Data-Warehouse-Technologien
Exercise sheet 5

Assignment 1: State possible occurrences of slowly changing dimensions in the domains of student data analyses or in the library context. Give at least one exemplary analysis for one of them that needs as is, as of, as posted, or historical truth.

Assignment 2: Explain the Differential Snapshot Problem. For each of the given scenarios, choose an existing method to solve the Differential Snapshot Problem and explain the resulting costs.

1. **M = 3 entries, Old Snapshot: F_1, New Snapshot: F_4**
2. **M = 6 entries, Old Snapshot: F_1, New Snapshot: F_4**
3. **M = 2 entries, Old Snapshot: F_2, New Snapshot: F_4**
4. **M = 3 entries, Old Snapshot: F_3, New Snapshot: F_4**

F_1

PK	PName	Price
P1	Milka	1.99
P6	ChaiTea	3.30
P5	Vodka	8.99
P3	Fish	10.99
P2	Pizza	3.49
P4	Ben&Jerries	4.99

F_2

PK	PName	Price
P1	Milka	1.99
P2	Pizza	3.49
P3	Fish	10.99
P4	Ben&Jerries	4.99
P5	Vodka	8.99
P6	ChaiTea	3.30

F_3

H(x)	PK	PName	Price
0	P3	Fish	10.99
	P6	ChaiTea	3.30
1	P1	Milka	1.99
	P4	Ben&Jerries	4.99
2	P2	Pizza	3.49
	P5	Vodka	8.99

F_4

PK	PName	Price
P2	Pizza	3.99
P6	ChaiTea	3.30
P5	Vodka	10.99
P7	Coca Cola	1.99
P3	Fish	10.99

Assignment 3: Explain the different transformation in the ETL process.
Hereby, consider the schema mapping problem and integrate the following schemas (using SQL). You can use the SQL database and the scripts in the e-Learning page.

1. `WineSupplier(WineID,Wine,ProductionDate, Color, Producer, Region, Country)` To `Wine(WineID, WName,Year, Color, Vineyard)` & `Producer(Vineyard, Region Country)`
2. `Person(Name, Sex, Birthdate)` To `Steward(FirstName, Lastname, Age)` & `Stewardess(FirstName, Lastname, Age)`

3. `Beer(BID,Sold_Items, Alcohol)` into `Bestsellers(BID,Sold_Items, Alcohol)` with Beers accounting for more than 10 % of the sold beers and else into `Stickers(BID,Sold_Items, Alcohol)`