**Question#03**

To estimate the size of the fact table, we need to consider the cardinality estimates provided for the data sources. Based on the given estimates and business needs, we can compute the fact table size as follows:

* **Franchises**: 350 franchises for merchandise sales and 200 franchises for special events 4
* **Products**:

1. Merchandise: 500
2. Service Categories: 20
3. Event Types: 1

Total: 500 + 20 + 1 = 521

* **Customers:**

1. Members: 50,000
2. Corporate Customers: 150 customers x 200 franchises = 30,000

Total: 50,000 + 30,000 = 80,000 assuming no overlap

* **Fact Table Size:**

1. Contains Table: 450,000/year
2. ServicePurchase Table: 100,000/year
3. SpecialEvents Worksheet: 300 events \* 200 franchises = 60,000 events per year

Total rows: 450,000 + 100,000 + 60,000 = **610,000 rows per year**

* **Sparsity:**

=> 1 - (Fact Table Size / Product of Dimensions )

=> 1 - (610,000 / (521\*365\*80,000)) = **0.999959903**