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**KING ABDULAZIZ UNIVERSITY**  
**FACULTY OF ENGINEERING**  
*Department of Industrial Engineering*

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IE323-Computer Applications in Industrial Engineering II

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# H&B AIRLINES

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(Due: JULY 25, 2019 – 1:00 PM)

## Final Project

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**Introduction:**

Nowadays in the 21<sup>st</sup> century, technology has a serious impact on the society. Most if not all of people living on this planet prefer to buy their products online rather than going to stores and buy them. By using technology especially programming languages, companies tend to use these technologies in order to ease the process of selling their products. An airline company called 'H&B' stands for 'H' as Hawarnah and 'B' as Balamash, our last names, is an application that people could use to buy their ticket through and they can easily finish their travelling process.

**Environmental Support:**

The environmental support of this idea is to decrease the crown in the airline offices. Also the payment method is more safe, and the customer could have a discount coupon for using the application. Flights availability also will be more flexible and people can find their desired dates of flights easily.

**How this project will contribute to the society:**

This application will help people to save their time and money by buying the ticket while at home rather than going to offices and losing money and time.

**Approximated Cost:**

Microsoft has estimated that the company's SQL server pricing is 14,000[1]. It could increase depending on the quantity of service the server provides, for the enterprise server one it includes comprehensive, mission-critical efficiency for the challenging demands of database and business intelligence. Offers the greatest level of service and efficiency for Tier-1 workloads. Accordingly, an SQL developer cost it is from more than 50\$ per hour, at the end it is based on the amount of complexity.

**Comparison between C# and Oracle:**

ORACLE is easier than C# in handling tables in many ways such as creating and updating, when C# is programming language which need you to have a programming-based-mind. Oracle is much easier because the language itself is easy if you just understand the joining and sub queries then you can handle most of the cases.

**The sustainability of the project:**

The project can contribute to the development of the company in the case of adding new features and trying to solve the problems periodically and also providing a customer care center to solve customers' problems which will our company's reputation excellent, making it sustainable.

**Created Tables**

```
CREATE TABLE booking(  
key NUMBER(2) CONSTRAINT PK_b100 PRIMARY KEY,  
DFROM VARCHAR2(14),  
DTO VARCHAR2(14),  
RFROM VARCHAR2(14),  
RtO VARCHAR2(14))
```

```
CREATE TABLE BOOK_FLIGHT(  
PASSPORT_NUMBER VARCHAR2(15) CONSTRAINT PK_b10 PRIMARY KEY,  
DFROM VARCHAR2(15),  
DTO VARCHAR2(15),  
RFROM VARCHAR2(15),  
RtO VARCHAR2(15)  
DEPARTURE_DATE DATE,  
RETURN_DATE DATE.,  
TOTAL_PRICE NUMBER(15))
```

```
CREATE TABLE DEPARTURE(  
key NUMBER(2) CONSTRAINT FR_2 REFERENCES BOOKING (key),  
FLIGHT_NO VARCHAR2(14),  
FLIGHT_DATE DATE  
TIME VARCHAR2(14),  
PRICE NUMBER(20))
```

```
CREATE TABLE RETURN(  
key NUMBER(2) CONSTRAINT FR_3 REFERENCES BOOKING (key),,  
FLIGHT_NO VARCHAR2(14),  
FLIGHT_DATE DATE  
TIME VARCHAR2(14),  
PRICE NUMBER(20))
```

```
CREATE TABLE INFORMATION(  
PASSPORT_NUMBER VARCHAR2(15) CONSTRAINT FR_5 REFERENCES  
BOOK_FLIGHT (PASSPORT_NUMBER ),,,  
NAME VARCHAR2(40),  
EMAIL VARCHAR2(40),  
GENDER VARCHAR2(14),  
BIRTH_DATE DATE,  
CARD_NUMBER NUMBER(20),  
CARD_TYPE VARCHAR(14).,  
CARDHOLDER_NAME VARCHAR2(40),  
EXPIRY_DATE_Y NUMBER(13),  
EXPIRY_DATE_M NUMBER(13),  
SECURITY_CODE NUMBER(3))
```

```
CREATE TABLE SEAT(  
PASSPORT_NUMBER VARCHAR2(15) CONSTRAINT FR_6 REFERENCES  
BOOK_FLIGHT (PASSPORT_NUMBER ),  
SEAT VARCHAR2(15))
```

```
CREATE TABLE USERS(  
USER_NAME VARCHAR2(15),  
PASSWORD VARCHAR2(20))
```

