

# A Web-Based General Service Provider

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**Abstract—** In this paper, we report about the design and implementation of a web-based prototype system for allowing consumers to access general services using their computers or handheld devices. The aim of the work is to use technology to assist people having a daily routine of work in getting needed services that may hinder their regular work. These services include housekeeping, vehicle maintenance, child tutoring, and many others. We proposed and developed a web-based general service provider system where business entities can offer their services and consumers can book and use those services. Such a system can greatly save consumers' time and lower their stress level as they will be relieved to focus on their daily routine work.

**Keywords—** E-commerce; General service provider; Web-based systems; Bootstrap framework

## I. INTRODUCTION

The advancement in technology has benefited mankind in many ways. People try to use technology whenever they feel it can ease their working routine and bring more comfort in their lives. If used properly, it relieves people from stress and save their time. In this work, we are going to tackle a problem that we face in our daily lives and implement a technological solution for it.

Everyone has a daily routine, especially employees. These people will always have needs during their daily routine. Needs that can hinder them and disturb their daily routine. These needs can be vehicle care, housekeeping, child tutoring, and many others.

When needs are not fulfilled timely, people get stressed. According to a survey conducted by Tower Watson's Global Workforce Study, over 42% of total employees in the UAE are stressed and unhappy from their jobs [1]. Another study conducted by an office furniture firm "Steelcase Inc." says that in June 2015, over 42% of their sample employees claim that their office backgrounds and work environments are very stressful. These employees have trouble focusing due to various reasons aside from regular work and business. It could be families or problems at home [2].

We propose a web and a mobile application that provide functionality for users to access general services. The services will be offered by business entities that we call service providers. So our system is going to be like a middle-man platform that connect service providers with consumers. The system will benefit service providers by giving them

more opportunities to reach potential clients. But the major benefit will be for the consumers who can easily acquire different kind of services without disturbing their daily routine and thus eliminating one of the major causes of high stress levels.

The organization of the paper is as follows. Section II presents related work. Section III explains the proposed system and the development of the prototype system. Section IV explains how the prototype system was tested. Section V conclude the paper with an indication of possible future enhancements to the prototype system.

## II. RELATED WORK

Most of the research/development work in online shopping is focused on either trading of consumer products or sharing reviews of users of these products which may help other potential buyers in deciding which products to buy [3][4][5][6].

There are few companies in the UAE that offer some kind of online service to consumers. These companies include Maid Services [7], MyPrivateTutor [8], SMS Maid [9], and ZDEGREE [10]. Each of these companies offer a particular service directly to the users. The service provider is the company itself. We aim at offering a platform that will provide general services from different companies to potential consumers residing in a locality.

## III. THE PROPOSED SYSTEM

The proposed system is a platform where different service providers showcase their services and potential consumers can browse and possibly avail those services. The owner of the proposed system will work as an intermediary between the consumers and the service providers. The profit for the

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owner company can come as a commission from the service provider and advertisements. The proposed system is going to be accessible from computers and smartphones. It has the following three modules (Figure 1).

- A *website* allowing computer/smartphone users to use and interact with the system.
- A *mobile application* allowing smartphone users to access the system functionality in a more natural way on smartphones.
- A *database server* that holds all the data generated by the website and the mobile application.

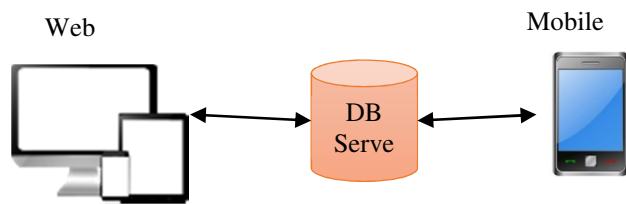


Figure 1: Three modules of the system

The basic functional requirements for both the web and mobile applications are listed below in three categories.

1. Service providers can
  - 1.1. Register themselves and login into the system
  - 1.2. Add, update or delete a service
  - 1.3. Update their profiles and contact admin for queries
2. Customers can
  - 2.1. Register themselves and login into the system
  - 2.2. Browse services from different providers
  - 2.3. Book services by filling up a form and receive a confirmation email
  - 2.4. Make payment for the services they book
3. Admin can
  - 3.1. Review changes made by service providers or consumers
  - 3.2. Generate different reports about services, consumers and service providers.

