Design Web-based Portal to Management a Pilgrim Office in Kurdistan Region

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Article Information	Abstract
	In the era of globalization, the region of Kurdistan, is participation in several ongoing projects where IT-enable systems are intended to be implemented in various sectors as part of the national IT policy. However, because of the establish system complex structure and the outdated system poor design, implementing IT enable systems locally is a significant issue. Particularly in the section dedicated to Hajj services, where files are still manually stored overcrowding happens ate registration offices since pilgrims cannot get any fresh instruction or announcements at the time they must got to the office or call them and insufficient security and safety measure for pilgrims' data. The purpose of developing this file filing system was to facilitate and ease the management of current files by staff. As part of the research process, issues with Hajj file management were identified and information was gathered via literature research, interview and observation. Laravel (PHP), Bootstrap and HTML5 are programming language used in system development, along MySQL, Xampp. System Usability Scale (SUS) approach was used to test the system, and 10 participations sign up for it. The highest overall satisfaction rate, at roughly 80.1%.

A. Introduction

One of Islam's five pillars is the Hajj, or pilgrimage to Mecca. At least once in their lifetime, individual who possess adequate financial resource are required to do it [1]. The Hajj is the showcase for the Muslim community's unity and obedience to Allah. During the month of the Hajj, pilgrims would travel in procession with tens of thousands of others to perform a number of rites as they simultaneously converged on Mecca [2]. The majority of Hajj organizations currently handle pilgrims using manual paper-based processes, which is expensive and time-consuming. [3]. Hajj Management System, an on-line system whereby prospective hajj pilgrims will be able to register for hajj and manage their hajj procedures any time and anywhere in the world. This project is initiated to facilitate managing hajj agencies, Pilgrims and related information and provide support to hajj offices by effective use of Information Technology. Before the Web era, various software development methodologies have been proposed for the development of software applications for different domains. These approaches aimed to satisfy user need, identify ways to propose an organized software development process, and low the products ongoing maintenance costs. Some of the current techniques have been expanded in response to the development of web-based software systems and the advent of the Web. Additionally, new approaches also known as informal methodologies are introduced for the development of web-based systems because the process of developing these systems isn't thought of as an extension of classical software engineering, even though the fundamental goal of developing software is the same for both web-based and non-web-based system.[4]. Web Services technology is based on the concept of service-oriented computing. Web services are standards that link and share business operation over a network where applications from many vendors, language and platforms communicate with clients and with one other, integration Web based applications [5]. Web apps are programs created in languages supported by browsers that may be viewed across a network via a Web browser (e.g., HTML, JavaScript) [6]. Having a "useful" and "usable" website for the pilgrims is essential. A website is considered "useful" if it allows users to accomplish the goals, they set out to accomplish when they came to the page.

When users view a websites user interface to be intuitive and easy to use, its considered "usable" [7]. The Umrah and Hajj website should not be meant for the designers, but rather for the consumers who are the future pilgrims, this is the objective that designers must have before diving into their vibrant creations.

B. Literature Review

In order to correctly achieve our research goals, we first analysed the existing literature to better understand the concepts and links between managing all relationships and interactions with customers and potential customers systems, innovation capability and dynamic capabilities.

In [8], conducted a full research on the possibility of facilitating the Hajj process for agents and in managing Hajj travel companies.

The main objective was Therefore, the project is to facilitate the process of filling out the digital form and submit it to pilgrims wishing to perform the Hajj, as well as to provide sufficient information about the Hajj package and to provide

appropriate interfaces for officials and group leaders. There are many other researches to facilitate the Hajj in all respects, for example (security, health, building reconstruction, providing amenities for pilgrims).

In [9], submitted a thesis to track pilgrims' locations via wireless networks to provide security and safety in Makkah Al-Mukarramah because the crowds of people and the turnout of pilgrims all over the world leads to insecurity and lack of discipline in the obligatory Hajj.

