INTRODUCTIONS

NAMES: ROLL NO: SECTION:

GL: QASIM- BCSM-F16-396 5D

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Flight Reservation System

1. Problem statement
2. User functional and non user function requirements
3. Conversion into function
4. Use case diagram

Problem statement

Write down a program for the flight management system which reserve the tickets for the passengers of air line according to their requirements in a case like this we make an online system which will be more efficient and is friendly for the customer in this system user can book their seats in advance way without going anywhere check flight status and make membership for the further use tie staff shell be responsible for the maintains of the team it will also be responsible if a customer has a seat which is reserve by the name of another passenger it will also have a detail of the seats that are already reserve or a seat without passenger it will provide the status of plan to customer take off time and the time the plan will land The system is very time consuming and lazy. With the advent of latest technology if we do not update our system then

our business result in losses gradually with time. The technical systems contains the tools of latest

trend i.e. computers printers, fax, Internet etc. The systems with this technology are very fast,

accurate, user-friendly and reliable.

A few factors that directs us to develop a new system are given below -:

1) Faster System

2) Accuracy

3) Reliability

4) Informative

5) Reservations and cancellations from any where to any place

when we enter data or passenger detail then the system must word fast if the system do not work good then our customer will disturb and he will not come again to our site so we face a huge lost in that case so that our system must be faster to do this we build more server for our website .the second step is our system must be accurate its mean that it do all the task perfectly at less time .for example if want to reserve the customer seat then our system serve the right seat .The system must be reliable it work long at good condition if the system will not reliable we face difficulties. If the customer want to reserve a seat then our system take all the detail of the customer and eg name, id, cnic, phone no, address, passport no, country where he want to go , status then the system must reserve a seat for customer which is free and if the customer want to cancel his seat then the system give him option that he can cancel his seat from every where of the world .A computer reservation system is used for the reservations of a particular airline and interacts with a global distribution system that supports travel agencies and other distribution channels when making reservations for most of the major airlines in the world. a single system. The airline reservation systems include airline schedules, fare rates, passenger bookings and ticket records. The second type of direct distribution channel is consumers who use the Internet or mobile applications to make their own reservations.

**Detailed description:---**

In this program you will require to make structure with name “Reservation” and following are the data members

* Passenger name
* Passenger address
* Date of flight
* destination to travel
* Flight no
* Seat no

Online ticket reservation application is to maintain flight details in which flight you want to travel what is the time of flight and what is the no of flight

Flight status reservation canceled process the flight status which maintain the flight id flight name arrival time departure time it will contains the information about the type of seat business class or economic class

User functional requirements

**1.Multiple accounts for the user :--**

1.1 If a user is using the program he should have some rights and choice this will be the first interaction of user with the program so it should be effective so the are choices for the user

User is using the using the program as a guest

User is using the using the program as a register user

User wants to check the availability of the tickets

User can buy the tickets or he can block these

* + 1. uses who are not traveling for the first time program will gave them an user id and password this will give the user a access to the database user can store his or her personal information in it which are relating to the their traveling as register user can see the availability of tickets and they can buy it or cancelled it
    2. on the other hand a user who is not register in the accounts will shown 2 options either they can register their self or they can enter in the program as a guest but if they are using the program as a guest they can only see the tickets or they can see the availability they cannot buy the tickets on the other hand a register user can use the program properly he can not only check the availability but he could even buy and block the tickets

**2. creation of a profile**

2.1 the system shall ask the user to register for the sake of buy a ticket check the availability of the tickets it will ask the user to complete the following in information

A user id that has given by the system to the user

First name

Last name

Sex

Credit card number

**3.checking the availability**

3.1After logging of a user want to buy a ticket system should ask for the following details

Origen city

Destination city

Now for the next process system will show record of the database to user relating to the user demands of there are two cities of same name user has entered then system will show the both names to user to select one name if the service for the user’s destination is not available from the orgin city than program will suggest the nearest location with the service user wants after user gets their relating services now he can access the flight schedule and system will also show the user the nearest rout for their location

