IT-DBS1-A19 Hand in 3 – 25 of November 2019 at 23:59 o'clock in wiseflow.

Script for company database: See file "Company Database Hand in 3.txt"

Exercise 1: Trigger

1. Create a log trigger for the table 'works_on' in the company database – for insert, update and delete. The new log table should contain a serial id and a time stamp.

2. Create a trigger for table 'project' who raise an exception if a department assign more than 5 projects.

3. Create a trigger for the 'works_on' table who raise an exception if an employee is assigned to more than 4 projects.

4. Create a log trigger for department table in the company database …the content in the log table should be readable!

Exercise 2: SQL and Views

5. Create a simple view for 'works_on' table in the company database – all turples should be in this view!

6. Create a view with a sum of hours for each project.

7. Create a view with a sum of hours for each combination of employee and project, add names for employee and project and calculate the cost – the cost for each hour are 300 DDK.

EMP#	EMP_Name	PROJ#,	Project Name	Hours	Cost
123456789	Jens Jensen	5	Test	8	2400

8. A view that has the department name, manager name and managers salary for every department.

9. A view that has the employee name, supervisor name, and employee salary for each employee who works in 'Research' department.

10. A view that has the project name, controlling department name, number of employees, and total hours worked per week on project for each project

11. A view that has the project name, controlling department name, number of employees, and total hours worked per week on the project for each project with more than one employee working on it.

12. A view that retrieve the names of all employees whose supervisor's supervisor has '8886655555' for Ssn.

13. A view that retrieve: for each department whose average employee salary is more than $30.000 retrieve the department name and the number of employees working for that department.

14. Create a view of you own choice.

(It could be a view who contain the following information …

EMP#	EMP_Name	PROJ#,	Project Name	Hours	Cost	Total Cost
123456789	Jens Jensen	5	Test	8	2400	16000
…	…	…	…	…	…	16000
…	…	…	…	…	…	16000

)

Exercise 3: JDBC

Done in Hand In 2.

Exercise 4: Reverse Engineering:

From the 'Invoice' below, show the normalisation process for creating a relation database model:

Contractor Holmsen Aps
Vesterhavsvej 25
9990 Fnatting

ØKOLOGIC
Chr.Østergårds Vej 10
8700 Horsens

Invoice no 12

Research number. 200207 Research date: 02/01/2016

Analysis no.:	Description:	Amount	Price	Total
10	Pesticide Test	2	1.200,00	2.400.00
15	Bacteria Analysis	3	500,00	1.500,00
		Total excl. VAT		3.900,00
		VAT		975,00
		Total incl. VAT.		4.875,00

Exercise 5: Joins

In this exercise, you have to use the following types of 'join':

Union, intersect, except, natural join, inner join, left join, right join.

Given the following tables:

List of payments from your bank:

Invoice Number	Customer	Value
123	Peter	200
234	Soren	500
345	Soren	400
456	Peter	66
567	Trine	50
1212	Niels	87
1313	Viggo	99

List of debtors ... customers who should have paid:

Invoice Number	Customer	Value
012	Hans	600
123	Peter	200
234	Soren	500
345	Soren	400
456	Peter	66
567	Trine	50

Answer the following question:

- Make a list with invoices who have been paid.
- Make a list of invoices who have not been paid.
- Make a list of customer who do not have any invoice but have paid an invoice … maybe twice.

The same question can be answered by using various types of 'joins' - show these!

Exercise 6: Transaction

1. Show an example on log file.
2. Explain" dirty read problem" with data from first poster.
3. Explain" non-repeatable read" with data from first poster.
4. Explain" phantom read" with data from first poster.