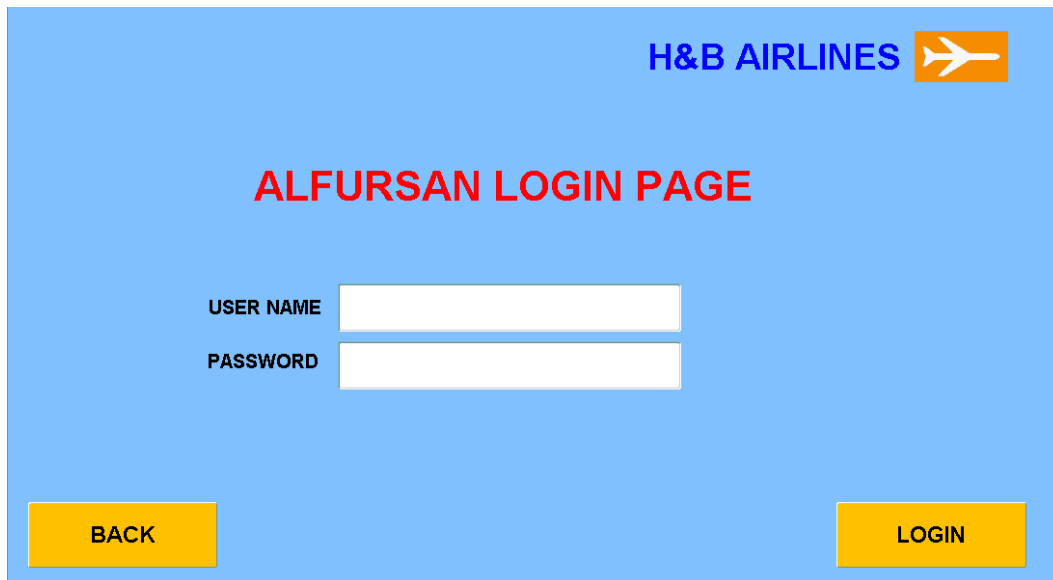
**REPORT COMMANDS**


```
SELECT ALL BOOK_FLIGHT.PASSPORT_NUMBER,  
BOOK_FLIGHT.DFROM, BOOK_FLIGHT.DTO, BOOK_FLIGHT.DEPARTURE_DATE,  
BOOK_FLIGHT.RFROM, BOOK_FLIGHT.RTO, BOOK_FLIGHT.RETURN_DATE,  
BOOK_FLIGHT.TOTAL_PRICE,  
INFORMATION.NAME, INFORMATION.PHONE_NUMBER, SEAT.SEAT  
FROM BOOK_FLIGHT, INFORMATION, SEAT  
WHERE ((INFORMATION.PASSPORT_NUMBER =  
BOOK_FLIGHT.PASSPORT_NUMBER)  
AND (SEAT.PASSPORT_NUMBER = BOOK_FLIGHT.PASSPORT_NUMBER))
```

```
SELECT ALL BOOK_FLIGHT.TOTAL_PRICE, INFORMATION.SECURITY_CODE,  
INFORMATION.EXPIRY_DATE_M, INFORMATION.EXPIRY_DATE_Y,  
INFORMATION.CARD_TYPE,  
INFORMATION.CARD_NUMBER, INFORMATION.CARDHOLDER_NAME  
FROM BOOK_FLIGHT, INFORMATION  
WHERE (INFORMATION.PASSPORT_NUMBER =  
BOOK_FLIGHT.PASSPORT_NUMBER)
```