3.2after all this process now system will ask for the following details

Class

Departure date

Number of adults passenger

Number of kids passenger

Number of old passenger

Class will receive the information of the type of travel if it is a business class economical class

And number of and type of passengers will notify the staff to provide proper equipments to the passengers

After all this information now system will check which plan has all the possible space for the given requirements user has gave

**4.** **making the reservation booking and confirmation**

4.1After giving all this information id the user is using the program or they are a resister users using the program as guest can view the tickets if they want to buy the ticket they need to login and use the program as a register user

After the login process of user and the registration process if the user want to buy the tickets he can having all the information now program will update the data base for the reserving seats and for the tickets and for the using equipments

If they want to block the ticket program will issue a command in database for removing the information of user from the ticket

**5. Confirm Ticket**

5.1 A user who is required to either confirm the ticket before two weeks of the departure date or the ticket stands cancelled.

To let the user confirm a ticket, the system shall access DB and removes the check mark, which so far represented a blocked seat. The seat is now confirmed and reserved for the user..

**6. Reschedule Ticket**

6.1 The system shall present the user with an option to re-schedule his travel party’s trip. In order to do this the system first logs on It will not allow a user to reschedule a blocked ticket but only a confirmed ticket.

The system shall now ask the user to select new dates from the calendar-menu.

In case, there are no available tickets for the dates entered, it displays a suitable message informing him that rescheduling to that date is not possible.

In case there are tickets available, the system asks the user to select the flight The system accesses DB and decrements the number of available seats on the flight The system generates a new confirmation number and displays it to the user.

**7 .Cancellation**

7.1The system shall also give the user an option to cancel a confirmed ticket or a blocked ticket .In the former case, i.e., for a confirmed ticket, it accesses DB and presents the details of the trip

It then lists the applicable rules for cancellation of tickets and depending on the system date and the departure date if the user cancels the ticket.

After the user cancels the ticket It accesses DB and updates it by incrementing the number of available seats on that flight by the number of travelers in the user

**8. Update Profile**

8.1The system shall enable the user to update his profile at any time. Changes can be made in fields including but not limited to address

**9. View Ticket Status**

9.1The system shall allow a user to view all information about his trip. After logging him on, it asks for his blocking number or his confirmation number. It accesses DB and retrieves the details of the trip and presents them to the user in a convenient format including any last minute changes to the flight timings

Non functional requirements with

conversion into functional

**User friendly**

Menu increase into category

**Responsive**

Screen adjustment

**Quick response**

Increase memory

**Stand by**

Increase the members f the server if one is down it should convert to the other server

System requirements

**Login**

Passenger seats

Type of seats passenger want it can be of business class and economical class

Economy

User can travel in economical class by selecting it form the program will show you the details and money package of this class tickets

Business

User can travel in business class by selecting it form the program will show you the details and money package of this class tickets

Passenger introduction

Name

The length of the name will be in 3 to 5 minimum and 20 maximum there are n double spaces allow in the name or any kind of characters

Id

Program will provide the id to each user that is register in the program as register user this id would include(special num-character-word)

**Flight status**

Take off

User can see the status of flight program it will show the user the take off time it will include the time date and destination and take off point location

Landed

User can see the status of flight program it will show the user the time flight will land it will include the time date and destination

**Advance booking**

user has a full right to book the ticket as before as he wants before the flight program will provide the this control to user

available seat

program will show the DB to user for the available seats if user want to travel after giving the desiring locations program will check if there is any seats available in the plan user want to travel

booked seat

after view if there is any seats available according to the requirement of the user system will complete the information form the user and blocked the flight

of there is not a available seat program will show a massage to user that seats are not available and give a nearest location to user for the requires destination

**payment**

cash

if user is paying cash for the sake of generating the bill system should take a complete record of user money amount left money total money status of ticket like amounts of tickets class of ticket and the time of receiving the money

card

if customer is paying via card so there would be to options either user can pay the money via swiping the card or by online depositing the money for this system should take the card name honor name account number account type name of the bank the card is from and verification of the user i.e name address cnic and pin code of the card

