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Saudi Arabia booking information system

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Abstract
Our system used to manage reservation of flights in Saudi airline, booking process, manipulate guests information and manipulate information of employees who manage our system.

Keywords: system, manage reservation, booking process, Saudi airline

1. Introduction

Saudi Arabian Airlines (SAUDIA) is the national airline of Saudi Arabia, based in Jeddah. It operates domestic and international scheduled flights to over 70 destinations in the Middle East, Africa, Asia, Europe and North America [1]. Saudi Arabian Airlines started out in 1945 with a single twin-engine DC-3 (Dakota) HZ-AAX given to King Abdul Aziz as a gift by the U.S. President Franklin D. Roosevelt. This was followed months later with the purchase of two more DC-3s, and these formed the nucleus of what in few years later was to become one of the world's largest airlines.

Today SAUDIA has 141 aircraft, including the latest and most advanced wide-bodied jets presently available: B787-9, B777-268L, B777-300ER, Airbus A320-200, Airbus A321, and Airbus A330-300.

The Saudi Arabian has international locations in all towns in the world and local locations in all cities in the kingdom of Saudi Arabia. The organization is open because it provides local and international flights with appropriate price [2].

Paid up capital

Fig 1: *Paid up capital*

Paid up capital (SAR) :	15,000,000,000
Par value per share (SAR) :	10.00
Outstanding Shares :	1,500,000,000

The Company Structure

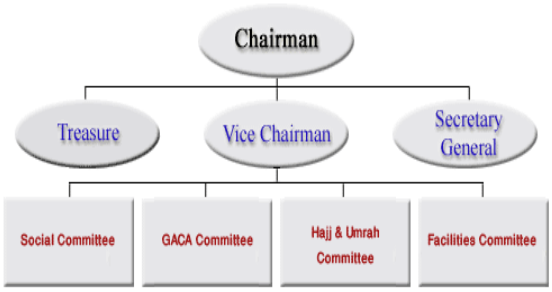

Fig 1: *Company Structure*

Saudi will continue to purchase state-of-the-art aircraft from major producers in the world to modernize its fleet, after conducting comprehensive studies on the airline's requirements from different types and sizes of aircraft, in accordance with Saudi's operation strategy for domestic, regional and international flights [3].

The organizations contain Fleets and contain includes:

Table 2: Contain information

Aircraft Type	Quantity
Airbus A320-214	43
Airbus A321	15
Airbus A330-343	28
Boeing B777-268L	9
Boeing B777-368ER	35
Boeing B787-9	11
TOTAL	141

Ground Services

Since 1988, SAUDIA GS (SAUDIA-Ground Services) has been providing range of ground handling services for SAUDIA, local carriers, and foreign carriers, hajj and Umra flights, and Royal and VIP flights. Our service professionals handle over 150,000 flights annually in 26 international, regional, and domestic airports.

Where services include all ground handling activities such as: Station managing and company representation [4].

Passenger Services (Terminal Services), Heavy equipment operation, Baggage services, Cabin services, Water & fleet services, Ground support equipments, Weight & balance control, Aircraft marshalling & parking, Ramp operation, Shipment escorting, Coordinate with Catering and Fueling, Companies [5].

2. Problem Statement

The problem was indemnified by direct interaction with booking websites and imagine what can happen with the use of manual system without using computer system.

3. Research Issue

The issues of the ordinary system is: Difficulty of manipulate flights information, Difficulty of manipulate Customers information, Difficulty of manipulate booking information, Slow performance result of using papers.

4. Objective

The objectives of purposed system: Facility of manipulate flights information, Facility of manipulate Customers information, Facility of manipulate booking information, Improve the performance of the system operations.

5. Requirement

To develop the system we must provide the following requirements: Software requirements which include the operating system for the computer like Windows 7, programming language like visual studio 2008 dot net, data base platform program like Microsoft access 2010, editor program to create the final report like Microsoft word 2007, and designing program to create diagrams like Microsoft Visio 2010.

Hardware requirements which include 1 personal computer to develop the system, and 5 personal computer to run and operate the developed system.

Data requirements which include

Customer data like (customer passport no- customer name – birth date- email – mobile – address –sex)

Employee data like (identification number – name – job – mobile – username – password)

Flight data like (flight no – departure date - arrival date – departure time – arrival time –no of empty seats departure town – arrival town)

Booking data like (booking number – booking date – booking price

Functional requirements of the system which include login interface for employees to login, Design customer form to manipulate customer information, booking form for manipulate booking information, and flight form to manipulate flights information.

