Redefining Convenience,
One Swipe at a Time

CARD EASE

ADVANCED POWER BI PROJECT

Credit Card Data Analysis
Project Report

The main objective of this project is to develop a comprehensive credit card weekly dashboard to analyze credit card transactions and customer data and gain insights into key performance metrics, spending patterns, identify trends, detect anomalies, and enhance customer segmentation and targeting. It enables stakeholders to monitor and analyze credit card operations effectively.

STEPS INVOLVED

1. Import data from .csv Files

- Prepare/download .csv files for dataset.
- Create database in an RDBMS like PostgreSQL.
- Create tables in the database and copy data in them from .csv files.

2. Establish connection between SQL Database & Power BI Desktop

- Connect SQL database to Power BI Desktop.
- Import (load) the required tables from the database into Power BI Desktop.

3. Data Processing & DAX Queries

- Perform DAX queries on the data to process it as per requirement.

4. Design Dashboard & Generate Insights

- Design the credit card report dashboard in Power BI Desktop using the data.

SQL Queries to Create and Import Data from .csv Files

STEP-1: Create database and tables in PostgreSQL.
Table 1 - Credit Card Details
Table 2 - Customer Details

```sql
CREATE TABLE cc_detail(
    Client_Num INT,
    Card_Category VARCHAR(20),
    Annual_Fees INT,
    Activation_30_Days INT,
    Customer_Acq_Cost INT,
    Week_Start_Date DATE,
    Week_Num VARCHAR(20),
    Qtr VARCHAR(10),
    current_year INT,
    Credit_Limit DECIMAL(10,2),
    Total_Revolving_Bal INT,
    Total_Trans_Amt INT,
    Total_Trans_Ct INT,
    Avg_Utilization_Ratio DECIMAL(10,3),
    Use_Chip VARCHAR(10),
    Exp_Type VARCHAR(50),
    Interest_Earned DECIMAL(10,3),
    Delinquent_Acc VARCHAR(5)
);
```

```sql
CREATE TABLE cust_detail(
    Client_Num INT,
    Customer_Age INT,
    Gender VARCHAR(5),
    Dependent_Count INT,
    Education_Level VARCHAR(50),
    Marital_Status VARCHAR(20),
    State_cd VARCHAR(50),
    Zipcode VARCHAR(20),
    Car_Owner VARCHAR(5),
    House_Owner VARCHAR(5),
    Personal_Loan VARCHAR(5),
    Contact VARCHAR(50),
    Customer_Job VARCHAR(50),
    Income INT,
    Cust_Satisfaction_Score INT
);
```

STEP-2: Copy data from .csv files into the tables.

```sql
COPY cc_detail
FROM 'E:\Projects\Project-2 (CardEase)\credit_card.csv'
DELIMITER ','
CSV HEADER

SELECT * FROM cc_detail

COPY cust_detail
FROM 'E:\Projects\Project-2 (CardEase)\customer.csv'
DELIMITER ','
CSV HEADER

SELECT * FROM cust_detail
```

STEP-3: Insert additional data into the database using COPY function.

```
-- copy additional data (week-53) in cc_detail table

COPY cc_detail
FROM 'D:\cc_add.csv'
DELIMITER ','
CSV HEADER;


-- copy additional data (week-53) in cust_detail table

COPY cust_detail
FROM 'D:\cust_add.csv'
DELIMITER ','
CSV HEADER;
```

DAX Queries

```
AgeGroup = SWITCH(
    TRUE(),
    'public cust_detail'[customer_age] < 30, "20-30",
    'public cust_detail'[customer_age] >= 30 && 'public cust_detail'[customer_age] < 40, "30-40",
    'public cust_detail'[customer_age] >= 40 && 'public cust_detail'[customer_age] < 50, "40-50",
    'public cust_detail'[customer_age] >= 50 && 'public cust_detail'[customer_age] < 60, "50-60",
    'public cust_detail'[customer_age] >= 60, "60+",
    "unknown"
    )
```

```
IncomeGroup = SWITCH(
    TRUE(),
    'public cust_detail'[income] < 35000, "Low",
    'public cust_detail'[income] >= 35000 && 'public cust_detail'[income] <70000, "Med",
    'public cust_detail'[income] >= 70000, "High",
    "unknown"
)
```