**Time**

Schedule

For the schedule program will show to the passenger or to the staff program need the take off time lading time if flight is delayed or cancel

No of diagram

* use case diagram(1.0)
* use case diagram(2.0)
* test case
* context diagram
* level 0 dfd
* level 1 dfd
* domain model
* fully address use case
* system sequence diagram
* operation contract
* class diagram
* activity diagram

Use case diagrams

AIRLINE RESERVATION SYSTEM 1.0

Admin r

Userr

AIRLINE RESERVATION SYSTEM 2.0

Admin r

Userr

**Use case 2.0 for user only**

Userr

User case for admin

Test case

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **TC** | **Description** | **case** | **Login** | **Password** | **Actual result** | **Expected result** | **Status** |
| **T.C#1.0** | Login should be e-mail,  Alphanumeric | 1)  2) | [Malik5@gmail.com](mailto:Malik5@gmail.com)  Malikgmail.com | Valid  Valid | Valid  Non-valid | Valid  Valid | Pass  Fail |
| **T.C#1.1** | Password should be more than eight characters or numbers, alphanumeric | 1)  2) | Valid  Valid | 1234asdf  123asd | Valid  Non-valid | Valid  valid | Pass  Fail |

Use case testing

**Case 1.0**

Case 1:

User enter correct e-mail address therefore, actual and expected results are valid and give status pass

\Case 2:

User enter incorrect e-mail address therefore, actual result is non-valid and expected result is valid and give status fail.

Case 1.1

Case 1:

User enter correct e-mail address therefore, actual and expected results are valid and give status pass

Case 2:

User enter incorrect e-mail address therefore, actual result is non-valid and expected result is valid and give status fail.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TC** | **Description** | **Case** | **User registration** | **Name** | **CNIC** | **Actual result** | **Expected result** | **Status** |
| T.C#2.0 | Click button of (registration), | 1)  2) | Clicked button  Wrong command | Valid  Valid | Valid  Valid | Valid  Non-valid | Valid  Valid | Pass  Fail |
| T.C#2.1 | Enter name, min=3 & max=20,Alpha | 1)  2) | Valid  Valid | Ali  Al | Valid  Valid | Valid  Non-valid | Valid  Valid | Pass  Fail |
| T.C#2.2 | Enter CNIC in given format  \_\_\_\_\_-\_\_\_\_\_\_\_-\_  Numeric. | 1)  2) | Valid  Valid | valid  Valid | 35201-1234567-8  35201-12345-1 | Valid  Non-Valid | Valid  Valid | Pass  Fail |

Case 2.0

Case 1:

User enter registration command due to which further process works properly, actual and expected results are valid and give status pass

Case 2:

User enter incorrect command therefore, actual result is non-valid and expected result is valid and give status fail.

Case 2.1

Case 1:

User enter correct name within the words limit therefore, actual and expected results are valid and give status pass

Case 2:

User enter incorrect name which is less than given limit therefore, actual result is non-valid and expected result is valid and give status fail.

Case 2.2

Case 1:

User enter correct CNIC with specific format therefore, actual and expected results are valid and give status pass

Case 2:

User enter incorrect CNIC which is not accord to given format therefore, actual result is non-valid and expected result is valid and give status fail.

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **TC** | **Description** | **Case** | **Flight status** | **Booking** | **Payment** | **Actual result** | **Expected result** | **Status** |
| **T.C#3.0** | Click the status button | 1)  2) | Click command  Wrong selection | Valid  Valid | Valid  Valid | Valid  Non-valid | Valid  Valid | Pass  Fail |
| **T.C#3.1** | Select the seat of your own choice ,  optional | 1)  2) | Valid  Valid | Select seat  Wrong selected | Valid  Valid | Valid  Non-valid | Valid  Valid | Pass  Fail |
| **T.C#3.2** | Select option of payment method ,card ,online | 1)  2) | Valid  Valid | Valid  Valid | Select card  Wrong selection | Valid  Non-valid | Valid  Valid | Pass  Fail |

Case 3.0

Case 1:

User click the button of flight status and take view of landed and take off of flights therefore, actual and expected results are valid and give status pass

Case 2:

User give wrong command therefore, actual result is non-valid and expected result is valid and give status fail.

