E-Sharing: Developing a Web Based Online Donation System
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ABSTRACT

Nowadays there are so many people who are surviving on only one meal per day. Especially in developing countries, it is one of the major problems. On the other hand, there is so much wastage of food every day. Some poor people need clothes and vessels, and children need some books and study kits. Solution to this is that we only need to donate the leftover food to needy people, charities, and our old stuff. For that to happen, we need some sort of platform. This could be any online platform like a website/web application. In Saudi Arabia, there are so many people who are capable of making donations and also there are so many Nongovernmental Organizations (NGOs) which are helping poor and needy people of Saudi Arabia. But to connection gap is not as blur as it should be. There has to be some simple, fast, intuitive and secure way of doing such online donations so that users can donate easily with just a click. The aim of this work is to design and develop a Web Based Online charitable Donation System. Where, the charitable website will collect the charitable donations (such as clothes, toys, school tools) and delivers it to the children who need it. The proposed system will provide voluntary opportunities for those wishing to be volunteer in delivering the donations to the homes of the poor for free. The proposed work was designed and developed using the Unified Modeling Language (UML), SQL Server for implemented the database, and ASP.net and Visual basic programming languages.

Keywords: Charitable donations; Information Systems and Unified Modeling Language.

I. INTRODUCTION

People live in villages and cities based on their occupation and their incomes. People with better income can live better life. However, people who do not have good earnings have difficulties to get their basic needs such as clothes and food [1-8]. limited charity organizations and Governments are trying to support and help them. In Saudi Arabia charity organizations located donation boxes in many places to collect donations, then it became difficult to regularly monitor and collect them, this affected the donation process. The technological revolution will offer a comfortable and fast way to communicate with the charity and donate easily, this will make the process of donation well-organized, efficient, and easy as well [9].

In Saudi Arabia, many people are willing to donate and help poor people. Alber Charity Organization in Al-Ahsa at 2015 stated that physical donations amount is 12,787,060 SR [10]. Actually, there is larger numbers, but large amounts of expected donations are wasted since there is no well-organized and effective way for collecting and distributing them [9].

At present there are number applications to assist the process of donation, such as, “Makkah charity”, Saudi Food Bank “Eta’am” “Alber Charity” and” NemahKeep”.

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According to our visiting and investigations about these organizations, the donators should visit the offices of the charity to donate, while Eta’’am charity you must contact them and send a request earlier before any ceremony to collect excess food. Also, another application NemahKeep, the donator must call the responsible for the donations collection by cell phone and give them the address. In large cities, it is difficult for charity organizations to track all donation boxes and collect them regularly. Recently Dar Alkhair launched smart donation box. The main purpose of the new boxes is to change color of the light from green to red to tell the donor that the box is full [9].

Eta’’am charity organization [11] mainly concentrates on helping people in need by gathering extra food and packing it to distributes it to needy people. The donator should contact the charity and inform them about the food type and the suitable date and time to collect the food. Eta’’am website shows the latest updates, news about the organization, and enables the donors to make donation using their website. Also, Eta’’am have a mobile application. Figure 1 shows the home page of the Eta’’am charity organization.

Figure 1: Eta’’am home page.

NemahKeep [12] helps by collecting unneeded good food from the hotel restaurants and ceremonies then pack it again to distribute it for visitors of Makkah and needy people. The donation process is that the donator should contact the charity and inform them about the food type and the suitable date and time to collect the food NemahKeep employes a Twitter account to display the latest donations news and other donations statistics, also a YouTube channel is used to show some motivational videos to encourage people to donate. NemahKeep utilizes the cellphone to communicate with the donator. Figure 2 shows the home page of NemahKeep.

Figure 2: home page of NemahKeep.

The technological revolution influenced everything [13-90], the new technology will offer a comfortable and easy means to communicate with the charity, that will make the process of donation well-organized, easier and efficient as well. Therefore; Artificial intelligence enters every part of business and marketing, including fundraising for nonprofit organizations, automation of blood donor classification and notification techniques [91, 92].

II. METHODS AND MATERIAL

UML offers a set of tools that are standardized to document the design and analysis of a software system. The toolset of the UML comprises diagrams to enable visualization of the object-oriented system construction [93-99].