## Innovation

### 1- User name and Password



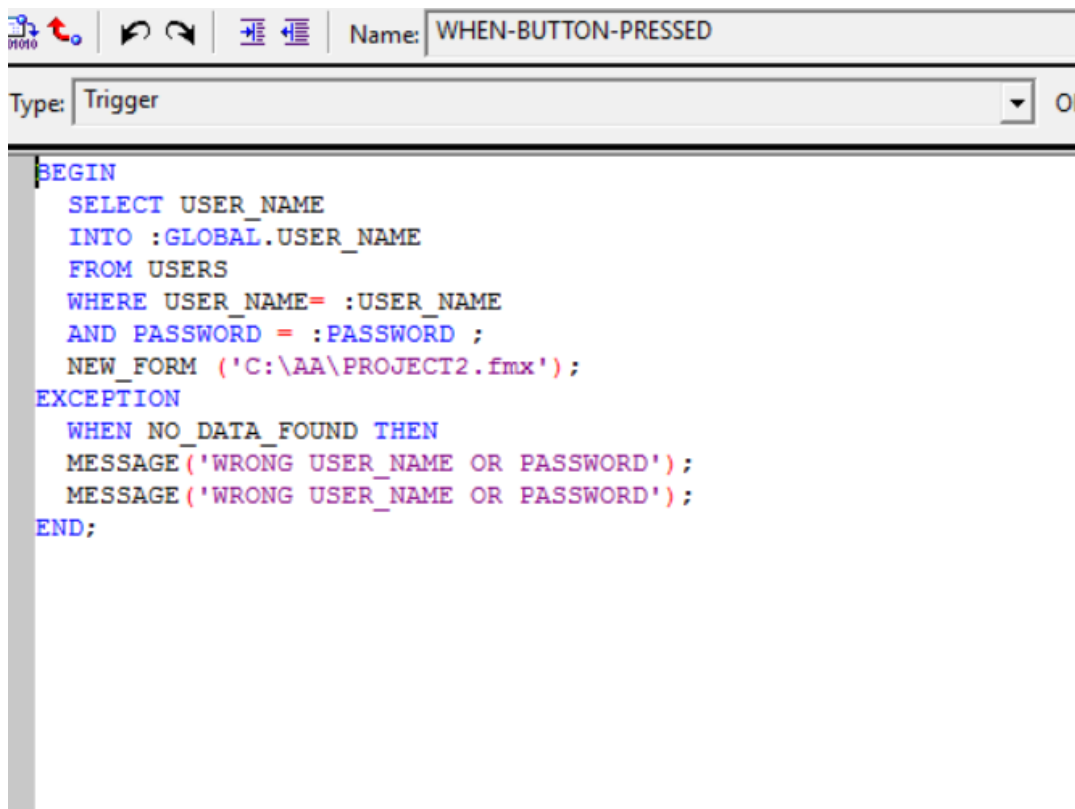
H&B AIRLINES 

**ALFURSAN LOGIN PAGE**

USER NAME

PASSWORD

BACK LOGIN

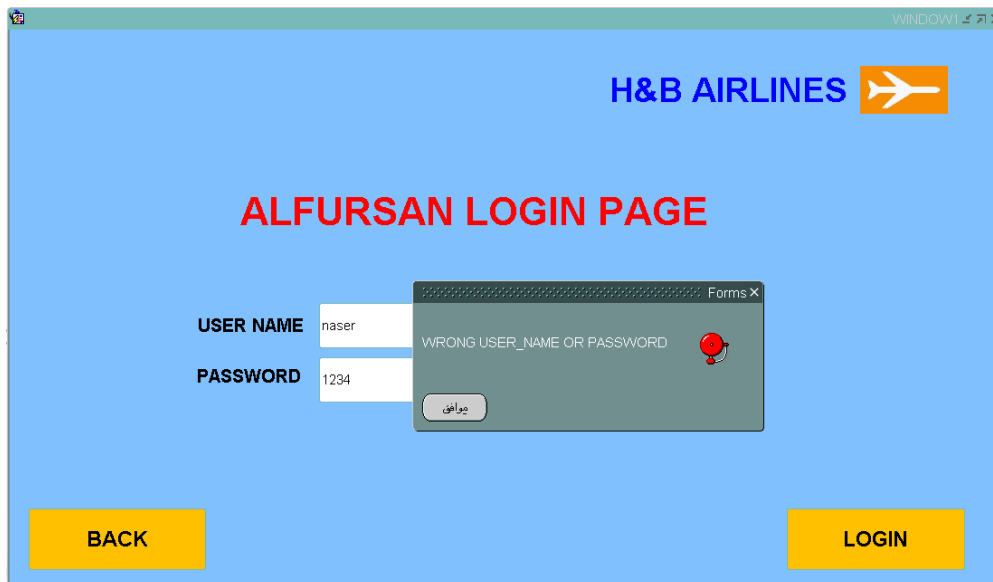


```

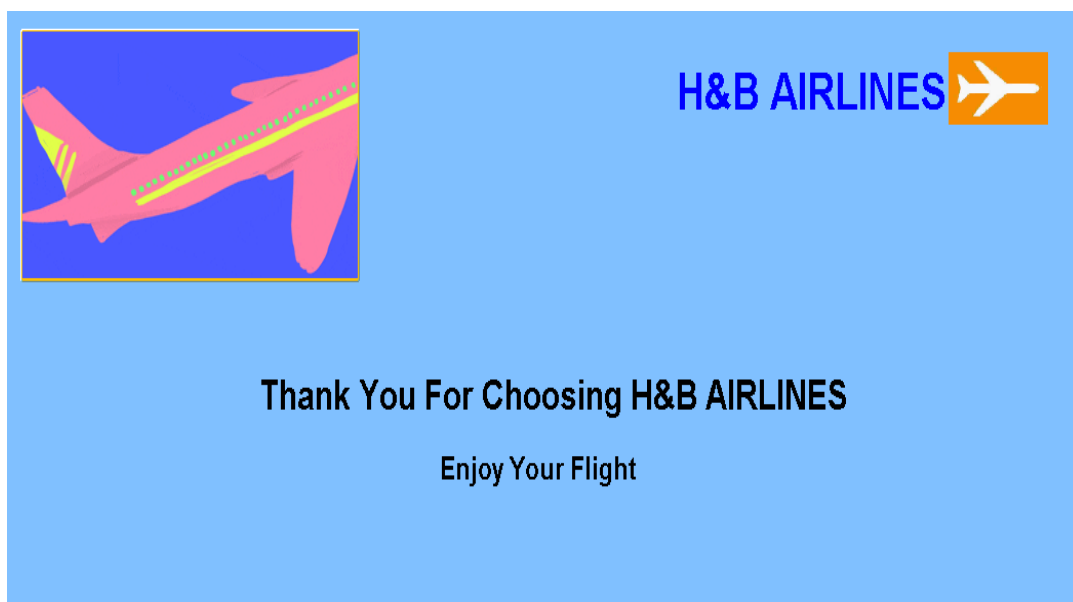
Name: WHEN-BUTTON-PRESSED
Type: Trigger
ON

BEGIN
  SELECT USER_NAME
  INTO :GLOBAL.USER_NAME
  FROM USERS
  WHERE USER_NAME= :USER_NAME
  AND PASSWORD = :PASSWORD ;
  NEW_FORM ('C:\AA\PROJECT2.fmx');
EXCEPTION
  WHEN NO_DATA_FOUND THEN
    MESSAGE('WRONG USER_NAME OR PASSWORD');
    MESSAGE('WRONG USER_NAME OR PASSWORD');
END;
```

## 2- Error POP – up window



## 3- Animation pictures (gif)





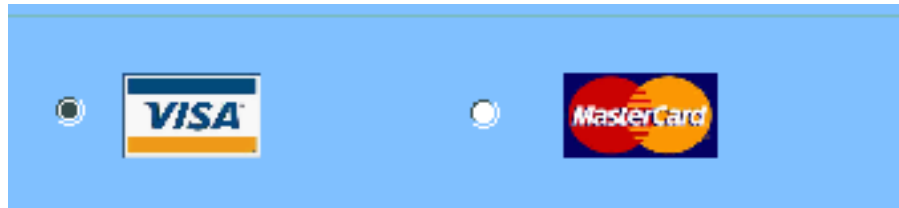
## 4- CALENDER

The screenshot shows the H&B AIRLINES booking interface. The form is divided into two main sections: **INFORMATION** and **Payment Details**. The **INFORMATION** section includes fields for Name, Passport Number, Email, Phone Number, Gender (with ☒ for MALE), and Birth Date. A yellow **Calendar** button is next to the Birth Date field. The **Payment Details** section includes fields for Card Number, Cardholder's Name, Security Code, and Expiry Date. A VISA logo is displayed next to the Card Number field. A date picker calendar is open, showing the month of July 2019. The calendar has a header with navigation arrows and the text "يوليو ٢٠١٩". The days of the week are listed in Arabic: السبت, الاحد, الاثنين, الثلاثاء, الاربعاء, الخميس, الجمعة. The calendar grid shows dates from 1 to 31. The date 25 is highlighted in blue. Below the calendar are **CANCEL** and **OK** buttons. A large yellow **NEXT** button is located at the bottom right of the form.

## 5- SAVE BUTTONS

The screenshot shows the configuration for a trigger named "WHEN-MOUSE-CLICK". The trigger is set to "Type: Trigger". The "Object:" field is empty. The trigger action is configured to execute the code "commit\_form;" when the mouse is clicked.