The context diagram in Figure 2 shows how the system "General Service Provider" interacts with the three main entities: Customers, Administrators, and Service Providers.

*Customers* are provided an opportunity to register, and then browse, book and receive services depending on their choice.

*Service providers* are external entities who provide actual services to customers through the system. Each time a service request is received, it is processed and transmitted to the concerned service provider. It should contain details on what the clients want.

*Administrators* support the system and make improvements when needed. Moreover, they also receive messages from customer regarding general enquiries, complaints and suggestions.

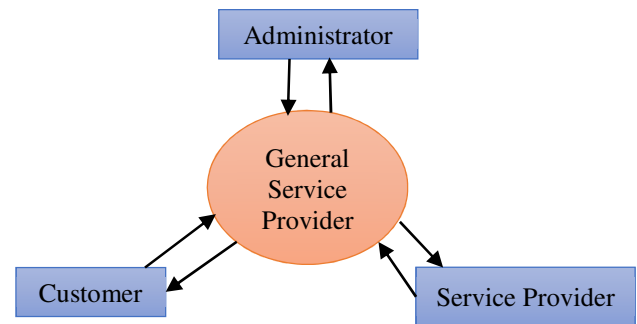


Figure 2: Context diagram

#### A. Developing the Web Application

We have used several technologies to develop the web application. HTML, CSS, and JavaScript [11] are used to setup the website pages. We have set up the website through a dynamic structure where PHP [12] organizes the files and requests them as needed. All database queries are also sent through PHP. All these languages are used through Bootstrap [13] which is a free platform for developing stylish and efficient websites. Bootstrap is a great platform for developing responsive and mobile friendly websites. All pages made through Bootstrap are completely customizable. Figure 3 and Figure 4 show two of the many web pages of the web application.

The web application follows a dynamic structure where the pages are organized and called whenever needed through PHP. For instance, the initial page calls the home page to which the header is designated by default and the body and footer is requested. Other pages are called only when necessary. The initial file namely, "index.php" begins by outputting the header which contains the navigation bar. A code snippet contain details of how the page is to be called when needed. By default, the "home.php" file is called at first to present the home page.

