There are 3 exercises in this Set. These exercises are worth 1 point each. They are to be submitted together with the 2nd Set of exercises by the end of week 8. The exercises are not graded, that is you get one point for each completed exercise. There will be 3 sets of exercises for the subject, worth a total of 10% of the subject.

Exercise 1. Dimensional Modelling

You are to construct a star schema for Simplified Automobile Insurance Company. The relevant dimensions, dimension attributes and dimension sizes are as follows:

• Insured Party. Attributes: Insured_Party_ID, Name. There is an average of two insured parties for each policy and covered item.
• Coverage Item. Attributes: Coverage_key, Description. There is an average of 10 covered items per policy.
• Agent. Attributes: Agent_ID, Agent_Name. There is one agent for each policy and covered item.
• Policy. Attributes: Policy_ID, Type. The company has approximately one million policies at the present time.
• Period. Attributes: Date_key, Fiscal_period.

Facts to be recorded for each combination of these dimensions are: Policy_premium, Deductible, and Number_of_transactions.

A: Design a star schema for this problem.

B: Estimate the number of rows in the fact table, using the assumptions stated above. (additional assumptions – Fiscal period= 1 month, 5 years of data in the data mart, 5% of policy’s experience some change each month)

C: Estimate the total size of the fact table, in bytes, assuming an average of 5 bytes per field.

Simplified Automobile Insurance Company would like to add a Claims dimension to its star schema. Attributes of Claim are: Claim_ID, Claim_Description, and Claim_type. Attributes of the fact table are now: Policy_premium, Deductible, and Monthly_claim_total.

D: Extend the star schema to include this new data.

E: Calculate the estimated number of rows in the fact table, assuming that the company experiences an average of 2000 claims per month.

Exercise 2 and 3 are from the Teradata Students Network, downloadable from the Subject Website Assessment Page.