3.Identify the grain in your dimensional design using the business needs as a guideline. You should then indicate relative storage requirements for the grain using the statistics for the data sources. Using the cardinality estimates provided, you should determine either the fact table size or sparsity and then compute the unknown grain size variable. For example, you should compute sparsity if the fact table size is given.

* 50000 members: sum of member rows
* 350 franchises: sum of franchises
* 450,000 items sold merchandises (Contains rows) per year
* 500 Unique merchandise items
* 100,000 ServicePurchase rows per year
* 20 Unique ServCategory rows
* 300 SpecialEvents Worksheet rows per year per franchise with 200 franchises using this spreadsheet
* 150 unique customers per special event worksheet
* Merchandise Product sales(item level): 450,000
* Days per year: 365
* Customer number (product) = 50000
* Customer number (service) = 50000
* Customer number (special event) = 200\*150=30000
* Fact table size (merchandize product sales) is determined - 450000 purchases per year (including merchandise product)
* Fact table size (service sales) is determined - 100000 purchases per year (including service)
* Fact table size (special event sales) is determined - 300\*200=60000 purchases per year (including special events)
* Sparsity estimate:
  + 1 - ( fact table size / product of dimensions )
  + (1 – ( 450000 / (500\*50000\*365) ) = 0.9995
  + The data cube has mostly missing cells with slightly more than 0.0005% of cells with non-zero values.
  + 1 - ( fact table size / service of dimensions )
  + (1 – ( 100000 / (20\*50000\*365) ) = 0.997
  + The data cube has mostly missing cells with slightly more than 0.003% of cells with non-zero values.
  + 1 - ( fact table size / special events of dimensions )
  + (1 – ( 60000 / (30000\*365) ) = 0.995
  + The data cube has mostly missing cells with slightly more than 0.005% of cells with non-zero values.