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A Customer Booking Transactional Portal - An Application Prototype on Libyan Airlines

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ABSTRACT: The Libyan Airlines project is used to develop the application for ticket booking web system that can be used by both customers and administrators of the company. The application is used to develop a prototype that provides the users to have the facilities of flight and ticket management for Libyan Airlines. There has been the addition of the flexibility to add more number of the functions. These can be used for the implementation across a number of the localities. At the same time it is convenient for administrators for the generation of the reports.

KEYWORDS: Libyan, Airlines, ticket, booking, online.

I. INTRODUCTION

Libyan Airlines an application prototype and is a customer booking transactional portal. The data here is in the form of customer data like passengers flying, their flying preferences etc, technical data like aircrafts models, names used etc., business data like revenue generated, profit earned etc. For having an advantage over other competitors the Libyan Airlines have the requirement to develop such a system where customers can book, cancel or query the tickets without the need of any customer care representative[1]. The company also provides convince to administer the system by logging as administrator and thus can add flights, remove flights, add users, and remove users. In this way Companies will provide the easy accessible and fast system directly to its customers and this will help in saving the time and effort of customer. This will also reduce the costs of extra employees and time for the company [2].

The proposed system will be a web portal that provides the basis of concept on ticket booking system having provision to the customers so that they can book their tickets online and can access the instant information of the their booking status online . The proposed system provides online booking for their customers and they can pay for the tickets online as well. Also after booking customers can check their status there [3].

The users of this application will be eventually the top executives, call centre executives and customers of the Libyan Airlines. This will be initially the prototype for the company that will proof the concept. Then the company will potentially evolve this application to their real life needs by outsourcing this prototype. This paper can also form the framework of reference for any airlines industry who intends to implement the data transactional and analysis system.

A. AIM of this paper

The overall aim of the paper is to develop the ticket booking web system of Libyan Airlines by using Microsoft technologies and to prepare an interface in the form of web pages that can be used by both customers and administrators of the company.

B. Objectives

- To transform the requirements into the running model of web system.
- To develop such a system that allows the booking, cancellation and query of tickets.
- To develop such a system that allows adding the new flights, remove flights and change their routes etc by the administrators.
- To develop such a system that allows the customer of the airlines to track the status of their tickets.
- To develop such a system that allows the administrators to enable, disable or add, delete the new user of the system.

To deploy the whole solution in a single integrated environment in a secured manner.

C. Structure of the Project

The first head of the project is that research has been initiated first in the frame of working website prototype and finally the report is being written based on the detail designed prototype. The Research report evolve through a series of steps



each representing the answer that is how should the research be designed to achieve the research objectives? And once the data have been gathered, then how that data will it be analyzed, interpreted, and used to get the final product.

II. LITERATURE REVIEW

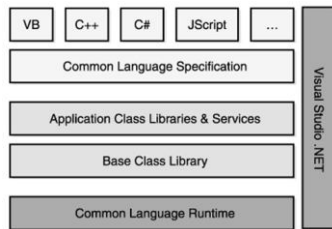
A. Overview

There has been a sudden spurt in the number of computer languages that have been coming up. The computer languages come in with certain amount of inbuilt improvements every time that they come into the market. The improvements are sometimes in accordance with the market trends, whilst the final product misses the ultimate aim of the market. From the perspective of the programmers, it has to mean that there has to be constant improvements on their part. They have to make the necessary changes, so that the idea about the product gets totally cemented. It also means that the programmers have to be in a constant state of equilibrium to make the necessary changes. The developers also have certain degree of inertia in learning the new languages that would result in the lag period in the assimilation of the newer languages in the learning ecosystem [9].

B. Net Definition and Functionalities

NET can be classified as a software platform that runs on the Microsoft Windows. It has an extensive library that uses a large number of the functions. There is also the inbuilt facility of having interoperability that would mean that the users are not dependent on the usage of the programs that have been written in a different language. This also ensures that the dependency on the machine is bare minimum [15]. Te programs that are run in the .NET platform use the services of the software platform rather than the hardware platform. This ensures that there is no machine dependability in the execution of the codes.

According to the authors [6] have spoken about the functioning of the .NET platform in terms of the efficiency of the usage of the available space. The data is maintained very efficiently so that the proper usage criterion is used. The code verification procedure is another feature that adds a lot of credibility to the data mechanism. The data is checked for the inconsistencies as well as what in which the data is used for the structural implications. The structure does not allow any of the code to be executed without the proper security protocols. It also does not allow the codes to run if the security norms are violated by any of the code structure or components.



The diagram shows the various functionalities of the .NET framework. The other components such as the Visual Studio Net are also shown here. The base of the functionality of the program is the operation system. The other components comprise of the application class libraries and CLR. This the structure that makes the complete architecture very robust and user friendly.

C. Description Of The Data Types

Every programming language tends to use a lot of the data types. The language is extremely robust in terms of the data usage. C# is said to be language that is extremely type dependent. The compiler should be informed about the types of the data that would be used by declaring the appropriate variables[9] Some of the most commonly used data types are basically char(signifies the types of the data classification that stores only a single character), int (it is the type of the data that is used to store the numbers), bool(it is uses to signify the data type that is neither true in sense nor is it false and float is used to store the decimal entities).