By presenting detailed research [10] on how to monitor crowds of people, ensure their safety and save many lives, but not through wireless networks, but through thermal surveillance cameras. The project and the system differ from those researches that were conducted. The main objective of this project is to facilitate the process of submitting the form for reservation to perform the Hajj obligation and to avoid overcrowding in travel offices and Hajj agents, especially in this circumstance in which the world is where overcrowding leads to a large spread of the Covid virus. This work will be used to facilitate pilgrims. All matters (transportation, hotel reservation, flight times, etc.).

In [11], Celentance conducted an overview of a systematic search of the published literature on health risks and services in the Hajj for 2005 - 2014, intending to provide health policy recommendations to prevent health risks. Of the 335 studies initially identified, 60 met the inclusion criteria for the review. Studies identified were diverse in method and focus. At the end of this paper, the researchers classified the results into 3 major categories: communicable diseases, non-communicable diseases, and health services [12].

C.   Research Methodology
3.1 The system model
The research uses the waterfall model which is simple and easy to use [13]. It is document driven where each phase yields a set of documents. Each phase must be completed before starting in the following phase.
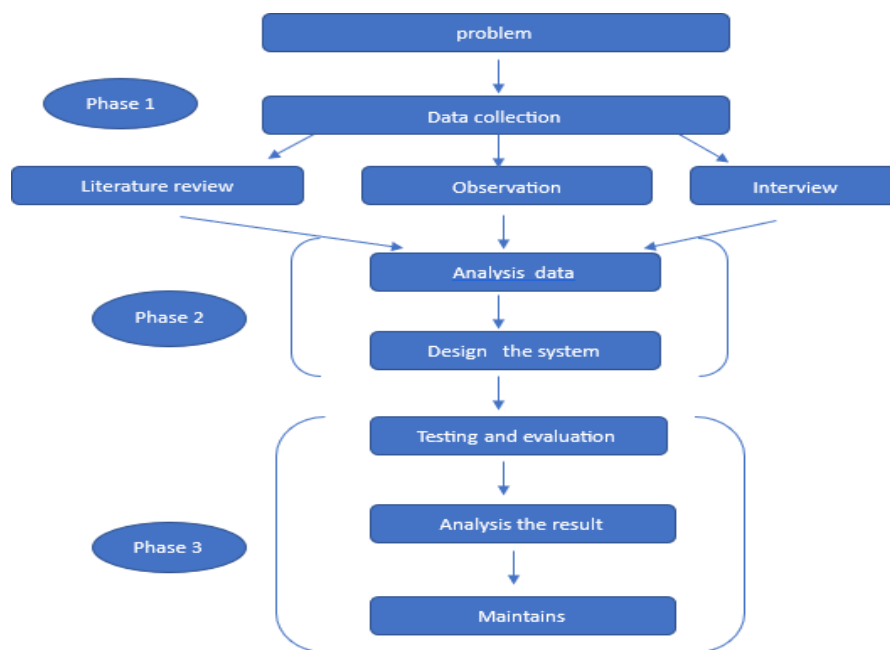
Figure 1. Research Methodology

Phase 1: Issues pilgrims face and designed fix

When looking into this scenario that passengers encounter when registering at the Hajj and Umrah offices, a number of issues were brought up by the pilgrims we spoke with. Because there are so many pilgrims at the offices during the Haji and Umrah, there is a lot of traffics and worry among them.in particular, pilgrims are unable to receive any fresh instruction or alerts at the moment they need to visit the office or give them a call, which leads to registration offices being overcrowded. The primary concerns that pilgrims encounter during the registration process were the topic of this paper. The first is how to manage the information process in a simple and effective way the second is how to effortlessly and whenever needed obtain the information.

Phase 2: Analysis and Evaluation of proposed system

This stage involved analysing and assessing the proposal to ascertain its impact and whether it improves pilgrims' enjoyment and safety. The strategy was to manage all customer records effectively and provide the administrator with simple access to enter, update, remaining balances and the customers desired package.

