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CMS - 375 Database Design & Dev

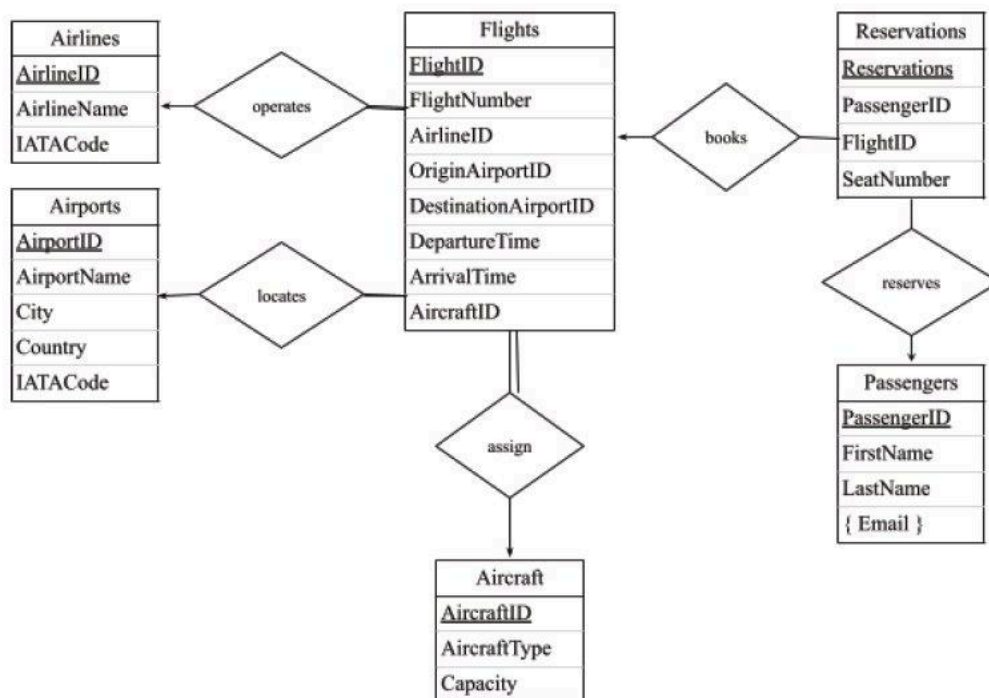
Apr 29, 2024

WPAirways

Project Name, Group name, Group member

- WPAirways
- Team Universe
- Fredrik Bang-andreasen, Jack Filipanits, Sanghun Park

< E-R Diagram >



Introduction

The WPAirways project is an internal management system for WPAirways, which aims to be used for its operations, concerning management of flights, passenger information and airport management. Our platform is scalable and can be applied to other airlines' as well.

The WPAirways project is designed as an internal management system primarily for WPAirways to streamline their operational processes. This system manages various aspects such as flight scheduling, passenger information, and airport operations. While initially developed for WPAirways, the platform is designed with scalability in mind, allowing for potential future adaptations to other airline systems. The primary users of this system are airline administrators and operational staff who require efficient access to real-time data to manage daily activities.

Methods

The development of the WPAirways system utilized a combination of technologies and methodologies. The backend database management was handled using SQL, leveraging the robust data handling capabilities of relational database management systems to ensure efficient data storage and retrieval. The front end was developed using HTML, CSS, and JavaScript, providing a user-friendly interface that is both intuitive and responsive.

© Jet Screener 2024

Manage Bookings

Passenger Name:

New Flight Number:

Update Booking

Passenger Name to Delete:

Delete Booking

Flights from MCO to LAX on 2024-04-24:

