cons for each one and how we can avoid those cons in our project. Then, document the results | Completed |
| 5 | SWOT & PEST analysis | * Determine project strengths, weaknesses, opportunities and threats through SWOT analysis * Determine political, economic, social and technological factors that can affect the project through PEST analysis | Completed |
| **First milestone** | | | |
| 6 | Requirement elicitation | * Determine needed information and prepare questions we need to ask * Schedule meetings with our stakeholders (mainly doctors and pharmacists) to gather needed information * Put simple and opinion-based questions in a survey and publish it in online communities for pharmacists and doctors | Completed |
| 7 | FURPS+ documentation | Formally document the functional and non-functional requirements | Completed |
| **Second milestone** | | | |
| 8 | System diagrams design | Divide system features into groups and ***incrementally*** design the use-case, class, and sequence diagrams | Completed |
| 9 | DB design | Design an ERD diagram and prepare the DB schema | Completed |
| 10 | UI design | - Design a blue print for the solution  - Design a logo | Completed |
| **Third milestone** | | | |
| 11 | Implementation plan | - Divide the whole system into releases  - Put a deadline for each release  - Assign roles to team members (front end, backend, testing, …etc.) | Completed |
| 12 | Midyear documentation | Prepare the midyear GP document | Completed |
| 13 | Design enhancements | Resolve design problems that are discovered later during implementation | In progress |
| 14 | Complete and test release 1 | Release 1 is concerned with:   * Registration and login * Medical history * Patient attachments (radiology, analysis, … etc.) * Patient prescriptions | In progress |
| **Fourth milestone** | | | |
| 15 | Complete and test release 2 | Release 2 is concerned with:   * Profile creation for medical organizations * Enabling medical organizations to edit available services, care units and service work slots * Searching for medical services * Searching for user accounts * Suggesting medicine alternatives to the doctor while writing a prescription | Expected |
| **Fifth milestone** | | | |
| 16 | Complete and test release 3 | Release 3 is concerned with:   * Ability to add friend, parent or sibling user * Prognosis and warning from probable genetic diseases * Asking for rescue by sending SOS signals to nearby hospitals, relatives and friends | Expected |
| **Sixth milestone** | | | |
| 17 | Compete and test Release 4 | Release 4 is concerned with:   * Add pharmacy services (Selling medicines, extracting a receipt, managing inventory) * Searching for medicines and injections * Rating a medical service * Publishing advertisements for top rated services | Expected |
| 18 | Deployment | Deploy the project on MS Azure | Expected |
| 19 | Documentation | Prepare final GP document | Expected |
| **Seventh milestone** | | | |

Gantt Chart:

References:

* Washington Institute of Medicine (IOM) report, 2006 [Internet][Uploaded in January 2017], available from <http://content.time.com/time/health/article/0,8599,1578074,00.html>
* Article by Entisar El-Samany, [Internet][Uploaded in December 2011], available from <https://www.sudaress.com/alintibaha/6247>
* El-Bawaba News report, [Internet][Uploaded in September 2017], available from <http://www.albawabhnews.com/1504049>