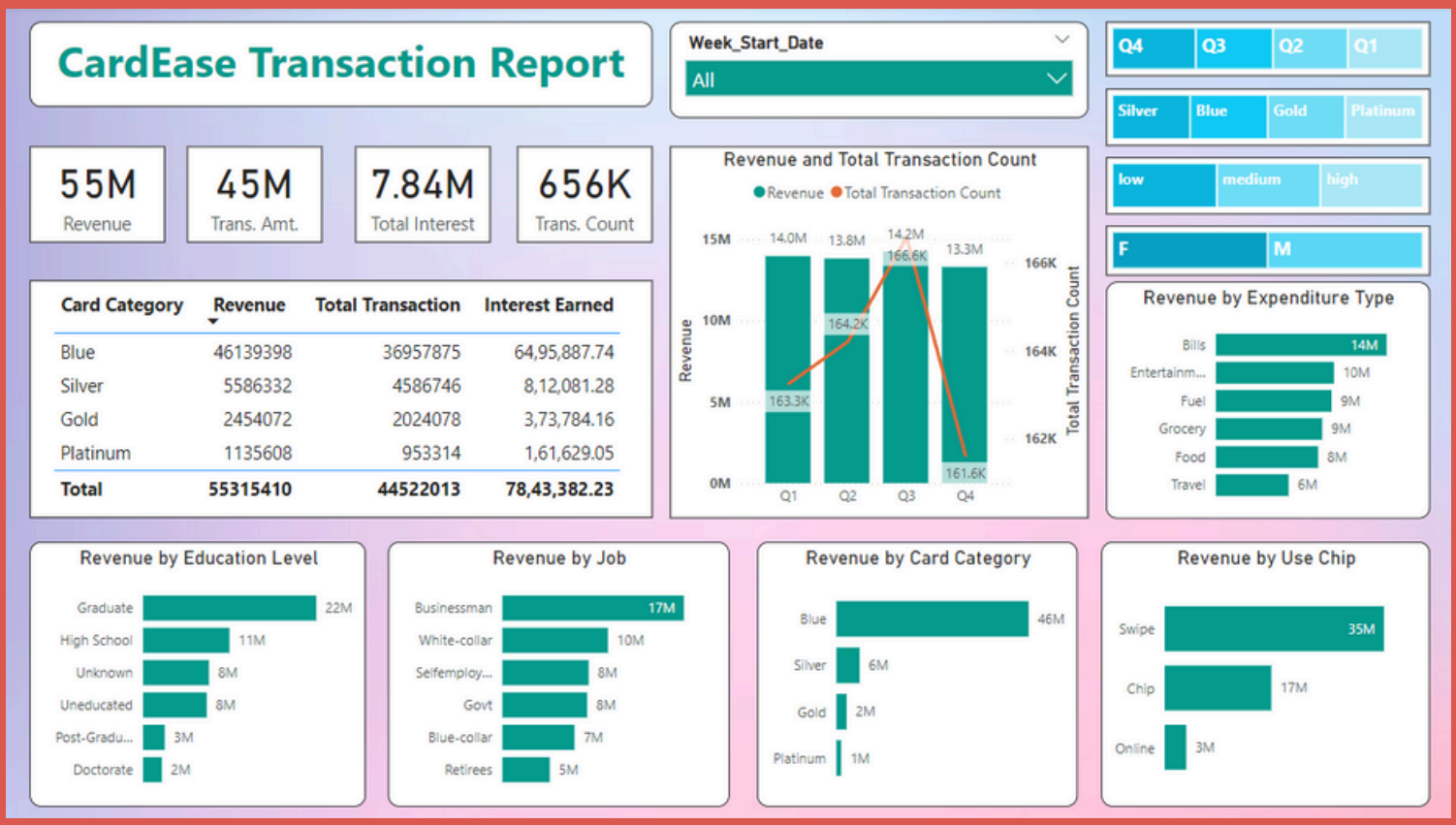
```
week_num2 = WEEKNUM('public cc_detail'[week_start_date])

Revenue = 'public cc_detail'[annual_fees] + 'public cc_detail'[total_trans_amt] + 'public cc_detail'[interest_earned]
```

```
Current_week_Reveneue = CALCULATE(
   SUM('public cc_detail'[Revenue]),
   FILTER(
      ALL('public cc_detail'),
      'public cc_detail'[week_num2] = MAX('public cc_detail'[week_num2])))
```

```
Previous_week_Reveneue = CALCULATE(
   SUM('public cc_detail'[Revenue]),
   FILTER(
      ALL('public cc_detail'),
      'public cc_detail'[week_num2] = MAX('public cc_detail'[week_num2])-1))
```