Phase 3: Maintenance

Throughout the research process, maintenance is a collection of procedures that should be taken into account. Database will be kept up to date based on past reports of issues from pilgrims, their comments, and the actions made. Programmers can identify maintenance methods for validation that have the biggest potential impact on safety and/or economy by monitoring the history of pilgrim problem reports. This data is utilized to monitor which issues require

correction and serves as a basic gauge for manual quality (i.e., comparing the quantity of issues from year to year). In order to make sure that maintenance processes are suitable from the user's point of view—and not necessary to hide problems, but rather to rectify errors—the programmer does limited testing of the documentation. Documents are made available at this phase, wherein issues are found, the document is revised accordingly, and it is then made available again. The system's technical documentation will get better as more people utilize it.

This investigation, we used interview and questionnaire techniques. The objectives requirements, behaviours, worries and attitudes of those interacting with systems can be better understood thanks to these techniques.

To determine the specifics of the features that the system offers and the range of   tasks that various users can accomplish with it, a use case diagram is employed.
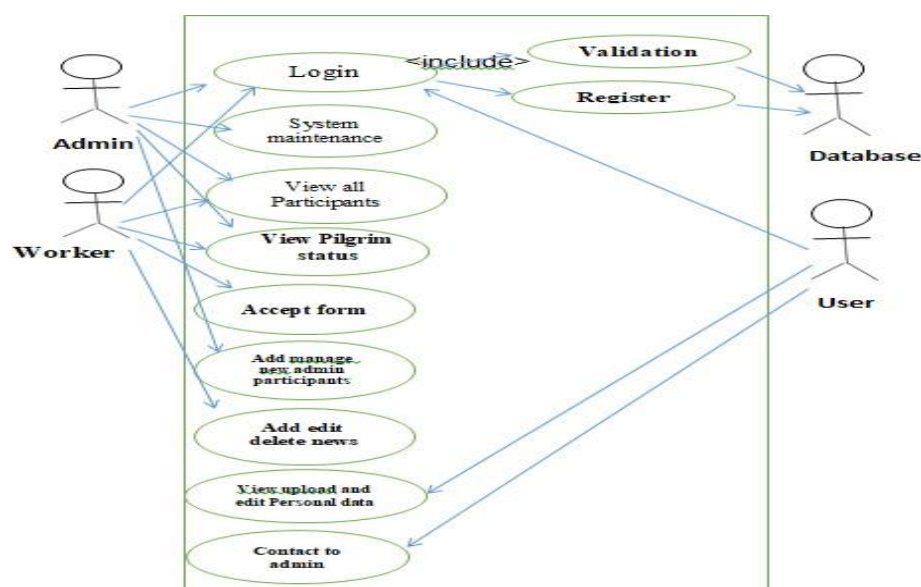

Figure 2. Use case diagram

3.2 Designing Interfaces
This section displays the design of certain important screen interface.

Home Page: Potential users can access the proposed system through its home page.

There is other alternative on the page for general information that is available to all users illustrated in Figure (3) such as: (about company, Services, News, Events, Login and Registration page).
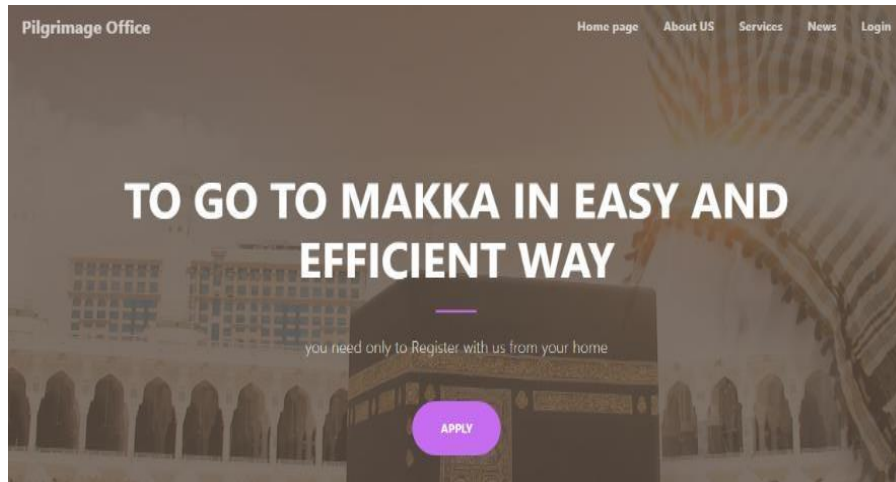
Figure 3. Home page