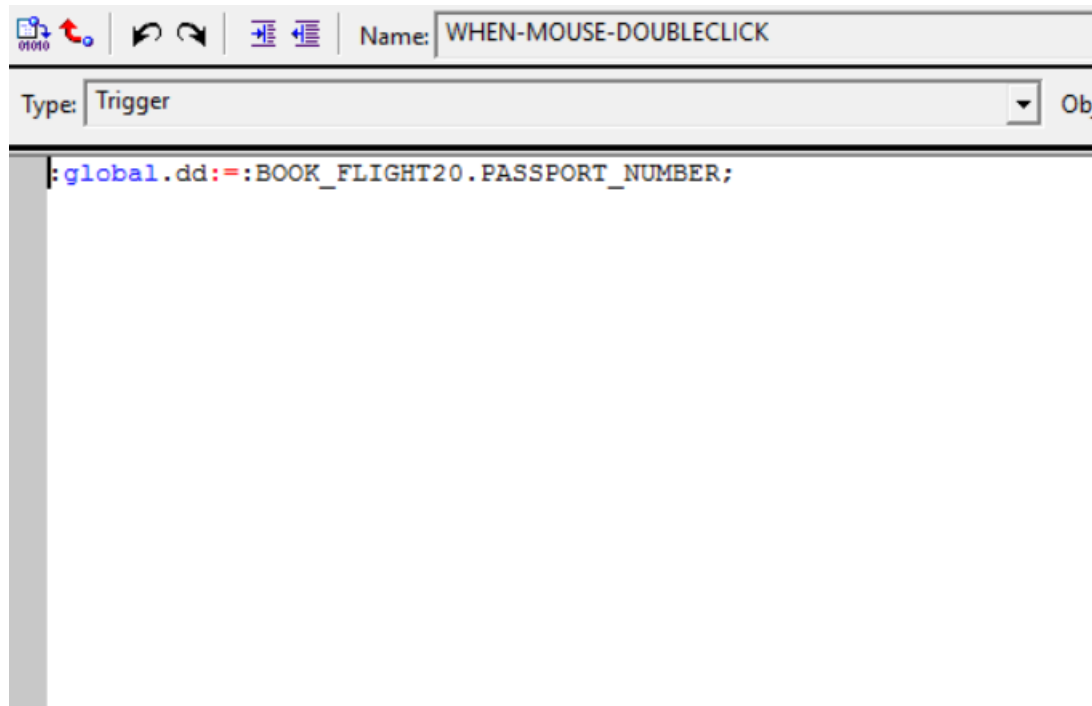
## 6- ICONS



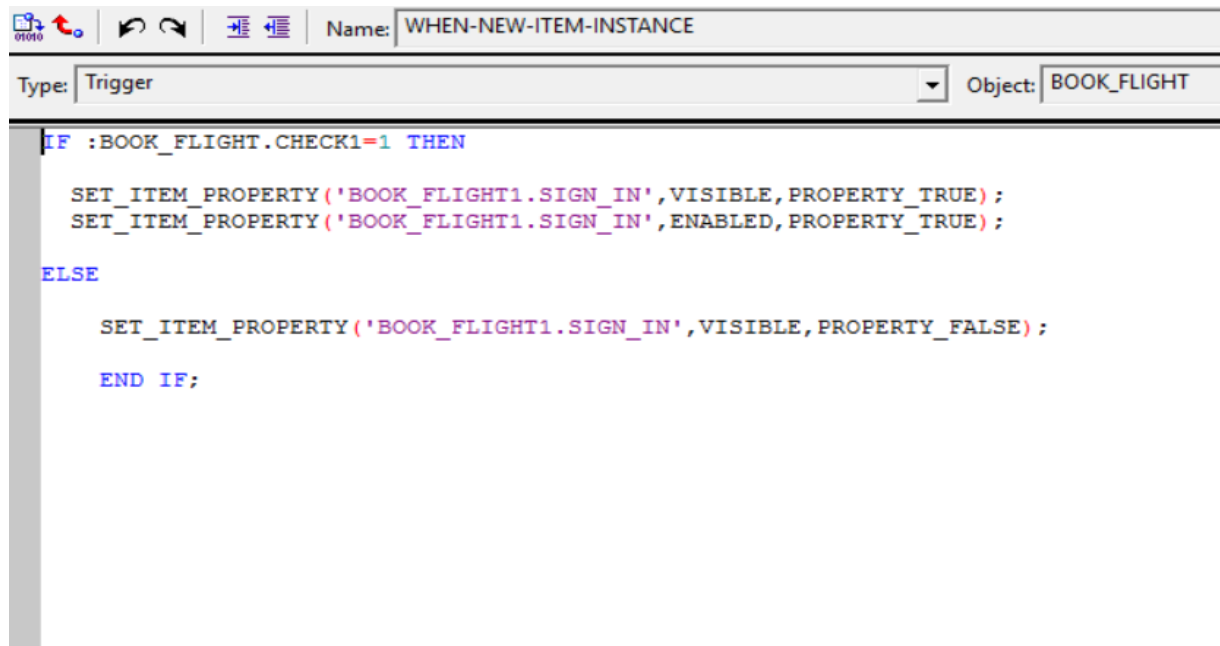
## 7- Discount on The Total Price

```
01010  [Icons] [Undo] [Redo] [Zoom In] [Zoom Out] Name: WHEN-CHECKBOX-CHANGED
Type: Trigger Object:
IF :BOOK_FLIGHT20.CHECK2 =1 THEN
:BOOK_FLIGHT20.TOTAL_PRICE := :BOOK_FLIGHT20.TOTAL_PRICE * 85/100;
COMMIT;
ELSE
:BOOK_FLIGHT20.TOTAL_PRICE := :BOOK_FLIGHT20.TOTAL_PRICE;
END IF;
```