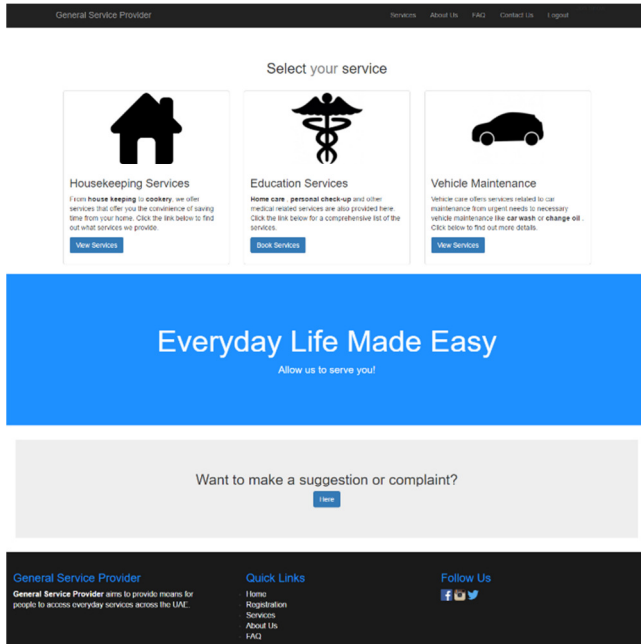


Figure 3: Main services page

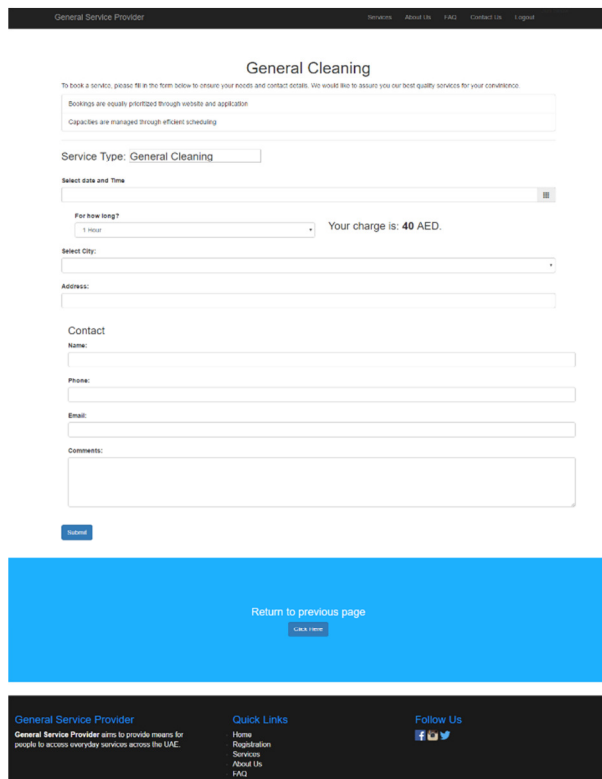


Figure 4: General cleaning booking page

The code in Listing 1 is contained within the index file. It is made to call the home page while checking for requests through the URL to call other pages. The code requires a "config.php" which contains details of how the source code should be connected to the database. Configuration file is shown in Listing 2. It allows the system to communicate with the database. The given code will make connection to a localhost database server.

In order to develop the web application server request handling module, we utilized WAMP, a software used for web development and applications [14]. It allows us to run SQL queries in PHP.

```
<?php
require '/pages/config.php';
if(isset($_GET['page'])){
    $page = $_GET["page"];
    $filename = "pages/".$page.'.php';
    if (file_exists($filename)){
        include $filename;
    } else {
        include 'pages/home.php';
    }
} else {
    include 'pages/home.php';
}
?>
```

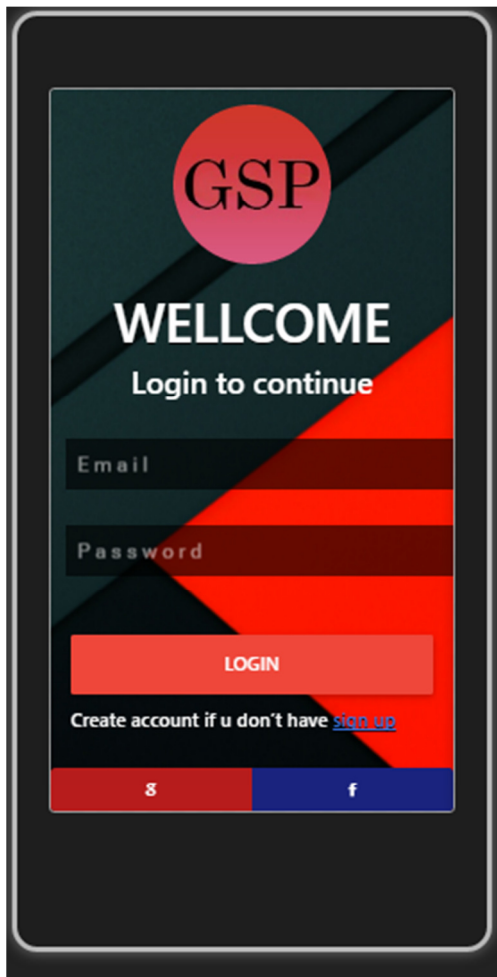
Listing 1: Dynamic website code

```
<?php
$svr = "localhost";
$usr = "root";
$pas = "";
$con = new mysqli($svr, $usr, $pas);
if ($con->connect_error) {
    die("Failed:".$con->connect_error);
    echo "Connection unsuccessful";
}
?>
```

Listing 2: Config.php

### B. Developing the Mobile Application

We have used Cordova and Ionic frameworks to develop the mobile application. Cordova framework [15] allows us to use the same source code written in HTML, CSS, and JavaScript and make an application for different mobile platforms. Ionic framework [16] is built on top of Cordova and allows us to create native like mobile applications using the familiar HTML, CSS, and JavaScript source codes. We also used Firebase [17], to handle the data storage requirements of our mobile application. Firebase is a cloud data service for mobile and web applications. Figure 5 and Figure 6 show two of the many screens of the mobile application.



firebase [17][18] and PHP [12] for the database. While the firebase module works with the application, the PHP module works with the website.