Case 3.1

Case 1:

User book a seat from given choice and follow a proper way therefore, actual and expected results are valid and give status pass

Case 2:

User didn’t book seat therefore, actual result is non-valid and expected result is valid and give status fail.

Case 3.2

Case 1:

User pay their payment through card which is given option therefore, actual and expected results are valid and give status pass

Case 2:

User didn’t choice any method of payment therefore, actual result is non-valid and expected result is valid and give status fail.

Fully dressed use case

**(a)**

**Use case name:**

Login

**Scope:**

Online flight reservation system

**Level:**

User enter the ID and password for login.

**Actor:**

Customer /Admin /Staff

Stakeholder:

**Customer:**

need to book seats online

Pre-condition:

Customer /Admin/Staff must have to login for any process into reservation system.

Main success scenario:

* **Customer:**

Enter the correct ID and password as well as press the login button. Then it will enter into the main menu interface of flight reservation system.

* **Admin:**

Enter the correct ID and password as well as press the login button. Then it will enter into the main menu interface of flight reservation system.

* **Staff:**

Enter the correct ID and password as well as press the login button. Then it will enter into the main Menu interface of flight reservation system.

Failure case:

* **Customer:**

Enter the wrong ID and password then it will iterate the same process with the message of ID and password not exist.

* **Admin:**

Enter the wrong ID and password then it will iterate the same process with the message of ID and password not exist.

* **Staff:**

Enter the wrong ID and password then it will iterate the same process with the message of ID and password not exist.

**Data variation:**

None.

**(b)**

**Use case name:**

Make reservation

**Scope:**

Online reserve seat for flight.

**Level:**

Checking available seats and reserving seats.

**Actor:**

Customer

**Stakeholder:**

Customer:

Need to book seats online

**Pre-condition:**

Customer must have to select destination and then select seat from available seats with their own type of class.

**Main success scenario:**

* Customer enter into menu of “Make reservation”.
* Select the destination where he wants to go.
* Select their own type of class (Business class, Middle class, and Economy class).
* After selecting the class chose the seat from the available seats (where the reserved seats are not shown).
* Then submit the information from submit button.
* At next page the message will show that: “You have reserved the seat”.

**Failure case:**

* Customer have not select any type of seat due to which there is no seat reserve.

**Data variation:**

None.

**(c)**

**Use case name:**

Modify reservation

**Scope:**

Online flight reservation system

**Level:**

Customer modify their reserved seat.

**Actor:**

Customer

**Stakeholder:**

Customer: need to modify their reserved seat online.

**Pre-condition:**

Customer must have reserved any type of seat.

**Main success scenario:**

* Customer enter into menu of “Modify reservation”.
* He can change the selected destination where he wants to go.
* Modify their selected class (Business class, Middle class, and Economy class).
* Also modify selection of seat from the available seats (where the reserved seats are not shown).
* Then submit the information from submit button.
* At next page the message will show that: “You have modified into reserving the seat”.

**Failure case:**

* Customer have not change into any Manu.

**Data variation:**

None.

**(d)**

**Use case name:**

Pay payment

**Scope:**

Online flight reservation system

**Level:**

Customer enter the payment method.

**Actor:**

Customer

Stakeholder

**Customer:**

payment for reserving seat confirmed.

**Pre-condition:**

Customer must have to select the seat and select the payment method.

**Main success scenario:**

* Customer enter into menu of “Payment”.
* Select their type of payment of which he want to pay.
* Customer can pay by credit card and cheques as well as he also can by cash in present case.
* Done the payment method option from the above.
* After it the screen will show message payment as done successfully.