Non -Functional requirements of the system which include

Reliability: The users should try the system, and show their pleasure and satisfaction while using the software if it worked as they were expecting. The system have to be reliable, depict correct information, the error and ambiguity, especially in recognizing words, should be minimum and so the incorrect results should be avoided.

Reparability: The software should be designed in an easy way, so if an unexpected error has taken place in the future, we should be able to access the system, and diagnose the problem, and fix it as quickly as possible.

Maintainability: The system should be easy to update and change to accommodate the new requirements in the future, and ensure, as possible, that no errors will appear while upgrading the software.

Availability: clearness and ease of use, the data in the website must be available on request for retrieving or performing any actions, especially websites that must be available 24 hours a day, and so that our software.

Speed: The system should operate fast, any delays and time consuming should be avoided as possible.

Performance: The system has to be designed and implemented to operate efficiently and to provide high level of effectiveness.

6. Analyzing

The business activity of the proposed system

Manipulate the employee information.

Manipulate customer information.

Manipulate flights information.

Manipulate Booking information.

Context data flow diagram:

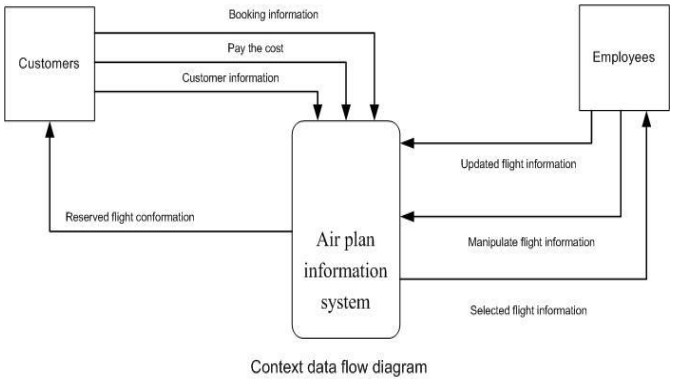

Fig 2: *Context data flow diagram*

This diagram is used to describe general overview of our proposed system and any other external entity 0- level data flow diagram:

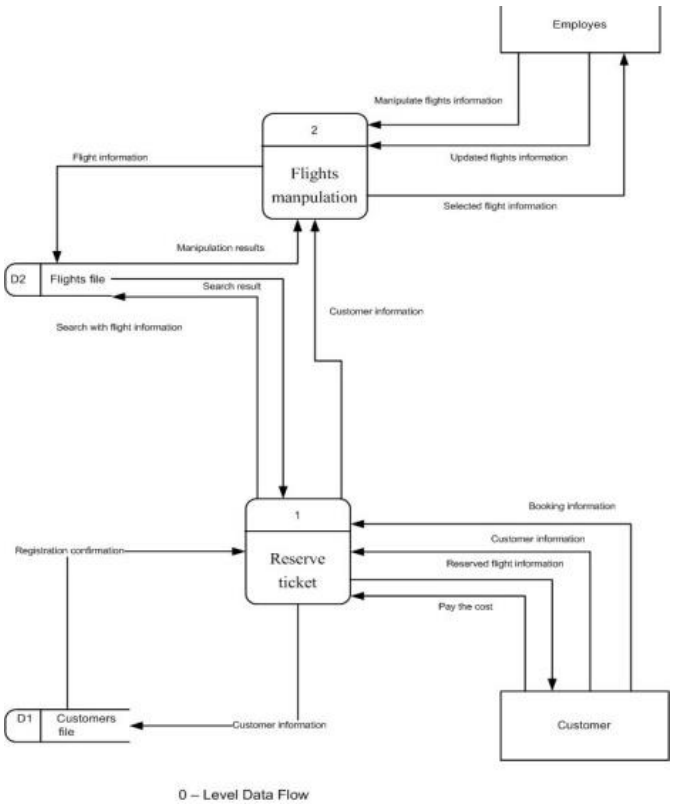

Fig 3: 0-level data flow diagram

This diagram will show the main process in the system without any details

1. Level data flow diagram

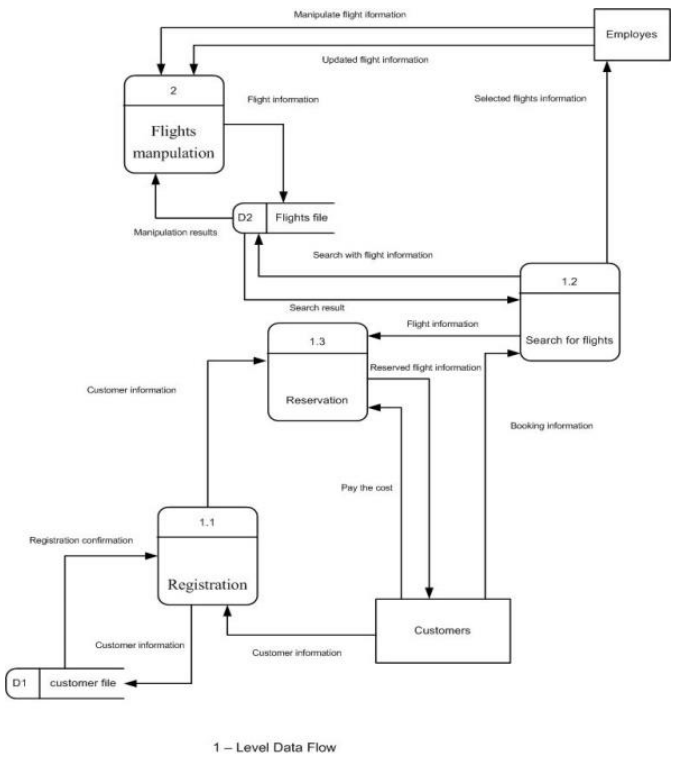

Fig 4: *1-level data flow diagram*

In this diagram the main process shown in 0-level data flow diagram will be divided to sub process if it's possible.

Entity Relationship Diagram

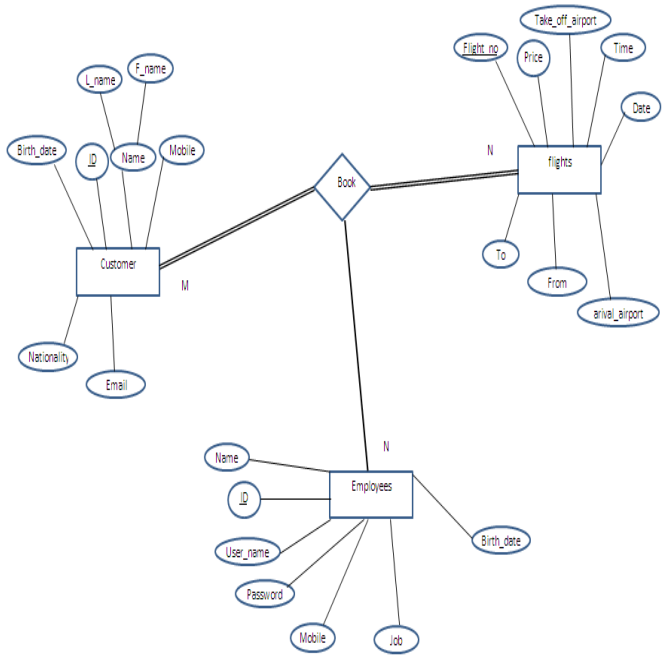

Fig 5: *Entity Relationship Diagram*

This diagram shows the main entities, attributes belong to each one, and the relations between this entities.

7. Development

In this chapter we will build out the system and implement all previous diagrams.

1. Employee table

employee : Table

Field Name	Data Type
ID	Number
name	Text
mobile	Number
job	Text
birth_date	Date/Time
user_name	Text
password	Text

Fig 6: Employee table

This table will store information about each employee and it contains the following fields.

2. Guests table

Guests : Table

Field Name	Data Type
ID	Number
F_name	Text
L_name	Text
Nationality	Text
Email	Text
birth_date	Date/Time

Fig 7: Guests table

This table will store information about each guests and it contains the following fields

3. Flights table

flights : Table

Field Name	Data Type
flight_no	Text
from	Text
to	Text
Take_off_airport	Text
arival_airport	Text
price	Currency
date	Date/Time
time	Date/Time

Fig 8: *Flights table*

This table will store information about each flights and it contains the following fields.

4. Booking table

booking : Table

Field Name	Data Type
book_no	AutoNumber
guest_id	Number
flight_no	Text
emp_id	Text
booking_date	Text
booking_price	Currency

Fig 9: Booking table

This table will store information about each employee and it contains the following fields.

