

National Institute of Technology Calicut
Department of Computer Science and Engineering
CS3095D DBMS Lab
Mid Term Test- 1

Time: 60 Minutes

Date: 14.09.2021

Marks : 11

Consider a production database for a company. The company consists of DIVISIONs, PERSONNEL, MACHINES and different PARTS. The company has multiple divisions situated at different locations in India. These divisions are handled by a divisional manager. Each divisional manager has a group of persons working under him. A personnel working in the company can use a particular machine to produce a part. After a part is produced, its weight, color, and price is checked and noted down. Thus, the production of the company is a group effort by PERSONNEL, MACHINE, and the PART produced (i.e. a personnel uses a machine to produce a part). The database stores the quantity of parts produced on a daily basis. There is at least one personnel in each division. One personnel is always part of only one division and can be manager of only one division. One machine can only be used by one division (it can also be inoperative). There are no more restrictions concerning the relationships. The relational schema of the database is given below:

DIVISION

<u>div_id</u>	div_name	div_place	div_mgr_id
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PERSONNEL

<u>pid</u>	pname	pdesignation	div_id	pmgr_id
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MACHINE

<u>mid</u>	mmake	mtype	mname	mperformance	div_id	eid
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PARTS

<u>eid</u>	ename	eweight	ecolor	eprice
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PRODUCTION

<u>pid</u>	<u>mid</u>	<u>eid</u>	qty	price
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Answer the following questions:

1. Write an sql query to find the no. of personnels that have produced some parts. (0.5 marks)
2. Write an SQL query to find the names of personnels who uses machine with id M1 for producing a part using EXISTS. (0.5 marks)

3. Find the names of the parts produced only by the personnel 'Tom ' and no one else. (1.5 marks)
4. Find out how many personnels are managed by the manager 'James' (1.5 marks)
5. Write a query to find the most expensive part produced by the personnel 'Raj' (1.5 marks)
6. Write an sql query to find the ID of the personnel who produced the maximum number of parts.(Any parts) (1.5 marks)
7. Find the names of the personnels who produces some red and some green parts (2 marks)
8. Which of the following sql queries give the correct answer for the query:
Find the names of the personnel who doesnot uses machine "abc" to produce a part. Justify your answer. (2 marks)

Query 1: select pname
from personnel
where pid in (select pid
from production,machine
where production.mid = machine.mid and
machine.name = 'abc')

Query 2: select pname
from personnel, machine, production
where personnel.pid = production.pid and
machine.mid = production.mid and
Machine.name != 'abc'