1.1 Use Case Diagram

A use case diagram is used to characterize the active behavior of a system. It summarizes the functionality of the system by incorporation of actors, use cases, and their relationships [51, 52, 61, 62, 65, 67, 68, 71, 75, 80, 81, 87, 93-100]. It represents the functions services, and tasks required by the application.
subsystem/system. It shows the high-level system functionality and reports the way the user handles a system. In the proposed system, the actors are the Admin, Client, Donor and Driver. Figure 3 shows the use case diagram for the proposed system.

1.2 Context diagram

The Context Diagram demonstrates the system to be considered as a sole high-level process and then illustrates the relationship of the system with other external entities (external data stores, organizational groups, systems, etc.) [97-99]. Figure 4 represents the context diagram of the proposed system.

1.3 Entity Relationship (ER) Diagram

An Entity Relationship Diagram (ERD) is an overview of data structures. ERD shows the database’s entities (tables) and relations between tables within the database. For better design of the database it is important to have an Entity Relationship Diagram. Figure 5 shows the ER diagram for the proposed system.

1.4 Database Testing and Construction

For implementing the database of the proposed system SQL was utilized. Tables 1, 2 and 3 are example of the created tables.
1.5 Interface Design

Design of the user interface is the front-end view of the application that the user interacts with in order to use the software [97-99]. User can control and manipulate the software and the hardware using the user interface. Nowadays, user interface is almost found at every place where digital technology presents, right from mobile phones, computers, music players, cars, ships and airplanes etc. The figures below are examples of the designed interfaces.

Table 1: Clients table.

<table>
<thead>
<tr>
<th>Username</th>
<th>Email</th>
<th>Password</th>
<th>Mobile</th>
<th>Address</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>hadeel</td>
<td><a href="mailto:li@hotmail.com">li@hotmail.com</a></td>
<td>999</td>
<td>568743290</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>sahar</td>
<td><a href="mailto:ss@hotmail.com">ss@hotmail.com</a></td>
<td>654</td>
<td>564321875</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>ZahrEE</td>
<td><a href="mailto:z@gmail.com">z@gmail.com</a></td>
<td>543</td>
<td>567349832</td>
<td>26</td>
<td></td>
</tr>
</tbody>
</table>

Table 2: Donors table.

<table>
<thead>
<tr>
<th>Username</th>
<th>Email</th>
<th>Password</th>
<th>Mobile</th>
<th>Address</th>
<th>Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sahar</td>
<td><a href="mailto:ss@hotmail.com">ss@hotmail.com</a></td>
<td>98976</td>
<td>564521876</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Asma</td>
<td><a href="mailto:FF@hotmail.com">FF@hotmail.com</a></td>
<td>876</td>
<td>560854322</td>
<td>27</td>
<td></td>
</tr>
<tr>
<td>Hadeel</td>
<td><a href="mailto:li@hotmail.com">li@hotmail.com</a></td>
<td>56789</td>
<td>560743298</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td>ZahrEE</td>
<td><a href="mailto:z@gmail.com">z@gmail.com</a></td>
<td>4455</td>
<td>587654908</td>
<td>22</td>
<td></td>
</tr>
</tbody>
</table>

Table 3: drivers table.

III. RESULTS AND DISCUSSION

To evaluate the system, we invited 20 students from the Imam Abdurrahman Bin Faisal University (IAU) at the College of Applied Studies and Community Service for using the proposed system. A brief description of the system interface and usage was illustrated to the
students. After tested the system, the student answered a survey which consists of 10 items to measure the user satisfaction level (as shows in figure 10). As can be interpreted from the result, the majority of users agree that the system is easy to use, beneficial and achieves the primary objective of the project.

![Figure 10: collected data results from the 20 students.](image)

II. CONCLUSION

In Saudi Arabia, there are so many people who are capable of making donations and also there are so many Nongovernmental Organizations (NGOs) which are helping poor and needy people of Saudi Arabia. But to connection gap is not as blur as it should be. There has to be some simple, fast, intuitive and secure way of doing such online donations so that users can donate easily with just a click. The aim of this work is to design and develop a Web Based Online charitable Donation System. Where, the charitable website will collect the charitable donations (such as clothes, toys, school tools) and delivers it to the children who need it. The proposed system will provide voluntary opportunities for those wishing to be volunteer in delivering the donations to the homes of the poor for free. The proposed work was designed and developed using the Unified Modeling Language (UML), SQL Server for implemented the database, and ASP.net and Visual basic programming languages.

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