**Failure case:**

* User didn’t select any type of paymentmethod. In this seat would not be confirmed.

**Data variation:**

None.

**(E)**

Use case name:

Search Flight

**Scope:**

Online flight reservation system

**Level:**

Customer search flight available method.

**Actor:**

Customer

Stakeholder

Customer: search flight for reserving seat.

**Pre-condition:**

Customer must have tosearch the flightand select the seat.

**Main success scenario:**

* Customer enter into menu of “flight”.
* Select their type of flight of which he want to fly.
* Customer can select the time of the flight.
* Done the flight option from the above.

**Failure case:**

* User didn’t select the timing of flight method. In this flight would not be confirmed.

**Data variation:**

None.

**(F)**

**Use case name:**

Select class

**Scope:**

Online flight reservation system

**Level:**

Customer select the class which he want to travel (business class, economic class).

**Actor:**

Customer

**Stakeholder:**

**Customer:** select the class online.

**Pre-condition:**

Customer can select business or economic class. .

**Main success scenario:**

* Customer enter into menu of “Select Class”.
* He can select the class where he wants to reserve seat.
* Modify their selected class (Business class, Middle class, and Economy class).
* Also modify selection of seat from the available seats.
* Then submit the information from submit button.

Failure case:

* Customer select any class and the class will not selected.

Data variation:

None.

**(G)**

Use case name:

Edit customer info

Scope:

Online flight reservation system

Level:

Employ modify the customer info.

Actor:

Employ

Stakeholder:

Employ: need to modify customer info.

Pre-condition:

Employ can modify any customer info.

Main success scenario:

* Employ enter into menu of “Modify Customer info”.
* He can change the selected customer info.
* Modify the selected customer info and detail.
* Also modify selection of seat from the available seats (where the reserved seats are not shown).
* Then submit the information from submit button.
* At next page the message will show that: “You have modified the customer info”.

Failure case:

* Employare select the modify customer info and the info will not modify.

Data variation:

None.

**(H)**

Use case name:

Add / Delete flight

Scope:

Online flight reservation system

Level:

Admin modify their flight info.

Actor:

Admin

Stakeholder:

Admin: need to modify the flight info.

Pre-condition:

Admin can select and delete the flight.

Main success scenario:

* Admin enter into menu of “Add / Delete flight”.
* He can change the selected destination where he wants to go.
* Modify their selected flight (time of the flight).
* He can also delete and add flight.
* Then submit the information from submit button.
* At next page the message will show that: “You have modified the flight info”.

Failure case:

* Admin change the flight info and info will not be changed.

Data variation:

None.

**(I)**

Use case name:

Log out

Scope:

Online flight reservation system

Level:

User click log out button for log out.

Actor:

Customer /Admin /Staff

Stakeholder:

Customer /Admin /Staff

Pre-condition:

Customer /Admin/Staff must have to log out.

Main success scenario:

* Customer /Admin/Staff done his work and want to log out the sight.
* Click the button on log out and the user will be log out from the sight.

Failure case:

* Customer /Admin/Staff done his work and want to log out the sight.
* Click the log out button but user will not be log out.

Data variation:

None.

System sequence Diagram

1. Login

;Login

User

Login(Enter id, Enter password)

Login successful

1. Make reservation

Make ;reservationnnn nnn

User

Reservation (Enter id, pass)

Select seat

Reservation successful

3: Payment

;Payment

User

Payment (c. card, cheque, cash)

Payment successful

1. Modify reservation ((if user want to change))

User

Modify ;reservation

Enter (id, seat no.)

Enter new seat no.

