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Subject - Internet Technology Lab

Assignment No. :- **03**

Problem Statement

Assignment 3: Airline travel site “Travel Thru Air”

Submission due:

Use Case 1: November 16-18, 2020

Both use cases : November 23-25, 2020

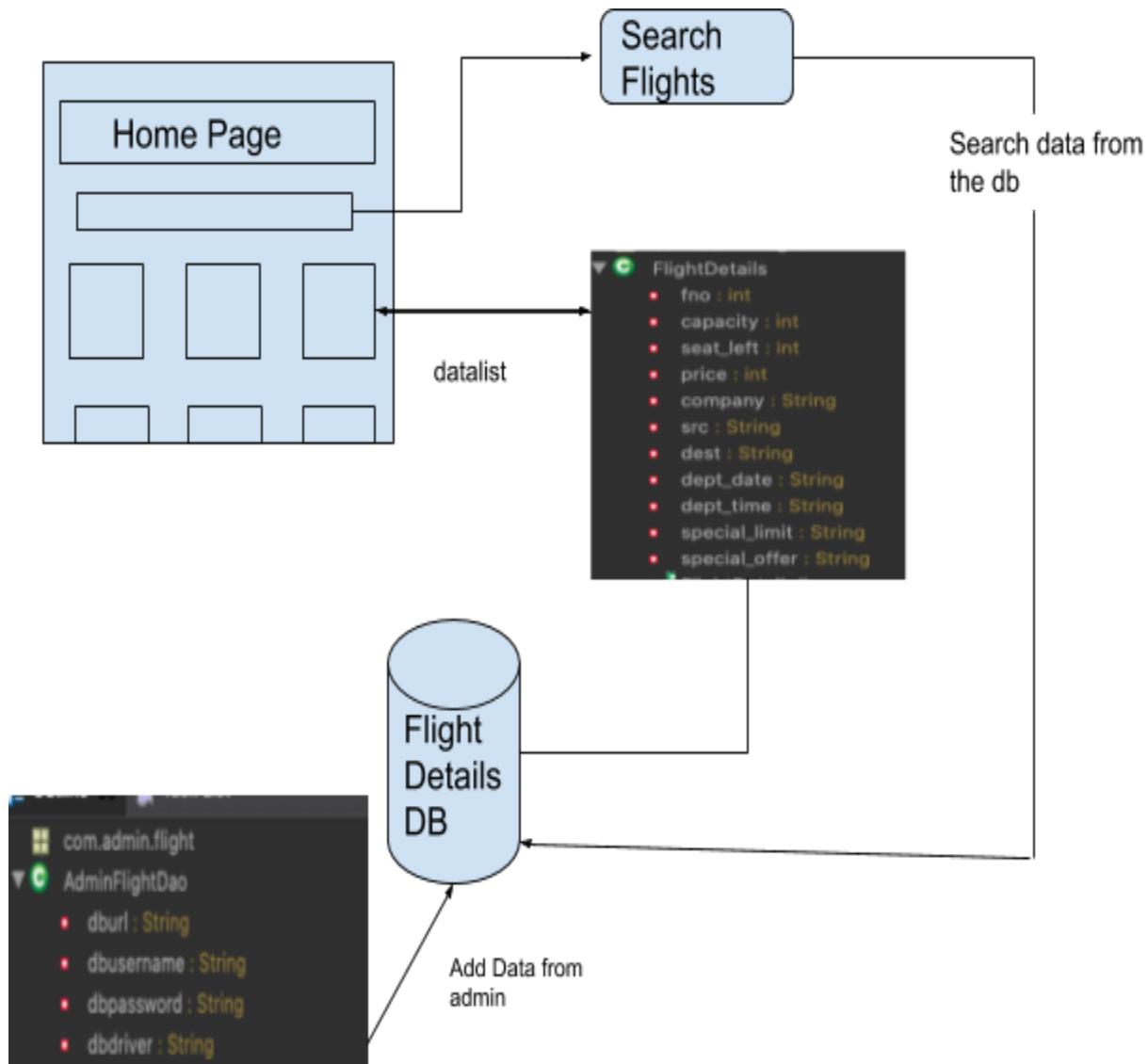
Implement a web application for “Travel Thru Air” using servlets to support the following two use cases :-

