Problem Description:

- Certain organization's advancements are shared across different channels including email, notices and so forth.
- Some of these campaigns incorporate coupon limits that are offered for a particular item or scope of items.
- The retailer might want the capacity to anticipate whether clients recover the coupons got across channels, which will help the retailer's advertising group to precisely plan coupon builds, and grow progressively exact and focused on promoting techniques.
- The information accessible right now the beneath data, including the subtleties of an example of: **User demographics, Campaign and coupon details, Product details, Previous transactions.**
- In light of past exchange and execution information from the last 18 campaigns, the candidates were suggested to anticipate the **probability of a coupon being reclaimed** on the proper validation cut that should be made.

Data Description:

- **Train**: Contains the coupons offered to the given customers under 18 campaigns.
- **Campaign Data**: Campaign info for each of the 18 campaigns present in the train data.
- **Coupon item mapping**: Mapping of coupon and items valid for discount under that coupon.
- **Customer demographics**: Transaction data for all customers for the duration of campaigns in the train data.
- **Item Data**: Item info for each item sold by retailer.

Summary:

- Customers get coupons under different campaigns and may decide to recover them.
- They can redeem the given coupon for any valid product for that coupon as per coupon item mapping within the duration between camping start date and end date.
- Next, the customer will redeem the coupon for an item at the retailer store and that will reflect in the transaction table in the column **coupon_discount**.

Evaluation Metric:

- The evaluation should be done on the validation slice that you'd create. The metric that needs to be used is the **ROC-AUC** score.

Scoring Parameters:

- Data cleaning and formatting.
- Data merging and wrangling.
- Data Analysis.
- Feature Engineering.
- Validation Strategy.
- ROC-AUC score.

Baseline validation:

- If everything done properly just by proper cleaning and merging without any complex feature engineering, a good baseline model would give an **AUC-ROC score of 0.89.** Better feature engineering could improve it more. Make sure to avoid over-fitting or under-fitting.

Data Entity Relationship Diagram: