Td N°2

SQL Queries :

Practices :

1. The following relations keeptrack of airline flight information:
Flights(*flno***integer**, *frm***varchar2 (30)**, *too***varchar2 (30)**, *distance* **integer**, *departs***date**,*arrives:* **date**, *price***integer**)
Aircraft(*aid***integer**, *aname***varchar2 (30)**, *cruisingrange:* **integer**)
Certified(eid**integer**, aid: **integer**)
Employees(*eid***integer**, *ename***varchar2(20)**, *salary***integer**)

Note that the Employees relation describes pilots and otherkinds of employees aswell; every pilot iscertified for someaircraft, and only pilots are certified to fly.Writeeach of the followingqueries in SQL.

a. Find the names of aircraftsuchthat all pilots certified to operatethemearn morethan $80,000.

b. For each pilot whoiscertified for more thanthreeaircraft, find the *eid*and the maximum*cruisingrange*of the aircraft for whichshe or heiscertified.

c. Find the names of pilots whose*salary*islessthan the price of the cheapest routefrom Los Angeles to Honolulu.

d. For all aircraftwith*cruisingrange*over 1000 miles, find the name of the aircraft and the averagesalary of all pilots certified for thisaircraft.

e. Find the names of pilots certified for some Boeing aircraft.
f. Find the *aids*of all aircraftthatcanbeused on routesfrom Los Angeles to Chicago.

g. Identify the routes thatcanbepiloted by every pilot whomakes more than $100,000.

h. Print the *enames*of pilots whocanoperate planes with*cruisingrange*greater than 3000 miles but are not certified on any Boeing aircraft.

i. A customerwants to travelfrom Madison to New York with no more thantwo changes of flight. List the choice of departure times from Madison if the customerwants to arrive in New York by 6 p.m.

j. Compute the differencebetween the averagesalary of a pilot and the average salary of all employees (including pilots).

k. Print the name and salary of everynonpilotwhosesalaryis more than the averagesalary for pilots.

l. Print the names of employeeswho are certifiedonly on aircraftswithcruising range longer than 1000 miles.

m. Print the names of employeeswho are certifiedonly on aircraftswithcruising range longer than 1000 miles, but on at least twosuchaircrafts.

n. Print the names of employeeswho are certifiedonly on aircraftswithcruising range longer than 1000 miles and who are certified on some Boeing aircraft.

2. Consider the followingrelationalschema. An employeecanwork in more than onedepartment; the *pct_time*filed of the Works relation shows the percentage of timethat a givenemployeeworks in a givendepartment.
Emp(*eid***integer**, *name***varchar2(30)**, lastname**varchar2(30),** *age***integer**, *salary***real**)
Works(*eid***integer**, *did:* **integer**, *pct_time:* **integer**)
Dept(*did***integer**, dname**varchar2(30)**, *budget***real**, *managerid***integer**)

Write the followingqueries in SQL:

a. Print the names and ages of eachemployeewhoworks in both the Hardware department and the Software department.

b. For eachdepartmentwith more than 20 full-time-equivalentemployees (i.e., where the part-time and full-time employeesadd up to at least thatmanyfulltime employees), print the *did*togetherwith the number of employeesthat work in thatdepartment.

c. Print the name of eachemployeewhosesalaryexceeds the budget of all of the departmentsthathe or sheworks in.

d. Find the *managerids*of managers who manage onlydepartmentswith budgets greaterthan $1 million.

e. Find the *enames*of managers who manage the departmentswith the largest budgets.

f. If a manager manages more than one department, he or she*controls*the sum of all the budgets for thosedepartments. Find the *managerids*of managers who control more than $5 million.

g. Find the *managerids*of managers who control the largestamounts.

h. Find the *enames*of managers who manage onlydepartmentswith budgets largerthan $1 million, but at least one departmentwith budget lessthan $5 million.