1. A list of current special deals must appear on the home page. Each special deal must display the departure city, the arrival city, and the cost. These special deals are set up by the marketing department and change during the day, so it can't be static. Special deals are only good for a limited amount of time.
2. A user may search for flights, given a departure city, time and an arrival city. The results must display the departure city, the arrival city, the total cost, and how many legs the flight will have.
State and explain why and where you have used design patterns.

Solution Approach:-

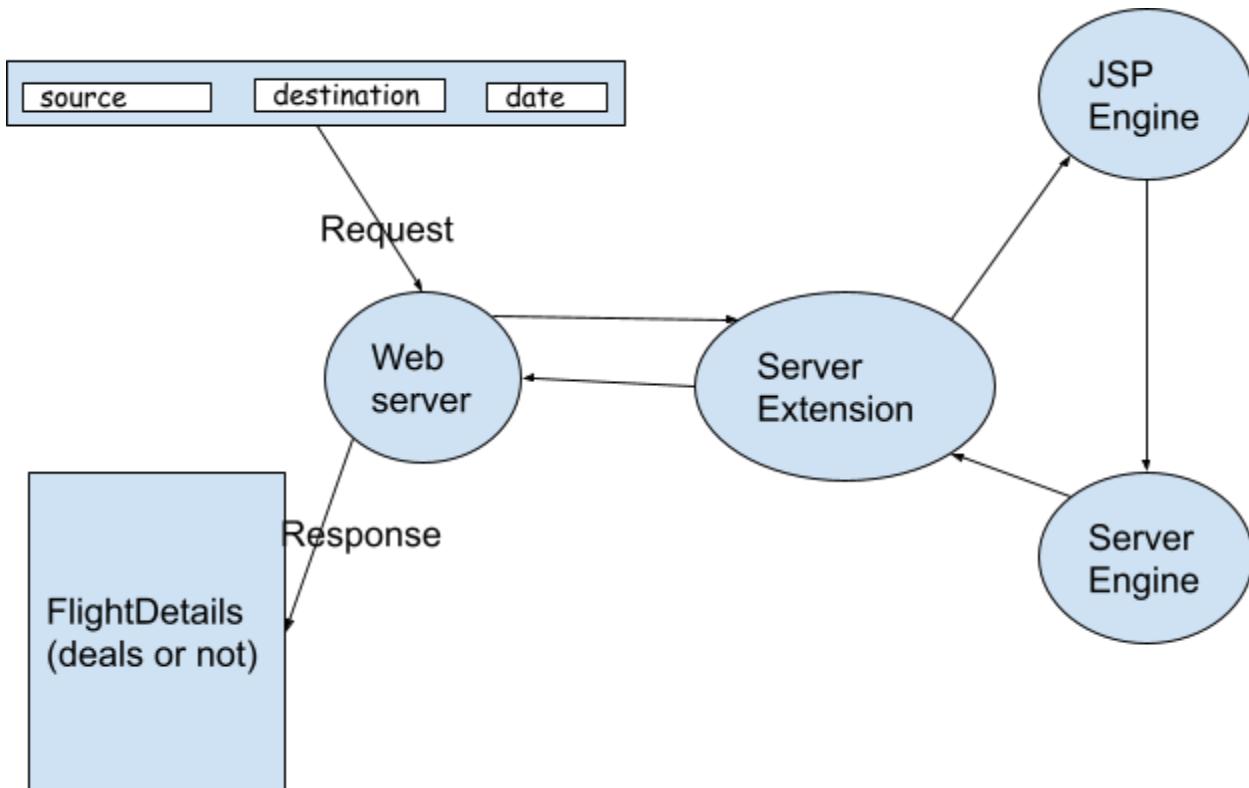
The aim of this assignment is to provide a simple MVC structure to organize the web application, so called “**travel_thru_air**”.

Design diagram of the problem :-



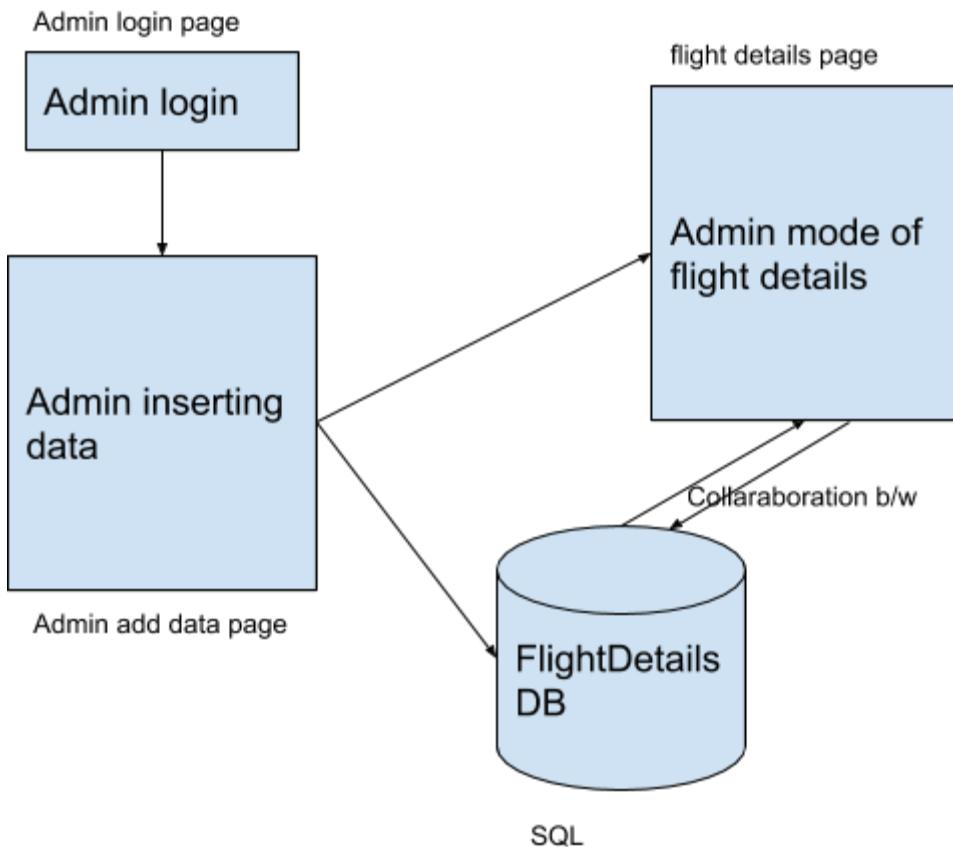
When the guests/clients open the web application, at first, there will be a list of the data which contains the details of the flight as shown '**FlightDetails**' as per the availability of special deals. It is done through a database, here done in MySQL Workbench that connects through jdbc in the servlet.

For searching the flights in terms of source, destination and date for showing the list of details even special deals may not have.



Searchflights is done in the form of a JSP page. When it is called, it will be compiled by the JSP engine into a Java servlet. At this moment, the servlet is handled by the servlet engine, just like any other servlet. The servlet engine then loads the servlet class using a class loader and then executes it to create a dynamic website to be sent to the browser. The servlet creates any necessary object, and writes any object as a string to an output stream to the browser.

In this mode, JSP pages are used for the presentation layer, and servlets for processing tasks. The servlet acts as a controller, which is responsible for processing requests and creating any beans needed by the JSP page. The controller is also responsible for deciding which JSP page to forward the request. The JSP page retrieves objects created by the servlet and extracts dynamic content for insertion within a template. Fig. is shown below,



The logic of this is:- when the admin logs in, then the browser redirects to another browser where admin can insert the new data whatever necessary is required for flight details. Once it is done it will again redirect to the another web application where admin can see the list of data. If there is any mistake while adding the data, then it will not redirect rather the page will show a message that there is an error with the help session management while landing the same page. However, while before going to the next web application, servlet does all the background processing tasks like inserting the data in SQL and then gives response to the other website in the form of dynamic web content.

Another interesting thing is the admin can also delete the data and it works while collaborating with SQL and servlet.

Salient Features:-

1. The list of flight details are viewed in JSP with html/css design and the flight data passed from the controller.
2. When a client request is made, the service method is called and passed a request and response object. The servlet then determines whether the request is a GET or POST operation. It then calls one of the following methods: doGet or doPost. The doGet method is called if the request is GET and doPost is called if the request is POST. Both doGet and doPost take request (HttpServletRequest) and response (HttpServletResponse).
3. Redirecting the next website works with the help of **sendRedirect()** method or **RequestDispatcher**.
4. An admin creates the model which is responsible for holding and deleting the data, that collaborates with MySQL with the help of database api called jdbc.
5. A servlet controller helps to fetch data from DB, then processes the other logic and passes the data to view in web applications.

Input/Output:-

1. MySQL Script in MySQL workbench

```
CREATE DATABASE IF NOT EXISTS `firstschemas` ;  
USE `firstschemas`;  
-- Database: firstschemas  
  
--  
-- Table structure for table `admin`  
  
--  
DROP TABLE IF EXISTS `admin`;  
  
CREATE TABLE `admin` (
```

```
`eid` varchar(30) NOT NULL,  
 `ecode` varchar(45) DEFAULT NULL,  
 PRIMARY KEY (`eid`)  
);  
  
--  
-- Table structure for table `flightAdd`  
--  
DROP TABLE IF EXISTS `flightAdd`;  
  
CREATE TABLE `flightAdd` (  
 `company` varchar(35) DEFAULT NULL,  
 `fno` int NOT NULL,  
 `src` varchar(45) DEFAULT NULL,  
 `dest` varchar(45) DEFAULT NULL,  
 `dept_date` varchar(35) DEFAULT NULL,  
 `dept_time` varchar(35) DEFAULT NULL,  
 `capacity` int DEFAULT NULL,  
 `seat_left` int DEFAULT NULL,  
 `price` int DEFAULT NULL,  
 `special_offer` varchar(350) DEFAULT NULL,  
 `special_limit` varchar(35) DEFAULT NULL,  
 PRIMARY KEY (`fno`)  
);
```

2. Guest Mode

- a. When guest open website

Website :- <http://localhost:8081/flightServlet/home.jsp>

The screenshot shows the homepage of the AirTravel website. At the top, there is a banner with the text "Safe Travel" and a subtext "We are ensured that you will be safe with us." Below the banner, there is a search bar titled "Search Flights!" with fields for "Journey starts" (Kolkata), "Journey Ends" (Mumbai), and "Date". To the right of the search bar is a paper airplane icon with a smiley face. Below the search bar, there is a section titled "SPECIAL DEALS" featuring four flight options from different airlines:

- SpiceJet**: Kolkata to Delhi. Flight No.: 1005. Departure Date: 2020-12-16. Departure Time: 02:16. Capacity: 15000. MRP: ₹ 4500. Special Offer: winter. Offer Validity: 2020-12-16. Book button.
- airbnb**: Bangalore to Kolkata. Flight No.: 1205. Departure Date: 2020-12-31. Departure Time: 16:05. Capacity: 34500. MRP: ₹ 4500. Special Offer: Diwali. Offer Validity: 2020-12-16. Book button.
- AirAsia**: Punjab to Gujarat. Flight No.: 1500. Departure Date: 2021-01-14. Departure Time: 15:29. Capacity: 15000. MRP: ₹ 2500. Special Offer: New Year. Offer Validity: 2021-01-02. Book button.
- kingfisher**: Kolkata to Kochi. Flight No.: 9001. Departure Date: 2021-01-19. Departure Time: 00:45. Capacity: 12900. MRP: ₹ 23000. Special Offer: winter. Offer Validity: 2020-12-30. Book button.

At the bottom of the page, there is a footer with the text "Welcome to AirTravel", "Let's explore the world!", social media icons for Twitter, Facebook, Instagram, and Email, and copyright information "© 2020 Dibyendu" and "Made with ❤️ Coffee".

- b. When guest search in terms of source, destination and date





Meet Different People

Join with them and have fun!

Search Flights !

Journey starts

Journey Ends

Date

Kolkata

Mumbai

Date

 SEARCH

ALL DEALS



airbnb

Flight No. :- 1205

Source :- bangalore

Destination :- Kolkata

Departure Date :- 2020-12-31

Departure Time:- 16:05

Capacity :- 34500

Legs :- 1

MRP :- ₹ 4500

SPECIAL OFFER:- Diwali

OFFER VALIDITY 2020-12-16

BOOK >

Welcome to AirTravel

Let's explore to the world ! 





Enjoy the journey
Glad to join with us.

Search Flights !

Journey starts

Kolkata

Journey Ends

Mumbai

Date

 SEARCH

ALL DEALS



SpiceJet

Flight No.:- 1212

Source :- Hyderabad

Destination :- Delhi

Departure Date :- 2020-12-17

Departure Time:- 12:45

Capacity :- 34500

Legs :- 2

MRP :- ₹ 23000

[BOOK >](#)

Welcome to AirTravel

Let's explore to the world ! 

3. Admin Mode

- a. When admin logins :-

http://localhost:8081/flightServlet/managementTeam/managerlogin.jsp

The screenshot shows a web browser window with the URL `localhost:8081/flightServlet/managementTeam/managerlogin.jsp`. The page title is "Team Login (only for management team)". It features a large placeholder icon of a person. Below the icon are two input fields: "EID" and "ECode". A "SUBMIT" button is centered between the fields. At the bottom right of the form area, there is a link labeled "Customer?". The browser's address bar and some pinned tabs are visible at the top.

- b. When admin inputs data

http://localhost:8081/flightServlet/managementTeam/addflight.jsp

The screenshot shows a web browser window with the URL `localhost:8081/flightServlet/managementTeam/addflight.jsp`. The page title is "Add Flight Information". The form consists of several input fields with icons: "Flight Company" (pilot icon), "Flight No." (airplane icon), "From" (map pin icon) and "To" (map pin icon), "dd/mm/yyyy" (calendar icon) and "Departure Time" (clock icon), "Sitting Capacity" (person icon), "Legs" (two people icon), "Price" (rupee symbol icon), "Special Offer" (key icon), and another "dd/mm/yyyy" field. A small "+" button is located in the bottom right corner of the form area. The browser's address bar and some pinned tabs are visible at the top.

- c. When admin sees after input the data

<http://localhost:8081/flightServlet/managementTeam/flightDetails.jsp>

Company	Flight No.	Source	Destination	Departure Date	Departure Time	Sitting Capacity	Legs	Price	Special offer	Special validity	Action
SpiceJet	1005	kolkata	Delhi	2020-12-16	02:16	15000	1	4500	winter		<button>DELETE</button>
airbnb	1205	bangalore	Kolkata	2020-12-31	16:05	34500	1	4500	Diwali	2020-12-16	<button>DELETE</button>
SpiceJet	1212	Hyderabad	Delhi	2020-12-17	12:45	34500	2	23000			<button>DELETE</button>
AirAsia	1500	Punjab	Gujarat	2021-01-14	15:29	15000	1	2500	New Year	2021-01-02	<button>DELETE</button>
kingfisher	9001	kolkata	kochi	2021-01-19	00:45	12900	1	23000	winter	2020-12-30	<button>DELETE</button>