

## Data Intensive Systems - Miniproject - Part 3

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# 1 DIS Miniproject

## 1.1 Task E

We defined our multidimensional cube using the following xml:

```
1 <?xml version="1.0"?>
2
3 <Schema name="FKlubDW">
4   <Cube name="Sales">
5     <Table name="sales"/>
6     <Dimension name="Product" foreignKey="productid">
7       <Hierarchy hasAll="true" allMemberName="All Products" primaryKey="productid">
8         <Table name="product"/>
9         <Level name="Name" column="name" uniqueMembers="false"/>
10      </Hierarchy>
11    </Dimension>
12    <Dimension name="time" type="TimeDimension" foreignKey="timeid">
13      <Hierarchy hasAll="true" allMemberName="All Times" primaryKey="timeid">
14        <Table name="time"/>
15        <Level name="hour" column="hour" uniqueMembers="true" levelType="TimeHours" type="
16          Numeric"/>
17        <Level name="minute" column="minute" uniqueMembers="false" levelType="TimeMinutes" type="
18          Numeric"/>
19      </Hierarchy>
20    </Dimension>
21    <Dimension name="hour" type="TimeDimension" foreignKey="timeid">
22      <Hierarchy hasAll="true" allMemberName="All Hours" primaryKey="timeid">
23        <Table name="time"/>
24        <Level name="hour" column="hour" uniqueMembers="true" levelType="TimeHours" type="
25          Numeric"/>
26      </Hierarchy>
27    </Dimension>
28    <Dimension name="date" type="TimeDimension" foreignKey="dateid">
29      <Hierarchy hasAll="true" allMemberName="All Dates" primaryKey="dateid">
30        <Table name="date"/>
31        <Level name="Year" column="year" uniqueMembers="true" levelType="TimeYears" type="
32          Numeric"/>
33        <Level name="Month" column="month" uniqueMembers="false" levelType="TimeMonths" type="
34          Numeric"/>
35        <Level name="Day" column="day" uniqueMembers="false" levelType="TimeDays" type="Numeric
36          "/>
37      </Hierarchy>
38    </Dimension>
39    <Dimension name="Member" foreignKey="memberid">
40      <Hierarchy hasAll="true" allMemberName="All Members" primaryKey="memberid">
41        <Table name="member"/>
42        <Level name="memberid" column="memberid" uniqueMembers="true" type="Numeric" />
43        <Level name="Balance" column="balance" uniqueMembers="false" type="Numeric" />
44        <Level name="Year" column="year" uniqueMembers="false" type="Numeric" />
45      </Hierarchy>
46    </Dimension>
47    <Measure name="Sale Amount" column="sale" aggregator="sum" formatString="#,###"/>
48  </Cube>
49 </Schema>
```

We then could answer the following questions:

**How much is bought at some point during some day?**

We can answer this by looking at summarized hours, we look at the hours with the most spent. 28,618,675 Ører has been spent at the 12th hour and 20,400,875 Ører has been spent at the 13th hour.

**How does the amount sold change over time?** We can answer this by looking at individual years and how much is spent them on them.

Year	Sale Amount
1996	187,650
1997	2,359,375
1998	13,696,025
1999	15,180,275
2000	15,763,800
2001	16,402,075
2002	19,679,050
2003	18,017,550
2004	19,876,325
2005	17,882,675
2006	20,225,450
2007	19,932,050
2008	61,650

**When is it best to restock, given low activity?**

We can answer this by looking at which hours have the least activity during 8-16.

Those hours are 8 with 9,632,450 and 16 with 9,981,050.

A better way of answering this would be to look at the weekdays too, but we do not have that field.

**Which product gives the most revenue?**

Name	Sale Amount
$\frac{1}{2}$ L Vand excl. pant	66,970,550
Øl	20,272,250
$\frac{1}{2}$ L Matilde cacao	19,476,750
Kaffe/Choko(1 kop)	11,578,400
Juice	8,738,675

**Which member have spent the most?**

The member that has spent the most is '1704' having spent 1,439,650 Ører.

## 1.2 Task F