Course name: Databases
Laboratory work 1. ERD diagram.

Submission format: PDF document containing ER-Diagram of the system

Required tasks.

Entities and Attributes:

1) **Airline**

PK: airline_id – int (UN)
Attributes:
airline_code – varchar
name – varchar
country – varchar
created – timestamp
updated – timestamp

2)**International_airport**

PK: airport_id-int
Attributes:
airport_name – varchar
country – varchar
state – varchar
city – varchar

3) **Flights**

PK: flight_id – int
FK:
airline_id (FK) – int
departure_airport_id (FK) – int
arrival_airport_id (FK) – int

Attributes:
departing_gate – varchar
arriving_gate – varchar
created – timestamp
updated – timestamp
scheduled_departure_time – timestamp
scheduled_arrival_time – timestamp
actual_departure – timestamp
actual_arrival – timestamp

4)**Passengers**

PK: passenger_id – int
Attributes:
first_name – varchar
last_name – varchar
gender – char
date_of_birth – date
country_citizenship – varchar
country_residence – varchar
passport_number – varchar (UN)
profile_created – timestamp
profile_updated – timestamp

5)**Booking**

PK: booking_id – int
FK: flight_id – int,
passenger_id – int
Attributes:
status – varchar
booking_platform – varchar
booking_created – timestamp
updated – timestamp
ticket_price – decimal

6) **Boarding_pass**

PK: boarding_pass_id – int
FK: booking_id – int
Attributes:
seat – varchar
boarding_time – timestamp
passes_created – timestamp
passes_updated – timestamp

7)**Baggage**

PK: baggage_id – int
FK: booking_id – int
Attributes:
weight_kg – decimal
created_date – timestamp
updated_date – timestamp

8) **Baggage_check**

PK: baggage_checking_id – int
FK: booking_id, passenger_id – int
Attributes:

check_results – varchar
created_at – timestamp
updated_at – timestamp

9) **Airport_security_check**

PK: check_id – int
FK: passenger_id – int
Attributes:
check_results – varchar
created – timestamp
updated – timestamp

Relationships

Airline → Flights: One airline can operate many flights (1:M).

International_airport → Flights: One airport can serve as a departure or arrival airport for many flights (1:M).

Passengers → Booking: One passenger can have multiple bookings (1:M).

Booking → Boarding_pass: Each booking generates exactly one boarding pass (1:1).

