Airport Management System Prototype

Team #1 – "The Wright Brothers"

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Non-Functional Description

- PostgreSQL

- Java 11
    - JavaFX
    - Spring Framework for JDBC
    - Maven Build Tool

- ~7k LOC in Java

Functional Description

- Employees of different types store information about airports, airlines, aircraft, flights, passengers, and other airport related information.

- Possible users include airport employees, airline employees, and system admins.

- The system provides certain functionality depending on the type of employee using the system.

Application Limitations

- More controllers need to be implemented

- JavaFX multithreading not completely taken advantage of

- Not much of a business perspective

- Role system is messy

audit_airline_employee_on_flight

Column	Type
id	integer
airline_employee_on_flight_id	integer
flight_id	integer
airline_employee_id	integer
deleted_on	timestamp with time zone

audit_baggage

Column	Type
id	integer
passenger_on_flight_id	integer
weight	real
baggage_status_id	integer
deleted_on	timestamp with time zone

public.audit_passenger_on_flight

Column	Type
id	integer
passenger_on_flight_id	integer
flight_id	integer
passenger_id	integer
deleted_on	timestamp with time zone

audit_airline_employee

Column	Type
id	integer
airline_employee_id	integer
airline_id	integer
job_id	integer
first_name	text
middle_name	text
last_name	text
email	text
address	text
phone	text
birth_date	date
deleted_on	timestamp with time zone

audit_passenger

Column	Type
id	int4
passenger_id	int4
passport_number	text
first_name	text
middle_name	text
last_name	text
email	text
address	text
phone	text
birth_date	date
deleted_on	timestamp with time zone

Audit Procedures

log_baggage_deletion()
log_airline_employee_deletion()
log_airline_employee_on_flight_deletion()
log_passenger_deletion()
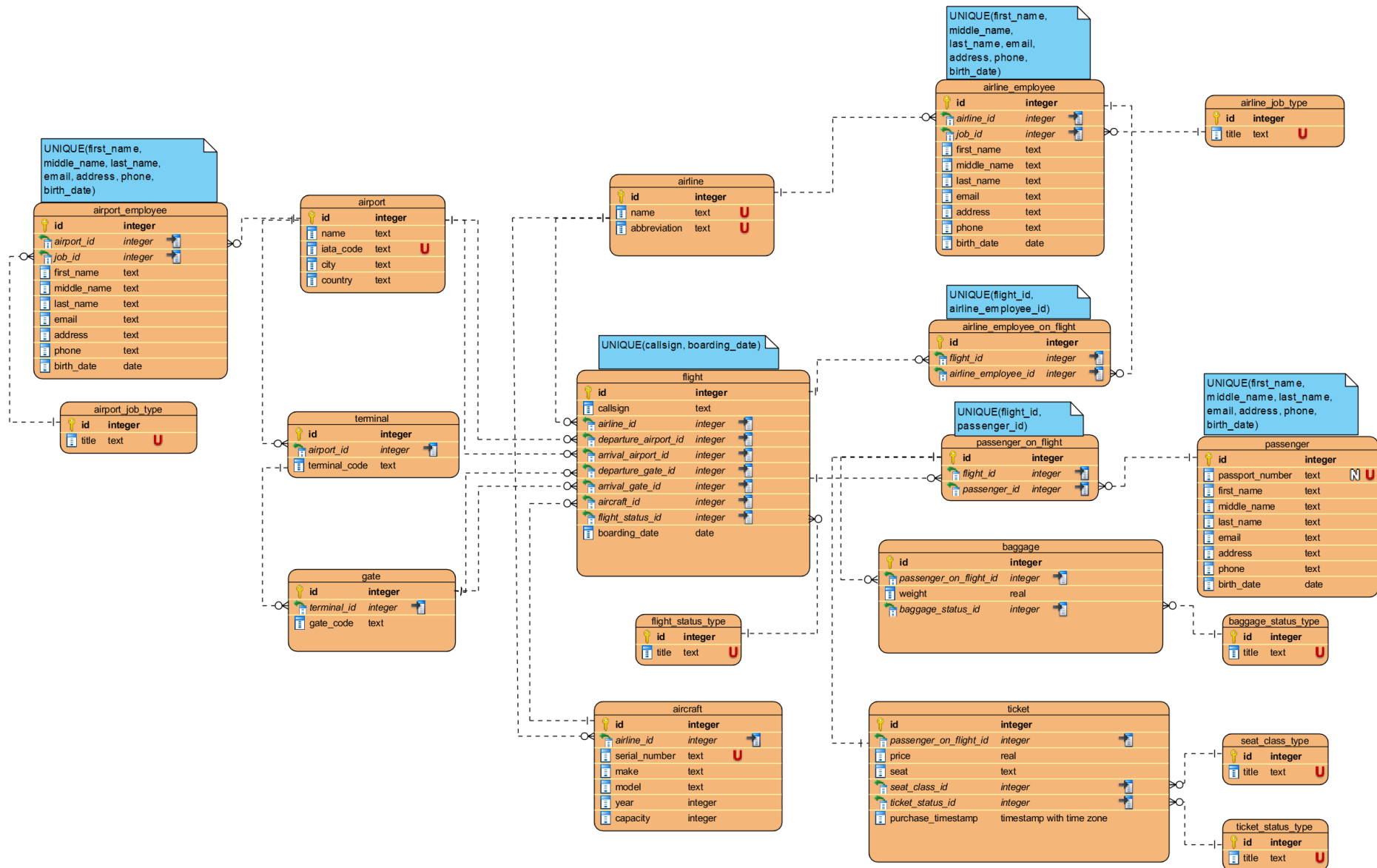log_passenger_on_flight_deletion()
log_ticket_deletion()