Login: Using their user passport number and password, users can access their personalized account from the homepage by logging in as illustrated in figure (4).
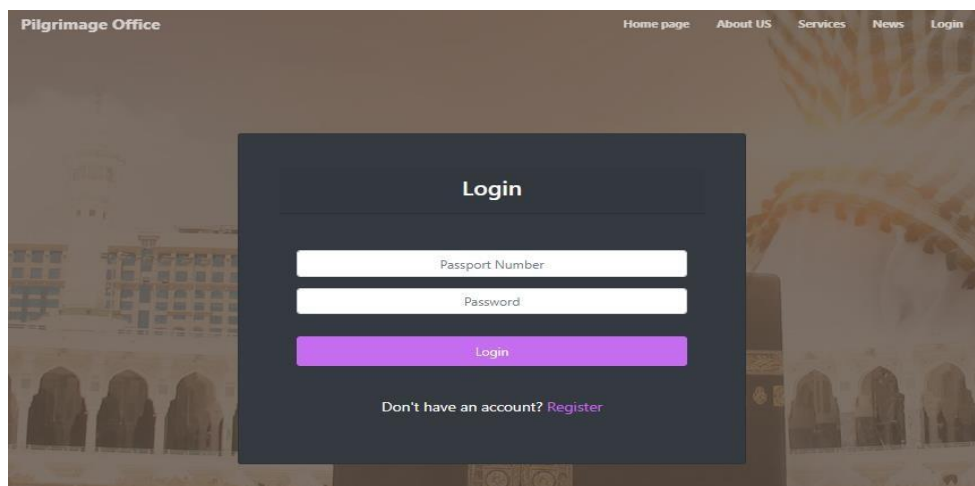

Figure 4. Login page

Sign up: When a user clicks on "Apply" button appears a new page contain step-by-step guide for registration in the proposed system this step include:

Step 1: Enter Personal Information

The first step of the form must be completed by the users include First Name, Middle Name and Last Name, select gender, Select state.

Step 2: Identity Details

This step includes personal identity, owner passport No., Mobile No., and E-mail address.

Step 3: Upload Photo & Documents

Figure 5. Registration form

This step a user needs to upload personal photo, passport photo, personal identity photo and Vaccine Certification, all documents should be in JPG/JPEG format only.

After the transaction has been completed successfully, a transaction receipt will be generated, a user receives acceptation by email, then a user can Re-Login to his account.

3.3   Categories of users

This system consists of three types of users:

3.3.1 Main admin

Dashboard page in figure (6) represent the page of main admin, which indicate many tools and services to control the whole system such as:
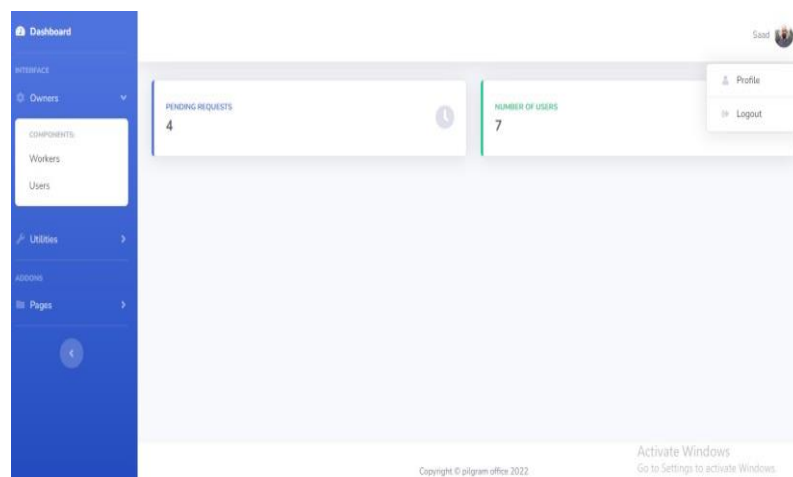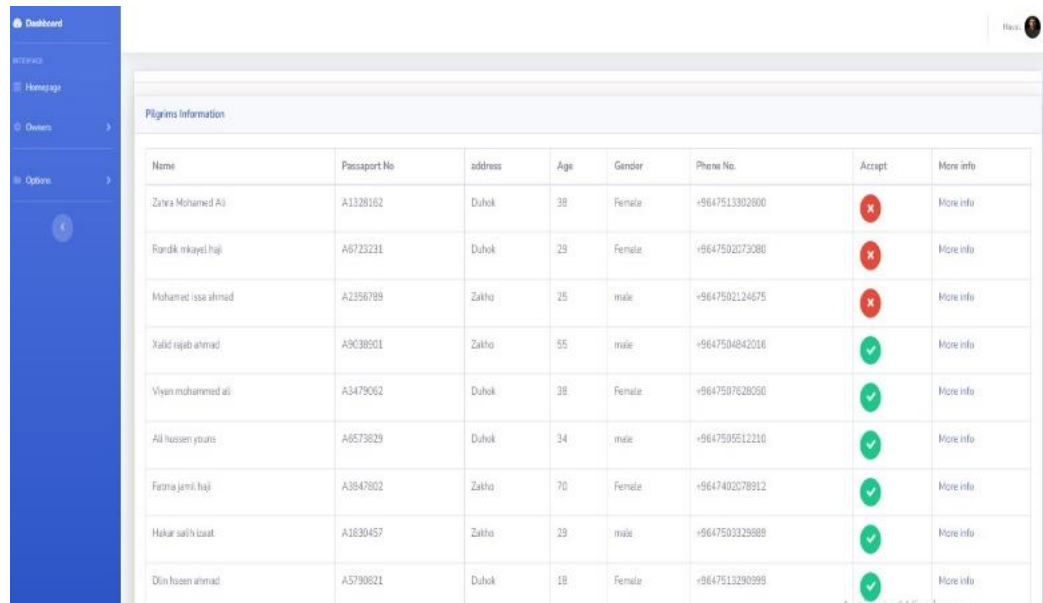

Figure 6. Admin Page

Services: press the "Services" button. a new page with all of the office's services listed on it, and the administrator can edit or remove any of the services.

Workers: admin is able to invite new employees or other administrators to the workplace and grant them access based on the type of user.

Event: when admin click on Events appear a new page for display all events will happen in future admin can edit information about events or delete events; also, admin can add a new even by click on the "add a new event" .

User's link: when users entering registration form and submit it, the admin can see his request and click on "accept" button then users can login to his account as show in figure (7)

Figure 7. Show How Many Pilgrims Have

Utilities: admin have many tools used to control the system all those admin tools can edit any information or delete it from tables include:

- Statues: admin used this tool to add, edit and delete statues to the system
- State: used this tool to add address information that users need in registration form.
- Genders: this tool used to add gender (Female, Male).
- City link: this tool is used to add the city's information to the system
- Role and Permission: this tool used by admin to give role and permission to a new worker or admin.

