Information Technology Institute
Data Science Track
Data Warehouse Project
(Intake 44/2024)

Project Description

A major airline company decided to hire you in order to assist the executive management to analyze their current business processes and expand the company by discovering new opportunities.

Executives decided that the first deliverable should focus on the flight activity in order to ensure good ongoing business process.
The marketing department wants to analyze what flights the company's frequent flyers take, what fare basis they pay, how often they upgrade, how they earn and redeem their frequent flyer miles, whether they respond to special fare promotions, how long their overnight stays are, and what proportion of these frequent flyers have gold, platinum or titanium status.

Your analysis shall also include the reservation process where finance team will be interested in analyzing the company profit. Note that reservation processes can take place through multiple channels.

Airline company also provides customer care interaction before, within and after your trip in order to handle customer inquiries, complaints and keep their feedback for business enhancements.
Analysis should include interaction type and problem severity (if issue exists)

State the processes for your company then apply your modeling technique/s with demonstrative layering methodology to design the logical and physical design to support such kind of analysis for decision support.

Project Requirements

1. State the modeling process for each business process
2. Using any diagramming tool you like, construct a logical data model for this case study. Output should be an image or PDF. State why did you choose this particular data model design? What does the data represent? (Details about each model component is necessary).
3. Translate the logical data model to a physical data model which includes the following: tables, columns (name, data type), primary indexes, and foreign indexes and state why these types of indexes are used for each column. Output should be an Excel file.
4. Create a table/s in oracle DBMS and populate sample data to be used in your queries.
5. Construct a sample of SQL queries (5 – 8 queries) using your physical model design which can be used to answer possible questions by the decision maker as described in the case-study above. List the business question with each query. Output should be a Word file
6. A report of maximum 2 pages is required to elaborate different types of indexes and partitions used in Data warehousing and their usage.

Deliverables

- A single group ZIP file that meets the projects and report requirements (above).
- Upload the zipped file into Google Drive.
- Project Delivery Date: **30-APR-2024 at 09:59 PM.**

Notes

- For the project, students are free to expand the case-study with different subject areas or possible decision support analysis scenarios which they find relevant or interesting. Bonus marks are awarded for extra features and details added to your project. Incorrect or irrelevant additions will not award any marks!

- Copying projects or parts of a project from another group is not allowed! Only collaborating in the theoretical aspects is allowed and is limited to sharing theoretical references

Best of luck

Teams Distribution

Team 1: Ghaly, Salma, Ahmed ali
Team 2: Esraa, Ali, Ahmed Farid
Team 3: Hussein, Radwa, Marina
Team 4: Ahmed Samy, Abdelrahman Ahmed, Rahaf, Manar
Team 5: Donia, Ahmed Atef, Mariam
Team 6: Jumaa, Feky, Malak
Team 7: Abdelrahman Ashraf, Mark, Mohanad
Team 8: Abdalla, Omar, Hady