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Flight Details						
Flight ID	Flight Number	Origin Airport ID	Destination Airport ID	Departure Time	Arrival Time	
1	WP001	MCO	LAX	2024-04-10 08:00:00	2024-04-10 14:30:00	
2	WP012	LAX	JFK	2024-04-10 12:00:00	2024-04-10 19:30:00	
3	WP003	JFK	LHR	2024-04-10 14:00:00	2024-04-10 20:30:00	
4	WP044	LHR	CDG	2024-04-10 09:00:00	2024-04-10 12:30:00	
5	WP005	CDG	DWB	2024-04-10 16:00:00	2024-04-10 20:30:00	
6	WP006	DWB	BKK	2024-04-10 18:00:00	2024-04-10 21:30:00	
7	WP007	BKK	NET	2024-04-10 14:00:00	2024-04-10 04:30:00	
8	WP008	NET	SYD	2024-04-10 08:00:00	2024-04-10 20:30:00	
9	WP009	SYD	PER	2024-04-10 12:00:00	2024-04-10 20:30:00	
10	WP010	MCO	PER	2024-04-10 12:00:00	2024-04-10 20:30:00	
11	WP011	PER	LAX	2024-04-10 18:00:00	2024-04-10 21:30:00	
12	WP012	MCO	LAX	2024-04-10 18:00:00	2024-04-10 17:00:00	
13	WP013	MCO	LAX	2024-04-10 18:00:00	2024-04-10 20:30:00	
14	WP014	LAX	JFK	2024-04-10 08:00:00	2024-04-10 21:30:00	
15	WP022	LAX	JFK	2024-04-10 16:00:00	2024-04-10 21:30:00	
16	WP032	LAX	JFK	2024-04-10 22:00:00	2024-04-10 24:30:00	
17	WP033	JFK	LHR	2024-04-10 09:00:00	2024-04-10 24:30:00	
18	WP034	JFK	LHR	2024-04-10 12:00:00	2024-04-10 24:30:00	
19	WP035	JFK	LHR	2024-04-10 16:00:00	2024-04-10 24:30:00	
20	WP044	LHR	CDG	2024-04-10 10:00:00	2024-04-10 13:30:00	
21	WP044	LHR	CDG	2024-04-10 16:00:00	2024-04-10 17:30:00	
22	WP044	LHR	CDG	2024-04-10 18:00:00	2024-04-10 21:30:00	
23	WP015	CDG	DWB	2024-04-10 07:00:00	2024-04-10 21:30:00	
24	WP025	CDG	DWB	2024-04-10 14:00:00	2024-04-10 21:30:00	
25	WP035	CDG	DWB	2024-04-10 22:00:00	2024-04-10 24:30:00	
26	WP016	DWB	BKK	2024-04-10 09:00:00	2024-04-10 21:30:00	
27	WP016	DWB	BKK	2024-04-10 16:00:00	2024-04-10 21:30:00	
28	WP016	DWB	BKK	2024-04-10 21:00:00	2024-04-10 21:30:00	
29	WP027	BKK	NET	2024-04-10 08:00:00	2024-04-10 24:30:00	
30	WP027	BKK	NET	2024-04-10 16:00:00	2024-04-10 23:30:00	
31	WP027	BKK	NET	2024-04-10 23:00:00	2024-04-10 20:30:00	
32	WP018	NET	SYD	2024-04-10 06:00:00	2024-04-10 21:30:00	
33	WP028	NET	SYD	2024-04-10 10:00:00	2024-04-10 21:30:00	
34	WP028	NET	SYD	2024-04-10 18:00:00	2024-04-10 20:30:00	
35	WP019	SYD	PER	2024-04-10 17:00:00	2024-04-10 23:30:00	
36	WP019	PER	SYD	2024-04-10 10:00:00	2024-04-10 20:30:00	
37	WP019	PER	PER	2024-04-10 19:00:00	2024-04-10 20:30:00	
38	WP010	PER	MCO	2024-04-10 08:00:00	2024-04-10 24:30:00	
39	WP020	PER	MCO	2024-04-10 12:00:00	2024-04-10 20:30:00	
40	WP030	PER	MCO	2024-04-10 20:00:00	2024-04-10 07:00:00	

- Insert Flight: Shows the interface for adding new flights, including fields for flight number, departure and arrival times, and aircraft type.
- Update Flight: Demonstrates how existing flight details can be altered, with logs of changes for auditing purposes.
- Cancel Flight: Displays the process for removing a flight from the schedule, including confirmation prompts to prevent accidental cancellations.

Discussion and Conclusion

What works well: the front end is clean, available flights can be searched by airports and date, passenger information is accessible.

- What did not work well: we were not able to implement some of the fetch functions that we initially desired.
- Challenges and adaptation: our initial scope was too broad, but we were able to narrow it down to make a more robust web application.

The development of the WPAirways system provided valuable insights into the practical application of database management systems in real-world scenarios.

What Worked Well: The user interface was particularly effective, providing clear and accessible information. The system's ability to search and display flights by airports efficiently helped streamline operations.

What Did Not Work Well: Initial challenges included integration of real-time data updates which occasionally led to delays in data refresh.

Challenges and Adaptations: One major challenge was ensuring system security, particularly in safeguarding passenger information. This was addressed by implementing advanced encryption methods and continuous security assessments.

Adapting to changing requirements during development required flexible planning and agile development methodologies.

Reference: Add the references of sources from which you get your data or code help.

- We made up the data on our own, using existing airports with hypothetical flights, passengers, dates and destinations. The data in question are not factual, but makes up a hypothetical test case for the program.
- Structure of the webpage and inspiration derive from airlines' like Delta and United.
- We used components of bootstrap framework to structure the front end.