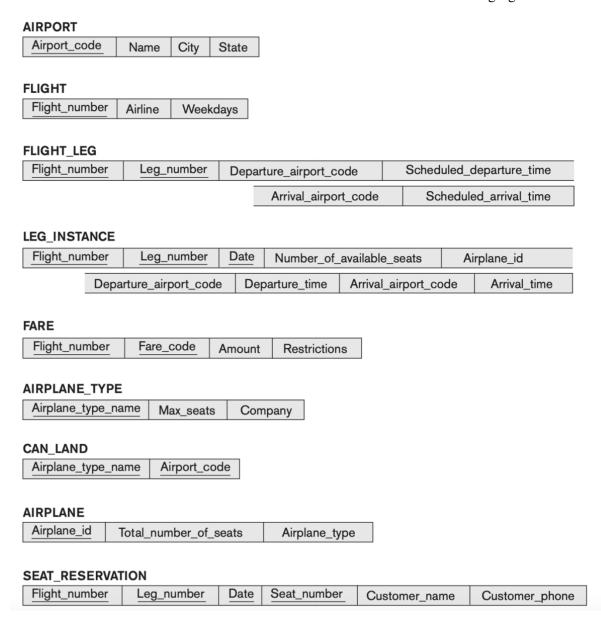
Assignment 4

Data Management (INFO125)

Deadline: Friday, 25.10.2024 at 13:00

INSTRUCTIONS: To be completed in groups of 1-3 students. The assignment is mandatory for all students of INFO125 and should be submitted on Mitt UiB. Please note that questions about the assignments or group seminars should be directed to your seminar leader (TA).

Consider the relations in the AIRLINE relational database schema in the following figure:



Question 1

Fill in the blanks in the following Relational Algebra queries according to the requested descriptions:

a) Return all airports in Oslo.

$$\sigma_{\underline{\hspace{1cm}}='Oslo'}(Airport)$$

b) Return all Airlines.

$$\pi$$
____($Flight$)

c) Return all Airlines that have a flight on Saturday

```
\_\_Airline(\_\_Weekdays='Saturday'(Flight))
```

Question 2

Consider the AIRLINE relational database schema, provided in the previous question:

a) Fill in the blanks in the following SQL script that creates the table "Can_land". Assume that all the other tables have been already created. The airport code contains 3 characters (letters) while the airplane type name contains maximum 13 characters.

CREATE TABLE	
(CHAR(3),
Airplane_type_name _	,
FOREIGN KEY	, REFERENCES
FOREIGN KEY	, REFERENCES);

b) Find all cities in which an airplane type with name 'Boing 747' can land.

SELECT		
FROM Airport	, Can_land	
WHERE	AND	

Question 3

Consider the following tables representing information of **Workers**, **Location** of their departments and **Countries**, and answer the given questions:

DEPT_LOCATION

Loc_Code	Address	Post_Code	City	State	Reg
2700	Schwanthalerstr. 703	80925	Munich	Bavaria	DE
2800	Rua Frei Caneca 1360	01307-002	Sao Paulo	Sao Paulo	BR
2900	20 Rue des Corps-Sai	1730	Geneva	Geneve	CH
3000	Murtenstrasse 921	3095	Bern	BE	CH

WORKER

ID	Fname	Lname	Hire_Date	Job_ID	Salary
100 101 102 103 104 105 106 107	Steven Neena Lex Alexander Bruce David Valli Diana	King Kochhar De Haan Hunold Ernst Austin Pataballi Lorentz	1987-06-17 1987-06-18 1987-06-19 1987-06-20 1987-06-21 1987-06-22 1987-06-23 1987-06-24	AD_PRES AD_VP AD_VP IT_PROG IT_PROG IT_PROG IT_PROG IT_PROG	24000.00 17000.00 17000.00 9000.00 6000.00 4800.00 4200.00

COUNTIRY

Reg	Country_ Name
AR	Argentina
AU	Australia
BE	Belgium
BR	Brazil
CA	Canada
CH	Switzerland
CN	China
DE	Germany
DK	Denmark

- a) Write the query to find the Location Code, Address, City, State, Country Name of all the departments.
- b) Write a query to get the number of workers with the same job.
- c) Write a query to get the maximum salary of a worker who is an IT Programmer