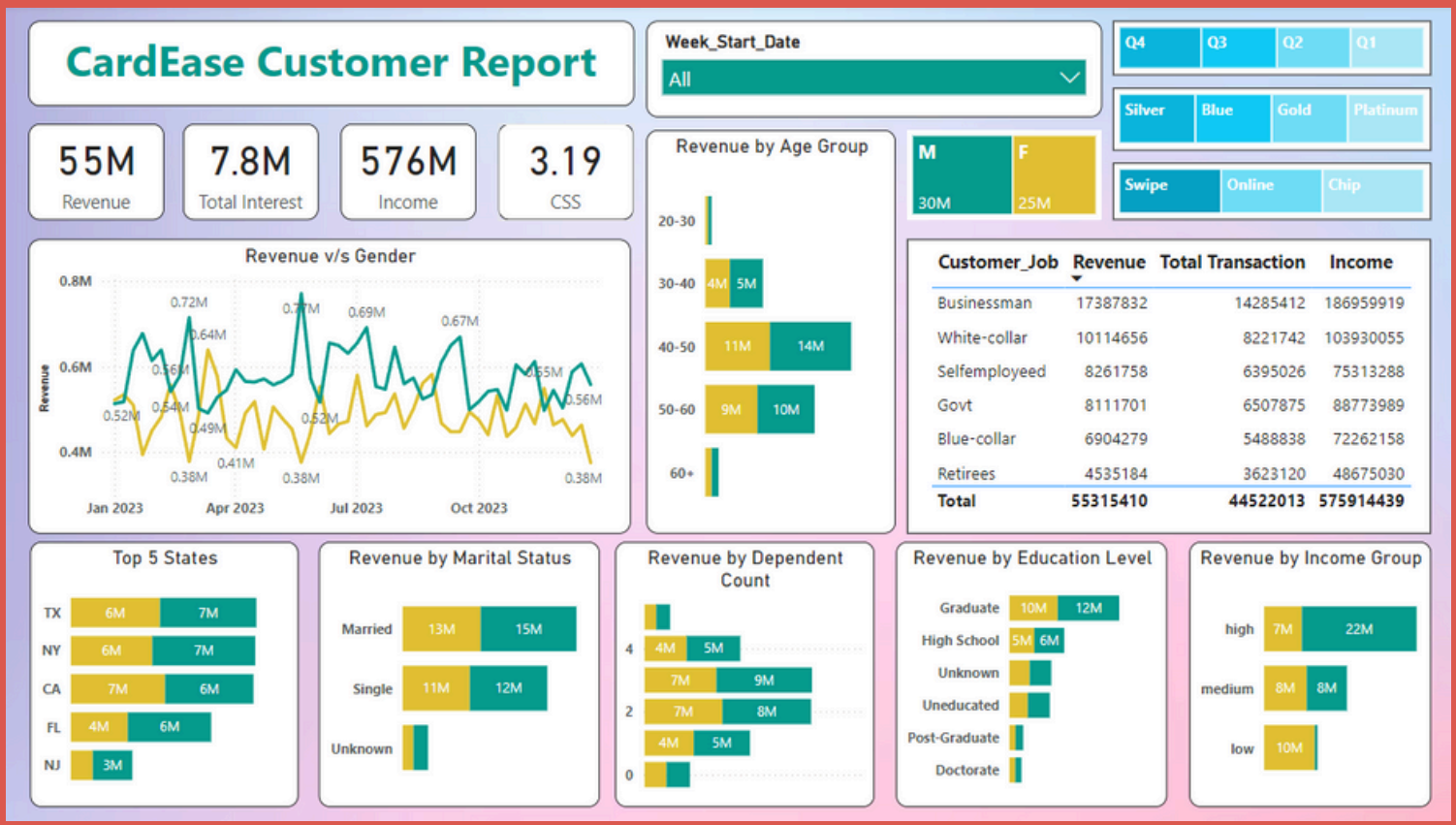
DASHBOARD

Page 1 - Credit Card Transaction Report



Card Category	Revenue	Total Transaction	Interest Earned
Blue	46139398	36957875	64,95,887.74
Silver	5586332	4586746	8,12,081.28
Gold	2454072	2024078	3,73,784.16
Platinum	1135608	953314	1,61,629.05
Total	**55315410**	**44522013**	**78,43,382.23**

Page 2 - Credit Card Customer Report



Customer_Job	Revenue	Total Transaction	Income
Businessman	17387832	14285412	186959919
White-collar	10114656	8221742	103930055
Selfemployeed	8261758	6395026	75313288
Govt	8111701	6507875	88773989
Blue-collar	6904279	5488838	72262158
Retirees	4535184	3623120	48675030
Total	**55315410**	**44522013**	**575914439**

PROJECT INSIGHTS

Week 53 (31st Dec)

WoW change:

- Revenue increased by 28.8%,
- Total Transaction Amt & Count increased by 35.03% & 3.39%
- Customer count increased by 12.80%

Overview YTD:

- Overall revenue is 57M
- Total interest is 8M
- Total transaction amount is 46M
- Male customers are contributing more in revenue 31M, female 26M
- Blue & Silver credit card are contributing to 93% of overall transactions
- TX, NY & CA is contributing to 68%
- Overall Activation rate is 57.5%
- Overall Delinquent rate is 6.06%