3.2.2 Workers

After registering by main admin, each worker is granted the required authorities then each worker can access their account and can use all functions dedicated to them in the proposed system as shown in Figure (8).
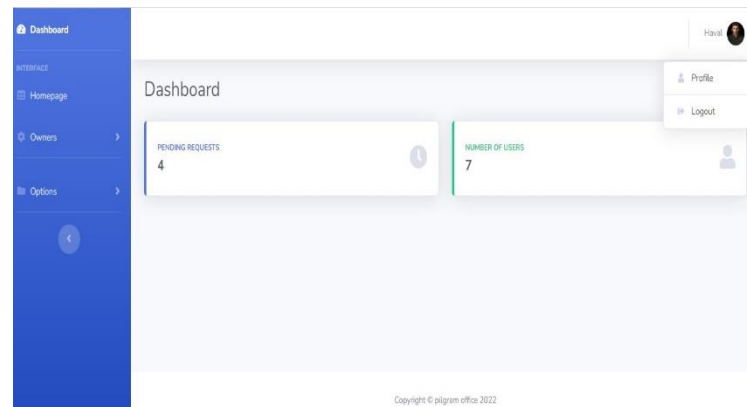
Figure 8. Worker Homepage

In figure (8) the workers have many tools that can be explained in details:

Dashboard: it's included many pages and it's considered the main page of administration. When you select Dashboard as your first option, two boxes will show up: the number of users who have accepted the suggested system and the numbers of users who are still pending requests.

Other important information also will be found in the dashboard page such as:

"Owners" tab: include two pages workers and users. They can only view information about other workers in the system. When click on "users" link then can view all information about users (pilgrim's name address, phone no, etc) the information details can find by click on more info and can update any information on it without have permission to delete any information.

Accepting request: worker has permission to accept or refuse a request of pilgrims by click on "accept" button show in figure above.

Options: click on options appear three options (Services, News and Events) show in figure (8) workers have permission to add any new services, news and events also can update on it if any errors exist without delete any options.

The header of the dashboard page contains:

Profile page: workers can see his profile information

Logout: click on it appear homepage and end the session on the system.

3.2.3 Pilgrims page

Figure (9) displays the personalized main page of users. As show the page contains all options that a user needs such as: events, News, services and profile page, and it also consists of many tools in the menu that users will need; when users click on offers link users can see all office offers.
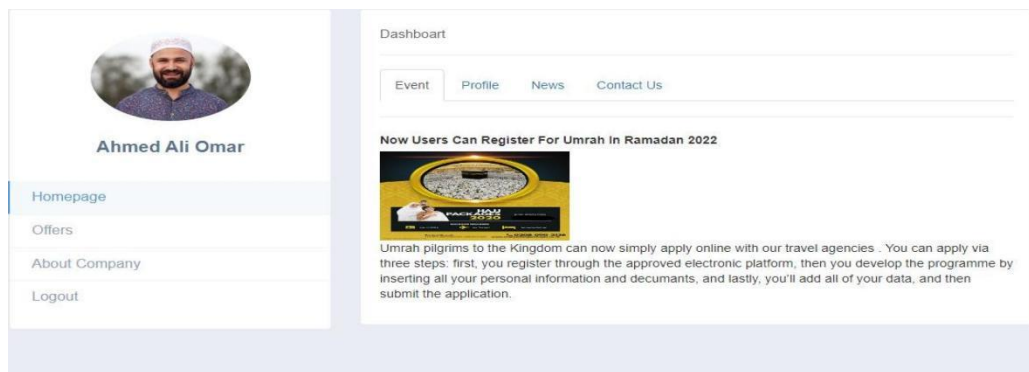
Figure 9. Pilgrim's homepage

Event: users can view all events as show in figure above.

