International School of Engineering

Faculty of Engineering Chulalongkorn University

Course ID: 2190436 Course Name: Data Warehousing

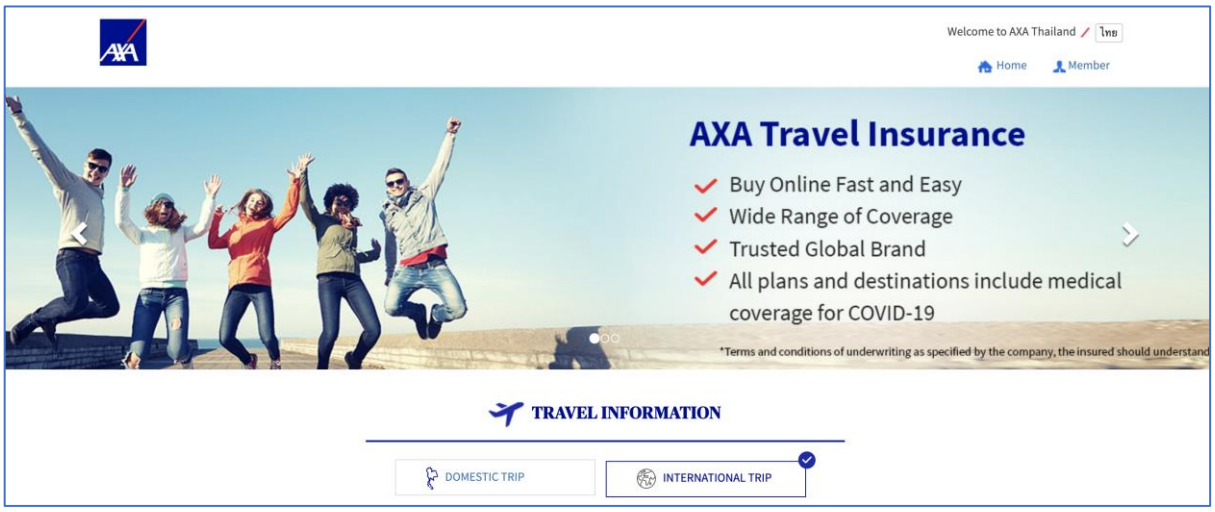
Second Semester, Final Examination, Date: Fri, May 14, 2021 Part 1 (1 hour)

Part1: Improve given data warehouse design (15 points – 1 hour)

**** Please submit answers in PDF format – Part1_{ID}_{FirstName}.pdf ****

Assume we want to improve the given data warehouse design for a travel insurance claim transaction during the abroad trip (e.g., Japan, US, China, etc.) as in a sample policy blow AXA Travel Insurance. The DW model should be able to answer the following questions, e.g.,

- How many times did a customer claim during a trip?
- How much did a customer claim? (the billing amount and the claim amount)?
- What are the details of accident?
- Which country did the accident happen a lot? So, the company can charge higher rate for a trip to a specific country.
- Which period did the accident happen a lot (e.g., Songkran holiday)? So, the company can charge higher rate for a specific travel period.



https://direct.axa.co.th/TA/CoverageOptionPlan?tag=travel-accident-protection

Instruction: You have to explain about the following DW concepts and incorporate them into the initial DW design. You can make your own assumptions (if any, it must be stated in your answer).

1. Mini-dimensions and outriggers for CustomerDim
2. Support multiple currencies
3. Support multiple time zones
4. Incorporate "country specific outrigger" for holiday periods
5. For a staff who is responsible for a claim case, it should support a variable hierarchy depth concept.
6. There are many small flags that should be handled, e.g., payment method (credit card, cash, money transfer), payment policy (full paid, installment), type of treatment (in-hospital, out-hospital), etc.

