# Solution of the Problem3 (Module 3)

## Grain

The grain is: combination of **individual supplier**, **individual product**, **date**.

## Storage Requirements

* 350 Franchise Rows, 200 Franchise Postal Codes: **in a total = 350**
* 20 ServiceCategory rows, 1 Special Event Row: **in a total = 21**
* Days per year: 365, **in a total = 365**
* 50.000 Member Rows, 150 Member Rows\*200 Franchises, 10 MemberType, 500 Member Zip Codes Rows, **in a total = 50000 + 150\*200 = 80000**
* 500 Merchandise Rows, **in a total= 500**
* **100.000** Service Purchase Rows, 300\*200 = **60.000** Special Events Purchase, **450.000** Contains rows
* Total Fact Table Size Increase = 100.000 + 450.000 + 60.000 = 610.000
* Sparsity estimate calculations:
  + 1 - (fact table size / product of dimensions)
  + 1 – (610000 / (350\*21\*500\*365\*80000)) = **0.99999999431**
  + The data cube has less than 1% non-zero cells