D. Server Side Scripting

The server side scripting can be named as the CGI (Common Gate Interface) scripts. These are the typical scripts that are run on the side of the server. This would also mean that the client does not feel the load on his side. As, the script is running on the side of the server, the user does not face any kind of issues what so ever [18]. The server side languages that are use in the scripting process are Java, Perl and others.



E. Description Of The Data Types

Every programming language tends to use a lot of the data types. The language is extremely robust in terms of the data usage. C# is said to be language that is extremely type dependent. The compiler should be informed about the types of the data that would be used by declaring the appropriate variables[15] Some of the most commonly used data types are basically char(signifies the types of the data classification that stores only a single character), int(it is the type of the data that is used to store the numbers), bool(it is uses to signify the data type that is neither true in sense nor is it false and float is used to store the decimal entities)[10].

F. ASP.NET

The full form is ASP is Active Server Pages. This is an example o server side technology. Thereby, it comes with a lot of the inbuilt benefits that were explained earlier. The most important facts are that it accords a lot of flexibility to the functioning of the program. The functionality aspect of the program becomes very easy. The ASP and ASP.NET are different technologies that are run by Microsoft. It makes the functioning of the programs a whole lot easier in terms of the functionality. It allows the services to be run by the services that are rooted in the web pages [9] The engine of the ASP.NET is used in the examination of the file. The browser returns the file in the HTML type. The web pages that comprise of the ASP.NET is classified basically as the web forms. They are the main building blocks of the complete set-up of the ASP.NET. The files are basically called as the files in the HTML category and have the typical aspx types of the extension attached with them [4].

III. RESEARCH METHODOLOGY

A. OVERVIEW

The project is based on the case study in which author will try to get interviews from some employees of airlines, however the airlines is not able to provide any real data because of security reasons, but the discussion with them will help to assume the requirements and help designing the system first . There is large part of the research that has been carried out in the UK (United Kingdom). This is an essential aspect of the research. There have been a number of the factors that have been studied.

The methodology of the study is the one with the case study analysis .The study of the cases has given a detailed explanation of the process. This shall help in defining the process. The other part is the use of the detailed service ideas facilitated by the visit to the Airlines.

B. RESEARCH PROCESS

The research at the quantitative level is comprised of a number of the factors that would be studied. The data has been collected from a number of the journal and the books. This has helped in the study.

The research at the qualitative level would comprise of the interviews with the employees of the Libyan Airlines. however the airlines is not able to provide any real data because of security reasons, but the discussion with them will help to assume the requirements and help designing the system first and the requirements have been gathered through the meetings with the staff and through telephonic conversations.

C. DATA COLLECTION

Data required in the project were collected by accessing the libraries web sites and other libraries may also find this helpful like e-journals and also numerous PDF articles are the source of the same. All this data is important for systematic investigation and research work.

There was a large volume of the data that was collected from the new resources like tat of the electronic journals. The papers of research were studies in this. The other part was the collection of the general idea of the data from the search engines like that of the Google.

Primary Data Source: There shall be the insertion of the Demo data to the SQL server for all the analysis.

Secondary Data Source: The banking system that is already existent would give an idea of the secondary data available.

D. TRIANGULATION

This is the method that has been used foe testing the validity of the data. All the data has been tested in the complete mane to get an idea about the type of the services. This is a feature of the triangulation.

E. DATA ANALYSIS

A. Interview Questions Analysis

- What is the kind of the business and how does the website contribute to the development of the business?



- What is the kind of the development that you have envisioned for the website?
- What is the kind of the message that the website is destined to convey?
- Who according to the objectives of the company is the primary audience or the website?
- What are the secondary goals of the website?
- Please define the kind of the unique features that would be required in the website?
- How many pages is the primary requirement of the web portal?
- How many users can access the website at a time?
- Would you want any administrator access to the website?
- What features would it offer for the customers?

This interview questions and analysis helped the author to get the requirements clearly. In this chapter the various business requirements have been gathered through the employees. The answers of the questions helped to design the requirements in simple software design models like use case models, use case descriptions etc. In the next chapter the requirements gathered has been converted into the software design models.

F. SOFTWARE DESIGN

A. Project Requirements

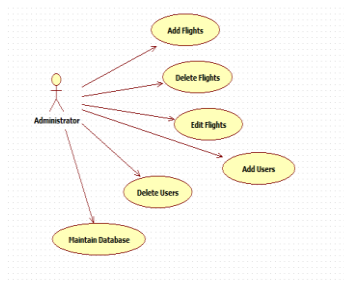
The system of the booking shall allow all the users to book the tickets. The booking process should be simple. The booking should take place according to the requirements of all the type of the person.