The web application has a list of web pages that work with PHP. In the registration page of the website, which is the initial stage of the user experience, PHP and firebase works side by side to register the user into to the database. Once his or her details are available on the database, they are able to login to the system through the web application or the mobile application. Other pages of the website are using only PHP.

During development, we had to perform several integrations to ensure that the database is updated properly. We have performed a number of tests that include the followings:

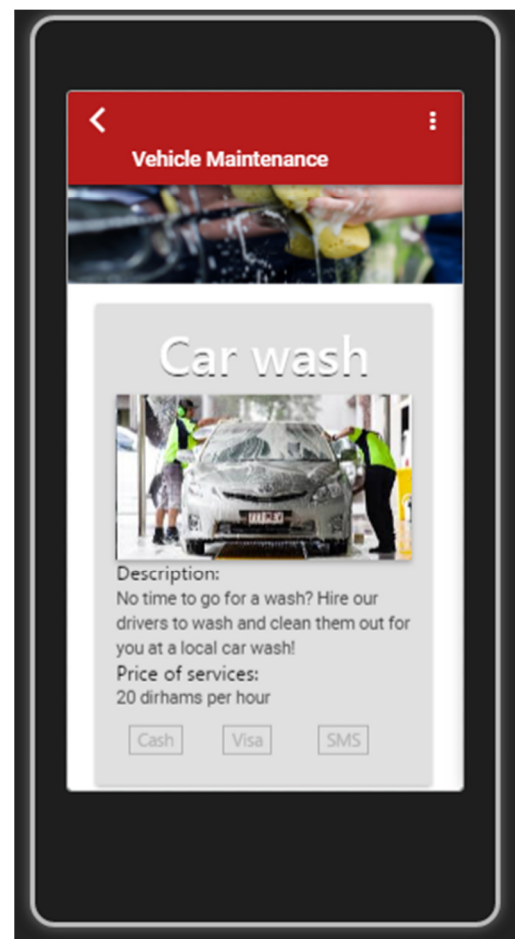


Figure 5: Mobile application login screen

Figure 6: Mobile application car wash screen

## IV. TESTING

We have developed the web application and the mobile application (for android) successfully and tested them to make sure that database is properly updated both from the website and the application. We have utilized

**Database update:** All transactions initiated from the web application or the mobile application are processed smoothly and are reflected in the database. Figure 7 shows a number of services we booked for testing purposes.

**User Acceptance:** We have designed the web and mobile application in a way to confirm with user acceptance where they are able to easily navigate through both modules without issues.

**Security:** We have ensured that the web and mobile application is secured in a way where users have a positive experience and do not encounter unexpected errors.

## V. CONCLUSIONS

We tried to provide generic services offered by different service providers to potential clients on a single system accessible from personal computers and also smart phones. In the initial version of the system, we chose the three most commonly used services: housekeeping, vehicle maintenance, and child tutoring. The resulting system is dependable and works correctly. It can greatly save time spent by clients needing those services. The system also helps service providing companies to reach out more customers. As future work, we plan to incorporate the following extensions:

- Allow external service providers to participate and post their services on the website directly and not through us.
- Allow clients to rate services and comment on them individually