5. Relationship implementation between tables

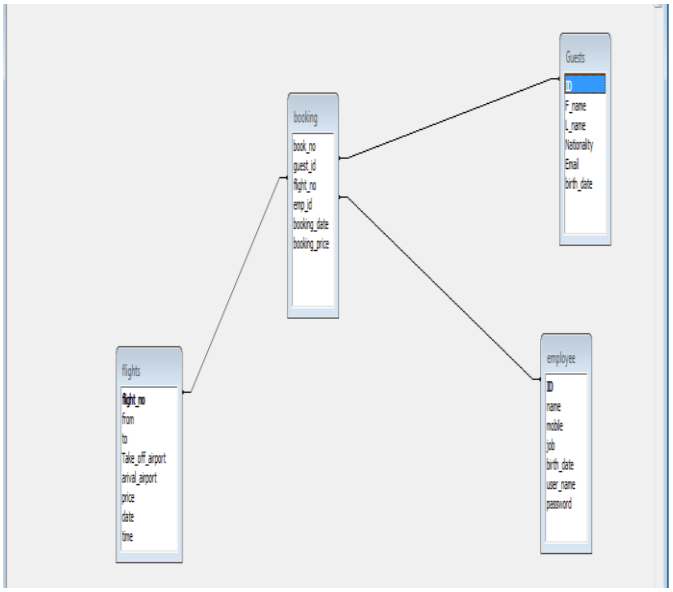

Fig 10: Relationships table

This table relationship fields

8. Results

1. Login interface

Fig 11: *login interface*

This interface manipulate the login information.

2. Main interface

Fig 12: main interface

This interface manipulate the main information

3. Employee interface

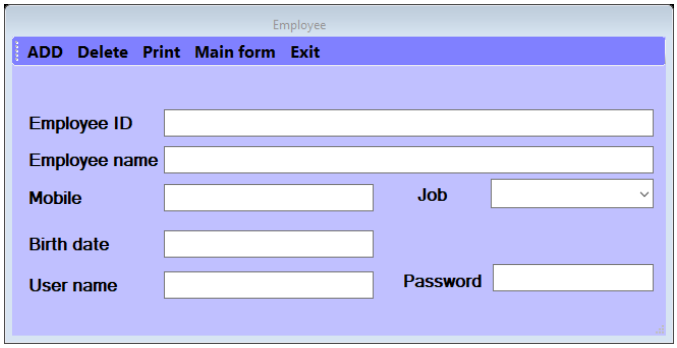

Fig 13: Employee interface

This interface manipulate the employee information

4. Flights interface

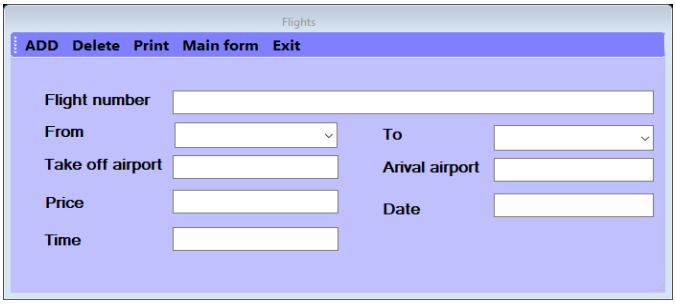

Fig 14: *Flights interface*

This interface manipulate the flights information.

5. Guessts interface

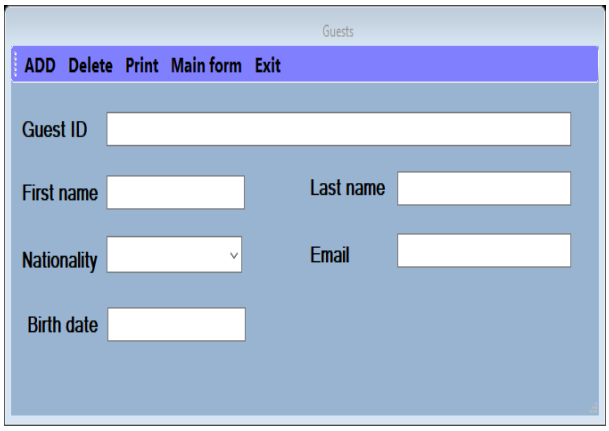

Fig 15: Guests interface

This interface manipulate the Guests information

6. Booking interface

Fig 18: Booking interface

This interface manipulate the Booking information

9. Recommendation

We recommend to upload this system in web server to permit for users to make booking form internet. And for better performance we need to migrate to another data base platform like SQL, SQL server, or MYSQL

10. Reference

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