B. Business Cases

Administrator

The duties of the administrator are as follows

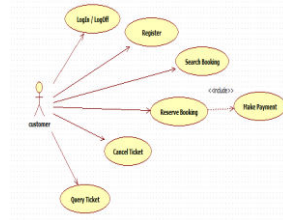
- Introducing new flights. Administrators are responsible for introducing new flights, deleting flights or amending the details of exiting flights like its departure time, arrival time etc.
- Adding new user accounts Administrator can add / delete the user accounts.
- Maintaining web servers and database servers. There is the maintenance of all the data by the administrators. The databases would be having all the data that is required for the smooth functioning of the system. There is also the storage of the server logs.
- Backing up and archiving databases. Network administrators back up databases daily.



Customers:

The responsibilities of the customers are summarized in the following list:

- Login / Log off: The customer can log into the system and can log off at any time.
- Register Details: The customer need to first register the account by entering his/ her details into the system.
- Search for flight: The customer can do the search to find the relevant flight with required timings.
- Reservation on flights. The customer has the ability to reserve the flight that shows the details of the flight and fare.
- Cancellation on flights. The customer can cancel the ticket that has been booked for the process of the travel with the availability of the online refund.
- Query flight status. The customer can further query the ticket once this is booked that tells the status of the ticket , departure date, arrival date etc..



G. SOFTWARE DEVELOPMENT

A. Designing the Master Page

The website is customized by master page layouts. Working with the master pages gives good looks and at the same time the same consistent look can be extended to other pages as well. The master page is saved with the extension .master and the important thing is that there shall be a single master key.

There is the definition of all the content by the Libyan master. When there is the search for a particular page that page is rendered by the ASP.Net engine. There is also the combination of the content page and the master page for all the data requirements.

B. Designing the layout of Web Pages

The more high-quality, professional website pages are designed by introducing the style sheets in the project and will there be a number of pages contained within the main pages and the style sheet formats can be extended to those pages too. The cascaded style sheet (CSS Start) has been used in the project again to give a consistent look to the whole website. The style sheet named---StyleLibyanAL.css would be added and the said styles sheet defines the colour, fonts, layout and other features of the formatting of the HTML elements [11].

There is the need for the styling of the header sections in the use of the properties. The elements are linked in the style sheet. This is accomplished in the following manner-

```
<link id="link1" rel="stylesheet" href="StyleLibyanAL.css" type="text/css"/>
```

The sheet that deals with the style is referenced in the master page. The StyleLibyanALcss is marked up and identified on the basis of all the pseudo classes. There is the example of the pseudo classes that are defined as a part of the style sheet. The StyleLibyanALcss is a Menu that would be helpful in formatting the menu on the master page's left side.

IV. TESTING AND RESULTS

A. Interface Testing

Login Screen:

There are 2 types of users in this.

1. Administrators

- Administrator can add user, delete user, edit user.
- Add flights, delete flights, edit flight.

2. Normal Users

- Normal user can create reservation (book flight)
- Cancel Ticket
- Query Flight
- Query Ticket

First Administrator Screens:

Login as Administrator

Add User

The validation is being handed by the user. Of the user has entered the wrong name and ht details, there would be the display of an error message. For admin user – there is a need to create the first admin user in database and assign its role as „Admin“

Manage User Screen (For Admin Users):

The administrator can log in the new users and also delete the ones that are decided by him.

Add Flights Screen (For Managers Users):



If logged in as administrator then the user has following options: Add New Flights, delete flights, edit flights, add users, delete users and update users.

Update Flights

The manager can find the details of existing flights and perform the updating accordingly.

Remove Flight

In the same screen the manager user can remove the existing flight by just entering the appropriate flight number and can press the remove flight button.

Create Reservation Screen

Under this screen the user can book their tickets online by just filling the web for shown here.

After filling the above form the same screen popped with a new option to select seat in front of each passenger

Cancel reservation:

The administrator user has the provision to cancel the ticket by just entering the ticket number and press the „Cancel Reservation“ button

Log OFF

Here represents the log off screen with some messages flashed in the screen.

V. PERFORMANCE TESTING

The errors in the time of the running are tested by the help of the run-time software that would be used for the purpose of the performance testing. This is used for the measurement of the performance of the system. The testing of all the soft wares is done at the level of all the modules. The testing is also performed on the level; of the individual modules. The points of the testing process are as follows-

- **Accessibility** – The software is so interactive and provides very easy interfaces that even a user with little or no training or experience can used. It can be accessed with a few mouse clicks and guided the user with its interactive interfaces.



- Reliability – Coding is so designed and the errors should be handled at all the points of the time by the help of the user points.
- Performance – The system is able to perform as per the expectations as fulfill all the requirements and the requested tasks of the user can be carried out.
- Efficiency – The system should use the exorbitant amount of memory or CPU and thus provides efficiency

VI. CONCLUSION

The reliability of the project would depend on the completion over the time that is required opt make the change and the budget qualities of the project. There are a number of the applicators like that of the C#, ASP.net tat have need learned in the development of the application. The large parts of the application have been developed by the use of the prior amount of the coding. The parts of the codes have been shown in the review of the literatures and the other important parts of the project. There has been a very simplistic coding that makes the functionality easier. The user would also look at all the levels of the changes that have come in the process over the usage detailed. The database that could be used of the storage is being developed in the process details. These are the aspects that need to be developed. The overall level of the website is simple with a lot of the usage happening that is good for all the involved people.

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