## ACKNOWLEDGMENT

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## REFERENCES

- [1] Maceda, C. (2012, July 20). UAE employees struggling to cope with stress at work | GulfNews.com. Retrieved August 15, 2016, from <http://gulfnews.com/business/sectors/employment/uaeemployees-struggling-to-cope-with-stressat-work-1.1051718>
- [2] Gulf Business. (2015, June 3). Gulf Business |42% of UAE employees find workplace stressful - report. Retrieved August 15, 2016, from <http://gulfbusiness.com/42-uae-employees-find-workplace-stressful-report/>
- [3] Michael D. Clemes, Christopher Gan, Junli Zhang. An empirical analysis of online shopping adoption in Beijing, China. *Journal of Retailing and Consumer Services*. Volume 21, Issue 3, May 2014, Pages 364–375
- [4] Jill Mostellera, Naveen Donthub, Sevgin Eroglub. The fluent online shopping experience. *Journal of Business Research*. Volume 67, Issue 11, November 2014, Pages 2486–2493
- [5] Aurélie Michaud Trevinala, Thomas Stenger. Toward a conceptualization of the online shopping experience. *Journal of Retailing and Consumer Services*. Volume 21, Issue 3, May 2014, Pages 314–326
- [6] Don E. Schultz, Martin P. Block. U.S. online shopping: Facts, fiction, hopes and dreams. *Journal of Retailing and Consumer Services*, Volume 23, March 2015, Pages 99-106
- [7] Maid Service in Dubai, (2016). Retrieved August 15, 2016, from <http://www.marvelmaid.com/>
- [8] MyPrivateTutor - Find Tutors and Local Classes in Dubai, Abu Dhabi, Sharjah. (2016). Retrieved August 15, 2016, from <http://www.myprivatetutor.ae/>
- [9] SMS Maid Service Dubai, Professional Legal Maids, Pet Care Services Dubai, UAE. (2016). Retrieved August 15, 2016, from <http://www.smsmaids.com>
- [10] ZDEGREE Tire and Auto Services, Dubai, UAE. (2016). Retrieved August 15, 2016, from <https://www.myzdegree.com/>
- [11] W3Schools Online Web Tutorials. (2016). Retrieved August 15, 2016, from <http://www.w3schools.com>
- [12] Hypertext Preprocessor (2016). Retrieved August 15, 2016, from <https://secure.php.net/>
- [13] Bootstrap. The world most-popular mobile first framework. 2016. Retrieved August 15, 2016, from <http://getbootstrap.com/>
- [14] WampServer. (2016) Retrieved August 15, 2016, from <http://www.wampserver.com/en/>
- [15] Apache Cordova. (2016). Retrieved on August 15, 2016, <https://cordova.apache.org>
- [16] Ionic: Advanced HTML5 Hybrid Mobile App Framework. (2016). Retrieved August 15, 2016, from <http://ionicframework.com/>
- [17] Firebase | App Success Made Simple. (2016). Retrieved on August 15, 2016, <https://firebase.google.com/>
- [18] Narayanan, A. (2013, March 25). The Firebase Blog: Where does Firebase fit in your app? Retrieved August 15, 2016, from <https://firebase.googleblog.com/2013/03/where-does-firebase-fit-in-your-app.html>

Server: 127.0.0.1 » Database: mysite » Table: booked

Showing rows 0 - 16 (17 total, Query took 0.0006 seconds.)

SELECT \* FROM 'booked'

Number of rows: 25

Sort by key: None

id	title	date	hours	price	city	address	name	phone	email	comments
1	Maths		1	40	aaa	aaa	aaa	aaa	aaaa	
2	Maths		1	40	aaa	aa	aa	222	111	
3	General Cleaning		3 Hour							
4	General Cleaning		3 Hour		Dubai		ja22			
5	General Cleaning		80							
6	General Cleaning		120							
7	General Cleaning		120							
8	General Cleaning		160							
10	Vehicle Maintenance	06/21/2016		60	Umm al quwain	aa	hussain	055	h@gmio.a	no
11	General Cleaning	06/10/2016	80	2 Hour	Abu Dhabi	Al Ain	Jon snow	0501234567	jon.snow@admin.com	Hello clean my house
12	Maths		3		Al Ain	In my house	Jon Snow	0501234567	050754125	
13	Maths		3	120	Al Ain	In my	Jon Snow	0501234567	050754125	

Figure 7: Booked services while testing

**Authors Profile**

Dr. Jauhar Ali received his B.Sc. degree in 1986 from University of Peshawar, Pakistan. Later he received his Masters in Computer Science degree in 1990 from the same university. He received his PhD in Computer Science degree in 1998 from University of Tsukuba, Japan. He has 16 years teaching experience after PhD. He has completed several funded research projects and published many research papers in international journals and conferences. Since 2008, he is is serving as Associate Professor in Computer Science, College of Engineering, Abu Dhabi University.

