

1. Which are the possibilities to realize the multidimensional cube in the DWH? Which technique is best?
2. Explain the different types of summing ratio. Give abstract and concrete examples for each type.  
Which further properties are mandatory for ratios?
3. Transform a part of your local integrated database schema that is relevant for queries into Star- and Snowflake-Schema. Which possibilities do you have?  
Take the dimensions in account that are present in your schema, e.g. time.  
Try to find long drill pathes.  
For the following tasks imagine your department states the whole Data Warehouse.
  - (a) Create an extract from the Data Warehouse by creating a materialized view. That extract shall contain data that are relevant for the finance department of your local department or similar.  
Call the advantages and necessities connected to materialized views.  
Proove your assumption. Is the view used automatically?
  - (b) Execute drill-down and roll-up statements on the base of these data.
  - (c) Adapt the procedure of the lecture to create dimensions onto your schema.
  - (d) Generate cross-tables and detailings (see exercise 3) on the base of your data using the dimensions. Perform roll-up and drill-down queries using the dimensions. What is remarkable?

**The fulfillment of this task is pre-requisite for the Schein. Add the solutions to your script.**

Hint: You can use PL/SQL to create Testdata very fast.

4. The following calculations shall be made concerning the ressource consumption of the Star- and Snowflake-Schema:
  - (a) Two dimensions are given, each havin 7 classifications in every dimension. Every classification contains one attribute. The most abstract classification shall contain 2 attributes. 4 attribute values of an subordinate classification level are related to one attribute value of an superordinate classification level. Furthermore 1000 tuples for one fact attribute are assumed. Presume that every attribute is 1 byte and the keys are not composed.  
Calculate the ressource consumption for the Star- and Snowflake-Approach.
  - (b) Change the parameter of possible attribute values to five and recalculate the ressource consumption. Call the tendencies.

PERSONAL_ID	NAME	Geselle	Lehrling
1	Mark	null	Verkaeuffer
2	Pete	Lagerist	null

Table 1: target design of the data

## 5. Task for the next exercise:

In this task the knowledge about schema integration shall be deepened.  
Execute the following script in oracle:

```
http://wwwiti.cs.uni-magdeburg.de/iti_db/lehre/dw/dwt1112/ueb04/ueb04_prepare.sql
```

Transform the data of the first two tables (*Bierladen1*, *Bierladen2*) into the third table *IntegratedBierladen*. Do not use only SQL but write a JAVA or C++ program that performs the transformation.

To help you an example program "HelloJDBC.java" is downloadable from the website.<sup>1</sup> To execute the code the oracle driver from the website (ojdbc14-1.jar) has to be put into the classpath variable.<sup>2</sup>

The *IntegratedBierladen*-table and the related data design is depicted in table 1.

**That task is a pre-requisite to get the Schein.**

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<sup>1</sup>[http://wwwiti.cs.uni-magdeburg.de/iti\\_db/lehre/dw/dwt1112/ueb04/ueb04\\_HelloJDBC.java](http://wwwiti.cs.uni-magdeburg.de/iti_db/lehre/dw/dwt1112/ueb04/ueb04_HelloJDBC.java)

<sup>2</sup>[http://wwwiti.cs.uni-magdeburg.de/iti\\_db/lehre/dw/dwt1112/ueb04/ojdbc14-1.jar](http://wwwiti.cs.uni-magdeburg.de/iti_db/lehre/dw/dwt1112/ueb04/ojdbc14-1.jar)