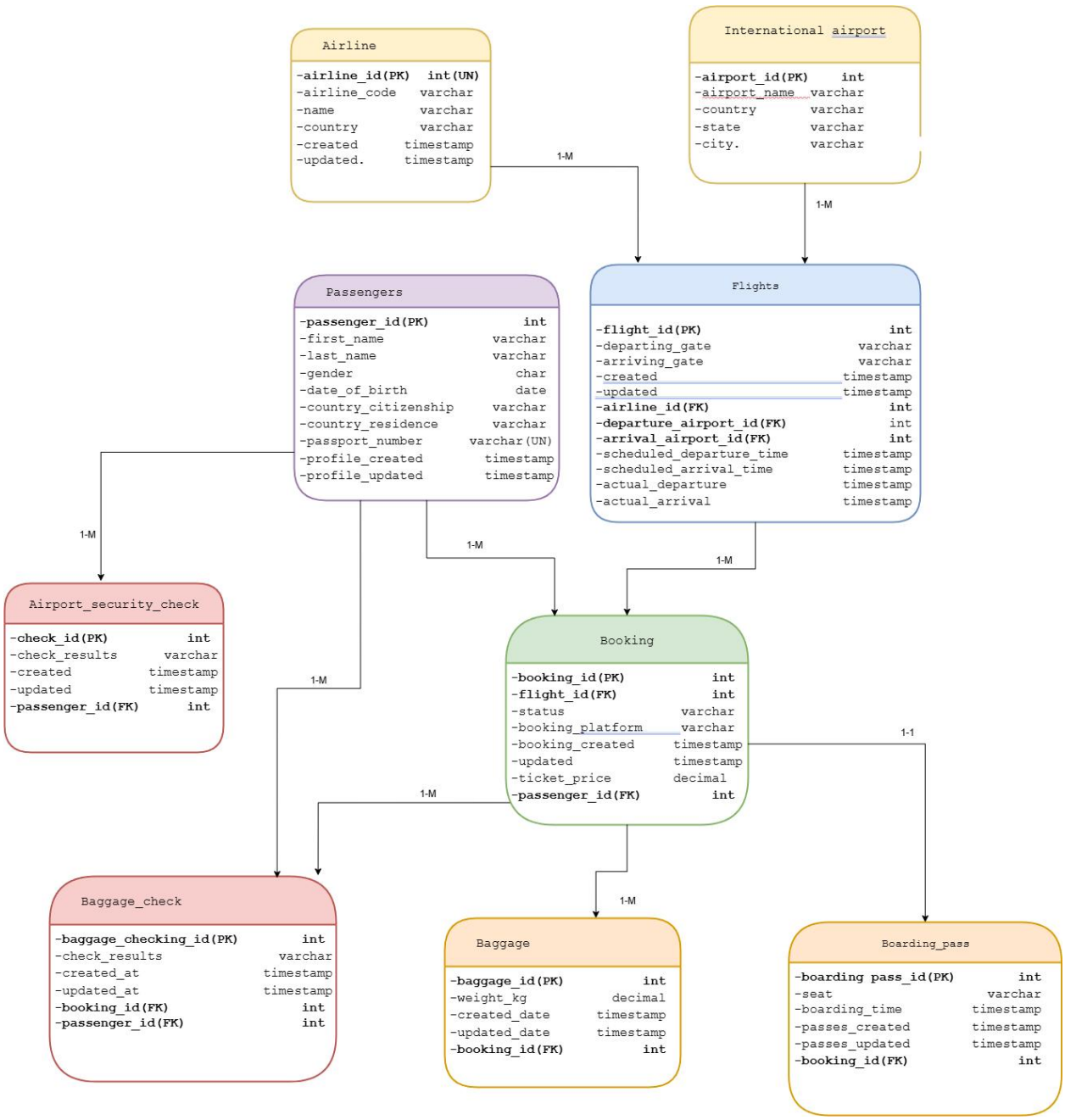
Booking → Baggage: One booking may include several pieces of baggage (1:M).

Booking → Baggage_check: Each booking may require multiple baggage checks (1:M).

Passengers → Airport_security_check: Each passenger undergoes multiple security checks (1:M).

Legend

- **PK** — Primary Key
- **FK** — Foreign Key
- **UN** — Unique constraint
- **1 — M** — One-to-Many relationship
- **1 — 1** — One-to-One relationship


Airline
-airline_id(PK) int(UN)
-airline_code varchar
-name varchar
-country varchar
-created timestamp
-updated. timestamp
International airport
-airport_id(PK) int
-airport_name varchar
-country varchar
-state varchar
-city. varchar
1-M
1-M
Passengers
-passenger_id(PK) int
-first_name varchar
-last_name varchar
-gender char
-date_of_birth date
-country_citizenship varchar
-country_residence varchar
-passport_number varchar(UN)
-profile_created timestamp
-profile_updated timestamp
Flights
-flight_id(PK) int
-departing_gate varchar
-arriving_gate varchar
-created timestamp
-updated timestamp
-airline_id(FK) int
-departure_airport_id(FK) int
-arrival_airport_id(FK) int
-scheduled_departure_time timestamp
-scheduled_arrival_time timestamp
-actual_departure timestamp
-actual_arrival timestamp
1-M
1-M
1-M
Airport_security_check
-check_id(PK) int
-check_results varchar
-created timestamp
-updated timestamp
-passenger_id(FK) int
Booking
-booking_id(PK) int
-flight_id(FK) int
-status varchar
-booking_platform varchar
-booking_created timestamp
-updated timestamp
-ticket_price decimal
-passenger_id(FK) int
1-M
1-1
1-M
Baggage_check
-baggage_checking_id(PK) int
-check_results varchar
-created_at timestamp
-updated_at timestamp
-booking_id(FK) int
-passenger_id(FK) int
Baggage
-baggage_id(PK) int
-weight_kg decimal
-created_date timestamp
-updated_date timestamp
-booking_id(FK) int
Boarding_pass
-boarding pass_id(PK) int
-seat varchar
-boarding_time timestamp
-passes_created timestamp
-passes_updated timestamp
-booking_id(FK) int