## 8- Global variable



## 9- Disabling or enabling a button depending on the checkbox



## SCREENSHOTS OF THE PROGRAM AND REPORT



**IF YOU ARE ALFURSAN MEMBER  
THEN YOU CAN HAVE 20% OFF**

**H&B AIRLINES** 

Passport Number

**SHOW FLIGHT**

**DEPARTURE**

FROM  TO  Departure Date

**NEXT**

**RETURN**

FROM  TO  Return Date

PRESS HERE IF HAVE  
ALFURSAN MEMBERSHIP  
CHECK HERE:-

Total Price

☒ YES, I HAVE ALFURSAN

**SIGN IN**

**H&B AIRLINES** 

**ALFURSAN LOGIN PAGE**

**USER NAME**

**PASSWORD**

**BACK**

**LOGIN**

H&B AIRLINES Passport Number 

SHOW FLIGHT

## DEPARTURE

FROM  TO  Departure Date 

NEXT

## RETURN

FROM  TO  Return Date ☐ ALFURSAN MEMBERTotal Price H&B AIRLINES 

## INFORMATION

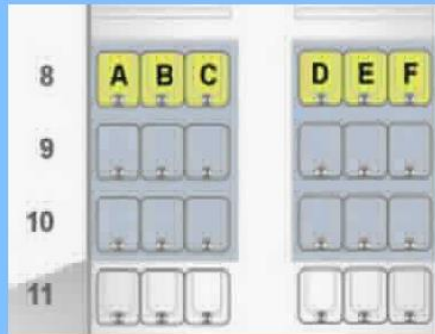
Name   
Passport Number   
Email   
Phone Number   
Gender ☒ MALE  
Birth Date

## Payment Details

Card Number  ☐  ☐   
Cardholder's Name   
Security Code  Expiry Date

NEXT

## SEAT RESERVATION



Seat

**NEXT****H&B AIRLINES** **Thank You For Choosing H&B AIRLINES**

Enjoy Your Flight

**Print Receipt****Print e-Ticket****EXIT**


Reports Builder - [receipt: Report Editor - Paper Design]

File Edit View Insert Format Layout Program Tools تعليمات نافذة

Page: 1

Courier New

٠٥٢١٩ - ٠٧/٢٥/١٩



Name	AYMEN	Card Number	١٢
Total Price	Security Code	Expiry Date Month	Expiry Date Year
١٣٧٠	١٢	٥	٢٠٢٢
Card Type			
mastercard			

تنشيط Windows


File Edit View Insert Format Layout Program Tools تعليمات نافذة

TICKETS: Report Editor - Paper Design

Page: 1

Courier New

٠٥٢١٩ - ٠٧/٢٥/١٩



Name	NASSER	Passport Number	C1200				
Phone Number	٥٨-٤٦٩٥-٩						
Seat	Total Price	Return Date	TO	FROM	Departure Date	TO	FROM
١٠F	١٤٠٠	٠٥/٠٨/١٩	JEDDAH	RIYADH	٢٠/٠٧/١٩	RIYADH	JEDDAH

١x 1.05 0.00



**Conclusion:**

As a conclusion using technology in a good way especially when it is related to customer and meeting their needs. Sql developer program was used to accomplish this application. Easing people's lives and providing good and tangible services is a very good way to make money and make a change in the society. H&B airlines company one day will be one of the most famous and profitable airlines company in the middle east inshallah!

## REFERENCES

- [1] SQL Server—Pricing and Licensing | Microsoft. Accessed JULY 24, 2019. <https://www.microsoft.com/en-us/sql-server/sql-server-2017-pricing>.
- [2 ] How Much Does It Cost to Hire a SQL Developer? Accessed JULY 24, 2019. <https://www.upwork.com/hiring/development/cost-to-hire-sql-developer/>.