Profile page: once a user has registered him online with the offices, they can view his profile and click on   the "Update profile" button to make any changes to the information entered. show in figure (10).
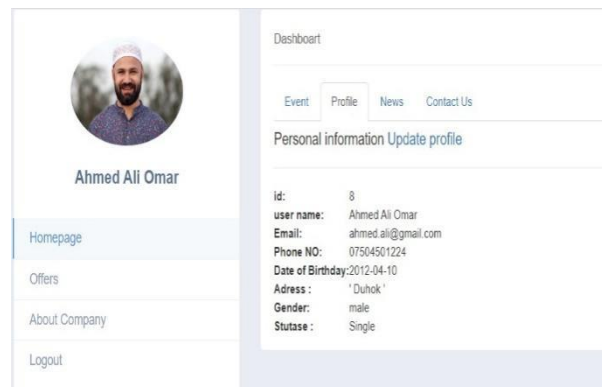

Figure 10. Show Profile User Page

News: all news that happened appeared when users click on news tab.

Contact Us: users click on "Contact tab" appear information about the office such as   address of office, phone no. and email users can easily access to the office and contact with Workers are employed on the company for any question or queries.

D. Testing
4.1 Quality of the system

To guarantee the suggested systems excellence in terms of its design, structures, content, and output, it needs to have a realistic test in which users themselves participant in order to get feedback from its application before it has actually been implemented [14]. Accordingly, information has been fed for 10 users as an initial test in the offices.

4.2 Usability of the system

A usability test is a simple scale monitoring the behaviour of the user when interact with the proposed system [15]. Understandably, usability encompasses more than just how the user interface looks. [16]. Usability has five

fundamental properties, which are learning ability, efficiency, user retention over time, mistake rate, and satisfaction.it is more closely linked to the way the user interacts with the system Practitioners begin by examining the intended users and the tasks they will be performing.[17].

Table 1. SUS Score by the Participant

Participant	SUS Score
1	85.5
2	80
3	84.5
4	75
5	70
6	72
7	78.5
8	80
9	90.5
10	85

The System Usability Scale (SUS) was used as a quantitative technique to measure the usability of the system [18]. SUS created as a tool for measuring the subject usability of industrial systems evaluation .it consists of 10 items with odd numbered items and even numbered items are worded negatively. Scoring the questionnaire yields a usability score in the range of 0-100.[19].

Table 2. SUS Questionnaire

Items	Strongly Disagree	Strongly Agree
1. I think that I would like to use this system frequently.	-	10
2. I found this system unnecessarilycomplex.	9	1
3. I thought this system was easy to use.	-	10
4. I think that I would need assistance to be able to use this system.	4	4
5. I found the various functions in this system were well integrated.	1	9
6. I thought there was too much inconsistency in this system.	6	4
7. I would imagine that most people would learn to use this system veryquickly.	1	9
8. I found this system very cumbersome/awkward to use.	8	2
9. I felt very confident using this system.	2	8
10. I needed to learn a lot of things before I could get going with this system.	7	3

Tested the developed system as part of the current usability test [20], as indicated in Table (2). The SUS score was determined based on the survey results, as indicated in Table (1). Ten users completed the SUS questionnaire.

According to Table (1), there is a minimum of 70 and a maximum of 90.5 SUS scores. Thus, the suggested system is generally in compliance with the SUS tool's guideline, according to which a ratio of 70% is considered appropriate, as indicated by the overall score of 80.1%.

E. Conclusion

Based on research conducted, Design Web-based portal by using Laravel with MySQL to Management a pilgrim office in the region of Kurdistan has been produced therefore each pilgrim have there portal to access his account to find any new notification ,news,events … etc by only one click from mobile phone, ipad or laptop which improve the level of service they wanted. The SUS results cite the system rather easily accepted by the Pilgrims in generally also users can access the system for the pilgrimage related work processes. Reduce waiting times for pilgrims when visiting office. Keeps pilgrimage office visitors relaxed and staff in control, thus contributing to the quality of daily work. Dealing with pilgrims' data more safely.

F. Acknowledgement

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