PROJECT 1

DATA WAREHOUSE MODELLING

Business Summary

A car rental company has all of their rental activities documented in a mini-database - on a table.

They have been in existence since 2021, but have rented over 1,000 cars to more than 3,000 customers.

They have requested a Data Engineer to move all of their rental history to a **Data Warehouse** for easy analysis.

A sample dataset has been provided for you to plan the schema and create tables.

10Alytics
data & strategy

Your Tasks

You are required to:

Study the business' dataset to derive **facts** and **dimensions.**

Write SQL Commands that will define the above derived tables.

Create an ERD that documents your model.

Leverage Version Control

Sample Dataset

rentersName	rentersEmail	rentersPhone	carModel	carCostPrice	returnStatus	pickUpDate	returnDate	isCarAvailForRe	carRating	PricePerHour	totalRentHours
Chris Lucas	chris.lucas001@mail.co	345-500-992276	Toyota Vios 1.5 G AT White Pearl	38000	returned	2022-10-03	2022-10-04	Yes	3.5	50	16
Ben Reels	ben4reel@yahoo.com	442-211-144566	Toyota Yaris 1.3 E MT	42000	returned	2022-10-03	2022-10-04	Yes	5	42	20
Karen Shipsman	k.shipsman@yahoo.co.uk	656-344-343456	Toyota FJ Cruiser 4.0 V6	35000	returned	2022-10-06	2022-10-06	Yes	5	25	5
Loren Thomas	nowyouknow@email.com	345-687-989898	Toyota Yaris 1.3 E MT	42000	not-returned	2022-10-08	NULL	No	4	42	12
Karen Shipsman	k.shipsman@yahoo.co.uk	656-344-343456	Toyota Vios 1.5 G AT White Pearl	38000	returned	2022-10-08	2022-10-09	Yes	4	50	14

10Alytics
data & strategy

Sample Dataset - Data Dictionary

Column	Description
rentersName	The full name of the customer
rentersEmail	The email address of the customer
rentersPhone	The phone number of the customer
carModel	The model of the rented car
carCostPrice	The amount the rented car was purchased in $. This price never changes.
returnStatus	Indicates if a car was returned or not returned
pickUpDate	The date (YYYY-MM-DD) the rented car was picked up. This column always has a date value
returnDate	The date the car was returned. No date is recorded if the car has not been returned.
isCarAvailForRent	Car availability status.
carRating	The overall rating of the rented car
pricePerHous	Amount in $ for renting the said car per hour
totalRentalHours	Total hours indicated by the customer for rent

10Alytics
data & strategy
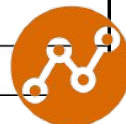
Instructions

Derive at least 3 dimension tables from the dataset.

Derive one fact table from the dataset. Remember, your fact table is based on what the business centers on. (i.e. car rentals)

Document your structure by designing an ERD using any ERD tool of your choice.

Write SQL commands that will create the resulting tables in a Database/Warehouse.

Prefix your dimensions and fact tables with dim_ and ft_ respectively.

Push all of your work to your Github repository.

dim_dates

date

year

month

day

ft_rentals

…

…

…

…

dim_

…

…

…

…

dim_

…

…

…

…
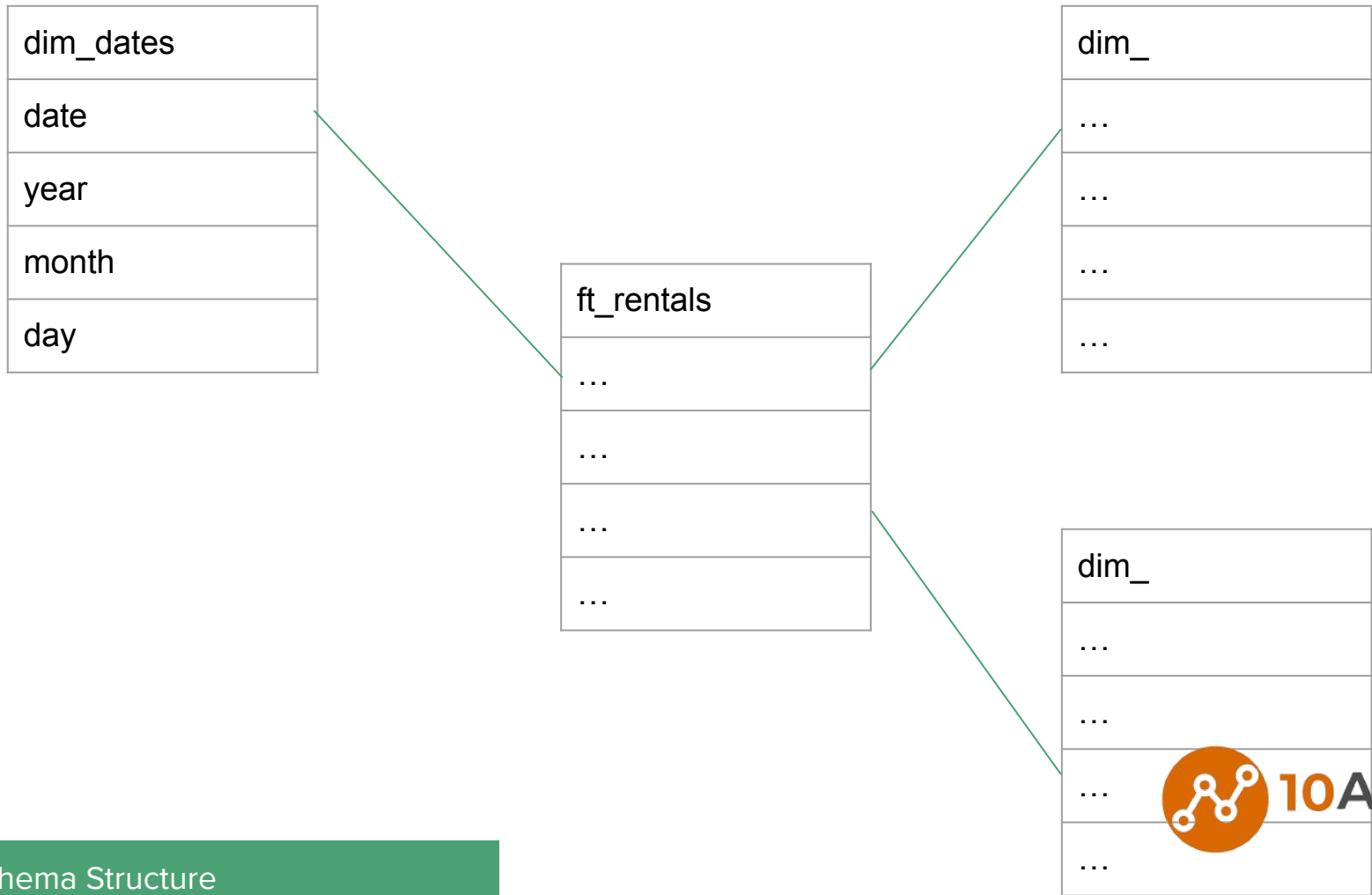
```
CREATE TABLE dim_dates (

        date DATE NOT NULL

        , year INT NOT NULL

        , month INT NOT NULL

        , day INT NOT NULL

)
```