Changes made successfully

1. Add / delete reservation.

Add/delete

;Reservation

User

Reservation (Enter id, pass)

Add / Delete reservation

Reservation Add / Delete successfully

1. Cancel Reservation

Cancel ;reservation

User

Reservation (Enter id, pass)

Cancelled the reservation

Reservation canceled

1. Logout

;Log out

User

Log out (select button)

Log out

7: Edit customer info

Edit ;customer info

User

Edit info(customer id, seat no)

Info change successfully

USER

ADMIN

PAYMENT

FLIGHT

RESERVATION

1 MAKE RESERVATION

2 ENTER FIGHT DETAILS

3GET MATCHING FLIGHT

4 SELECT FLIGHT

4.1 SHOW FLIGHT DETAIL

5 ENTER USER DETAIL

5.1 SET CUSTOMER DETAILS

5.2 SET PAYMENT INFORMATION

6 CHANGE SEAT

6.1 GET SEAT

6.1.1 GET SEAT STATUS

6.1.2 SHOW SEAT DETAILS

7 SELECT SEAT

7.1 ASSIGN SEAT

7.1.1ASSIGN SEAT status

7.1.2 SEAT CHANGED

8 OBTAIN PAYMENT

8.1 APPROVED8.2DISPLAY INFORMATION

Operation contract

1. **LOGIN ( id, pass)**

Operation : login ( id , pass);

Cross References :Use case : login

(id,pass)

Preconditions :Admin must be registered user.

Post Conditions :

Instance Creation :A user \_login (AD)was created.

Association :None

Initialization : Ad.status was set to active.

1. Make Reservation (id , pass)

Operation : Make Reservation (id , pass );

Cross References :Use case : Make Reservation (id , pass );

Preconditions :should be visa holder.

Post Conditions :

Instance Creation :A (m-resv) was created.

Association :A user was Associated with payment.

Initialization :m-resv.status was set to active.

1. **Payment (c.card, cheque, cash)**

Operation :payment **(c.card, cheque, cash) ;**

Cross References :Use case : payment (c.card, cheque, cash)

Preconditions :Select way to pay

Post Conditions :seat reserved.

Instance Creation : payment (pay) was created.

Association :PAY was associated with reservation.

Initialization :PAY.status set to activate.

1. **Modify Reservation( id , seat no , new seat no )**

Operation :Modify Reservation( id , seat no , new seat no ) ;

Cross References : Use case : Modify Reservation .

Preconditions :reserved seats user’s only.

Post Conditions :seats updated

Instance Creation :A Modify Reservation (m-resv) was created.

Association :M\_RESV was associated with reservation .

Initialization :M\_RESV .status was set to active.

1. **Add / delete reservation (id ,pass)**

Operation :Add / delete reservation(id ,pass) .

Cross References : Use Case : **Add / delete reservation .**

Preconditions :reserved seats.

Post Conditions :data updated.

Instance Creation :(Ad/dl) was created.

Association :Ad/Dl was associated with reservation.

Initialization :Ad/Dl.status was set to active.

1. **Cancel Reservation (id , pass )**

Operation :Cancel Reservation (id , pass );

Cross References :Use Case:**Cancel reservation (id , pass )**

Preconditions :reserved seats only.

Post Conditions :record updated .

Instance Creation :Cancel reservation (cncl-rev) was created.

Association :Cncl-Rev was associated with reservation.

Initialization :Cncl\_Rev was set to active.

**iv.** Logout (id , pass )

Operation :Logout (id , pass );

Cross References :use case:Logout (id , pass )

Preconditions :logedin user only.

Post Conditions :logoff user.

Instance Creation :(lg\_out) was created.

Association :Lg\_out was associated with login.

Initialization :Lg\_out was set to active.

**iiv.** Remove Customer info (user\_id , seat\_no)

Operation :**Remove Customer info (user\_id , seat\_no);**

Cross References :Use Case:Remove Customer info (user\_id , seat\_no)

Preconditions :After trip is done.

Post Conditions :Data removed.

Instance Creation :(Rmv\_usr) was created.

Association :Rmv\_user was associated with logout .

Initialization :Rmv\_usr was set to active.

Activity diagram

Submit user id and password

[Invalid]

[Valid]

Make Reservation

Select Class

Destination

Source

Search a flight

[Modify reservation/make changes] cancellation

Logout

Payment