

SEMESTER PROJECT

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ENERGY BILLING ANALYSIS TO IMPROVE PAYMENT OF BILLS

Group Members:

Fakhruddin Saifuddin | 14819

Bilal Ahsan Salam | 14081

Instructor: Dr Tariq Mehmood | First Slot | Tuesday/Thursday

STAGE ONE - Acquiring the Business Knowledge:

Background:

The Billing System in Pakistan for utilities like Electricity, Gas and Water follow very conventional methods. These services are spread across multiple cities and cover a large area.

Comments & Learnings:

When acquiring the business knowledge, we learned that:

- Usually a consumer has to reach out to the provider and sign-up for the service
- There is a measuring device to check usage (for example for KESC there are meters)
- Monthly customers are requested to pay a fee according to their calculated usage
- The collection is mostly done manually through sending receipts and bills to customers

STAGE TWO - Designing The ERD:

Identifying the entities

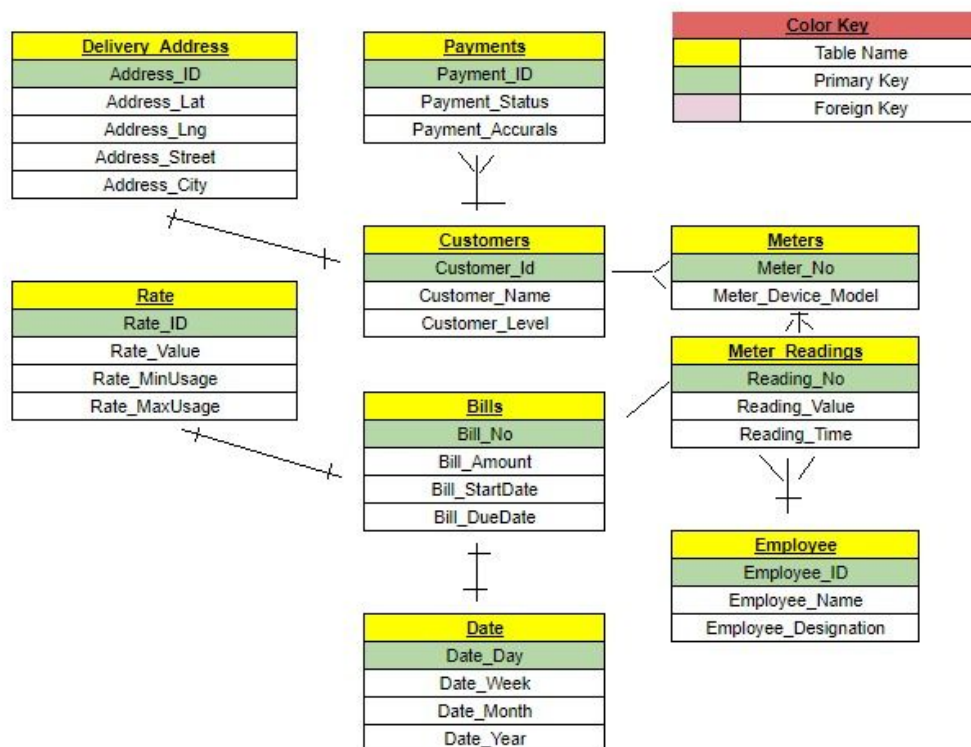
Through the business knowledge that we acquired, we listed down relevant stakeholders as the entities of the ERD:

- Customers (Consumers of the service)
- Meters (Measuring devices)

- Employee (Hired by provider to collect meter readings)
- Bills (Summary sent to customer)
- Payments (Cycle of payments)

Additionally we felt the important entities are necessary in the ERD:

- Delivery Address
- Rate
- Date
- Meter Readings



STAGE THREE -Assumptions in Dimensional Modelling:

Initially, We identified that the billing system and financial transactions are two different processes which is why each would have its own data mart with different entities, facts and dimensions.

When building the Data mart(s) we assumed the following problems need to be solved:

- The collection of meter readings is done manually by an employee of the provider
- There is a certain margin of error as the activity is done manually
- There is no track of retention (customers continued to use the service)
- There is no track of churn of customer (customers no longer using the service)
- The provider is not aware of the issues of over-usage, under-usage
- The provider is not aware of the Change (Delta) in increase in demand every year
- It is difficult to check Bad Debt customers and their arrears
- No budget preparation is done
- There is minimal thought-process for maximizing profitability

Once we have two different data marts, we were able to do separate analysis for financial transactions and separated analysis on usage through billing data mart.

STAGE FOUR - Conclusion:

Once we had acquired the business knowledge, understood the problems, built the ERDs and Dimensional Modelling, we can now:

- Analyze the energy consumption of customers
- Improve our payment of bills
- Utilize our services more efficiently
- Maximize profit
- Internally improve organisational challenges