Audit Triggers

after_baggage_deletion
after_airline_employee_deletion
after_airline_employee_on_flight_deletion
after_passenger_deletion
after_passenger_on_flight_deletion
after_ticket_deletion

UNIQUE(first_name, middle_name, last_name, email, address, phone, birth_date)

airport_employee

Column	Type
id	integer
airport_id	integer
job_id	integer
first_name	text
middle_name	text
last_name	text
email	text
address	text
phone	text
birth_date	date

airport_job_type

Column	Type
id	integer
title	text U

airport

Column	Type
id	integer
name	text
iata_code	text U
city	text
country	text

terminal

Column	Type
id	integer
airport_id	integer
terminal_code	text

gate

Column	Type
id	integer
terminal_id	integer
gate_code	text

airline

Column	Type
id	integer
name	text U
abbreviation	text U

UNIQUE(first_name, middle_name, last_name, email, address, phone, birth_date)

airline_employee

Column	Type
id	integer
airline_id	integer
job_id	integer
first_name	text
middle_name	text
last_name	text
email	text
address	text
phone	text
birth_date	date

airline_job_type

Column	Type
id	integer
title	text U

UNIQUE(flight_id, airline_employee_id)

airline_employee_on_flight

Column	Type
id	integer
flight_id	integer
airline_employee_id	integer

UNIQUE(callsign, boarding_date)

flight

Column	Type
id	integer
callsign	text
airline_id	integer
departure_airport_id	integer
arrival_airport_id	integer
departure_gate_id	integer
arrival_gate_id	integer
aircraft_id	integer
flight_status_id	integer
boarding_date	date

UNIQUE(flight_id, passenger_id)

passenger_on_flight

Column	Type
id	integer
flight_id	integer
passenger_id	integer

baggage

Column	Type
id	integer
passenger_on_flight_id	integer
weight	real
baggage_status_id	integer

flight_status_type

Column	Type
id	integer
title	text U

aircraft

Column	Type
id	integer
airline_id	integer
serial_number	text U
make	text
model	text
year	integer
capacity	integer

ticket

Column	Type
id	integer
passenger_on_flight_id	integer
price	real
seat	text
seat_class_id	integer
ticket_status_id	integer
purchase_timestamp	timestamp with time zone

UNIQUE(first_name, middle_name, last_name, email, address, phone, birth_date)

passenger

Column	Type
id	integer
passport_number	text N U
first_name	text
middle_name	text
last_name	text
email	text
address	text
phone	text
birth_date	date

baggage_status_type

Column	Type
id	integer
title	text U

seat_class_type

Column	Type
id	integer
title	text U

ticket_status_type

Column	Type
id	integer
title	text U

Demonstration

Questions, Comments, Complaints?

Resources Used In Presentation

- Slide 1: https://www.flickr.com/photos/130478877@N02/26885642423