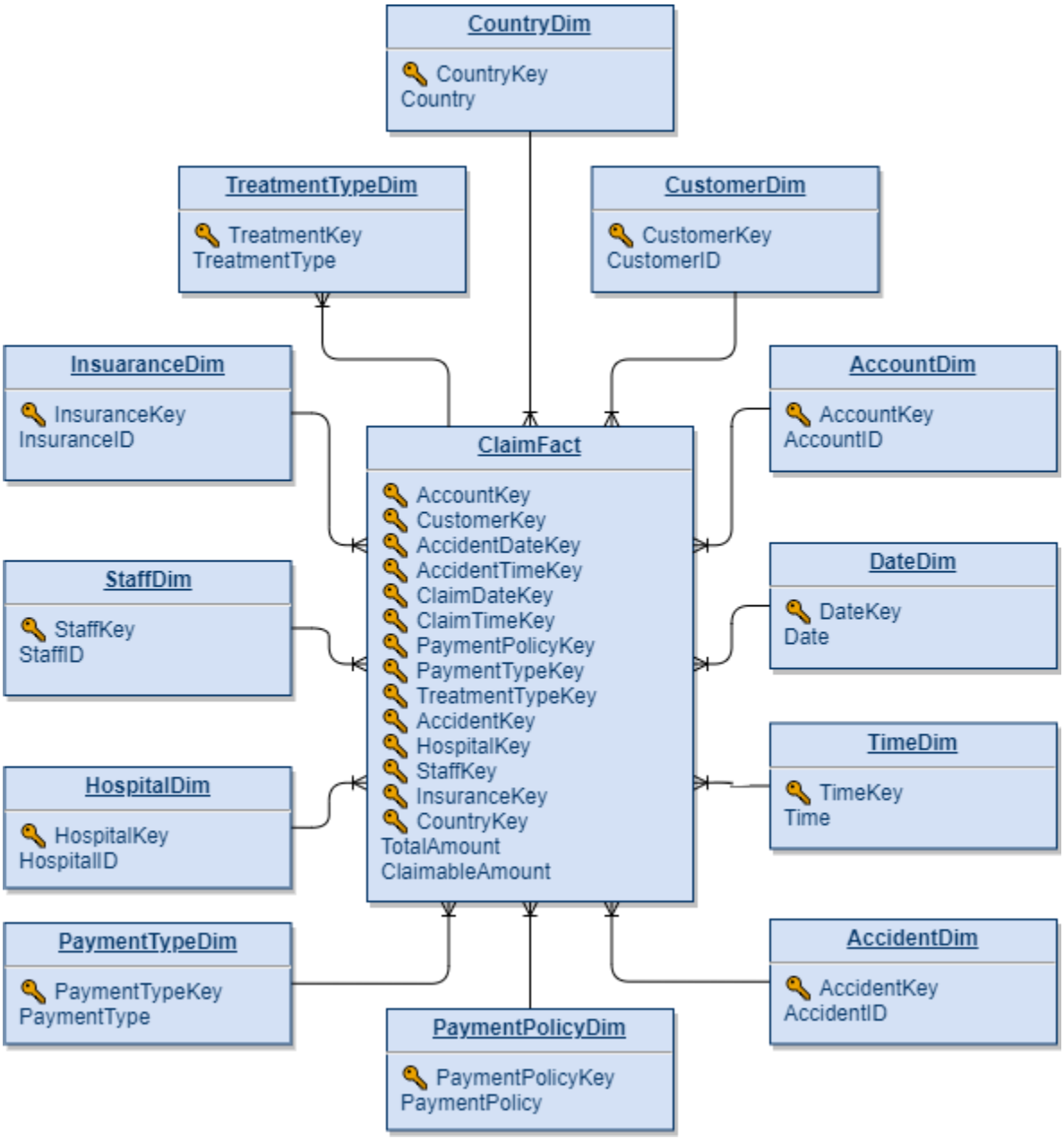


Figure 1. Initial DW diagram for a travel insurance claim transaction, where each row refers to each claim case.

Remarks

- The diagram must be drawn just ONCE at the end along with PK and FK. Also, each DW concept from the instruction must be specified in the diagram. It can be graded ONLY IF we can understand and map it with your diagram. This is important and cannot be negotiable.
- You do NOT need to write all attributes. However, you still need to show important attributes that are related to each DW technique from the instruction.

You are allowed to add more attributes and dimensions to make your design more realistic as long as they don't violate the granularity and problem.