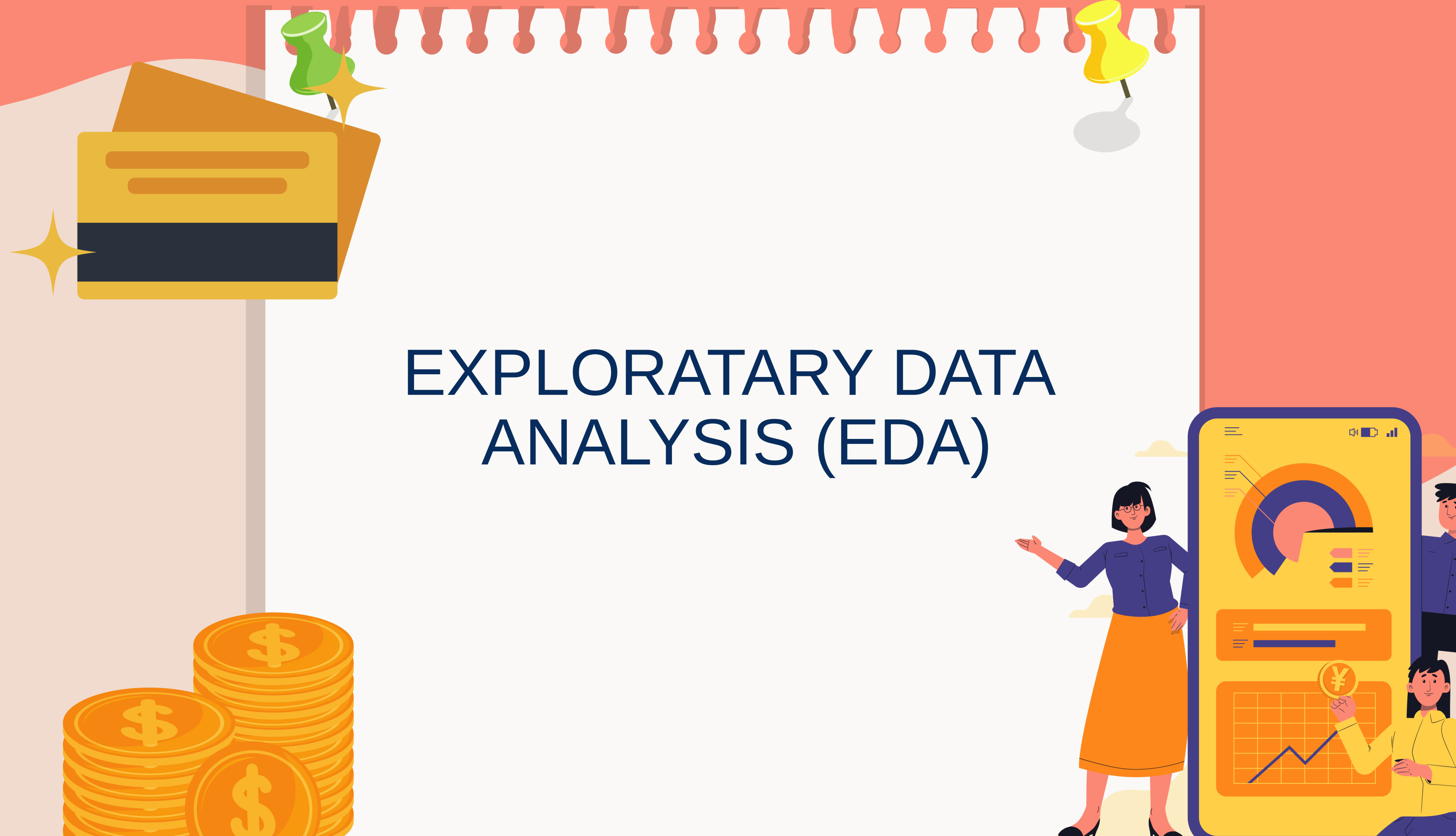
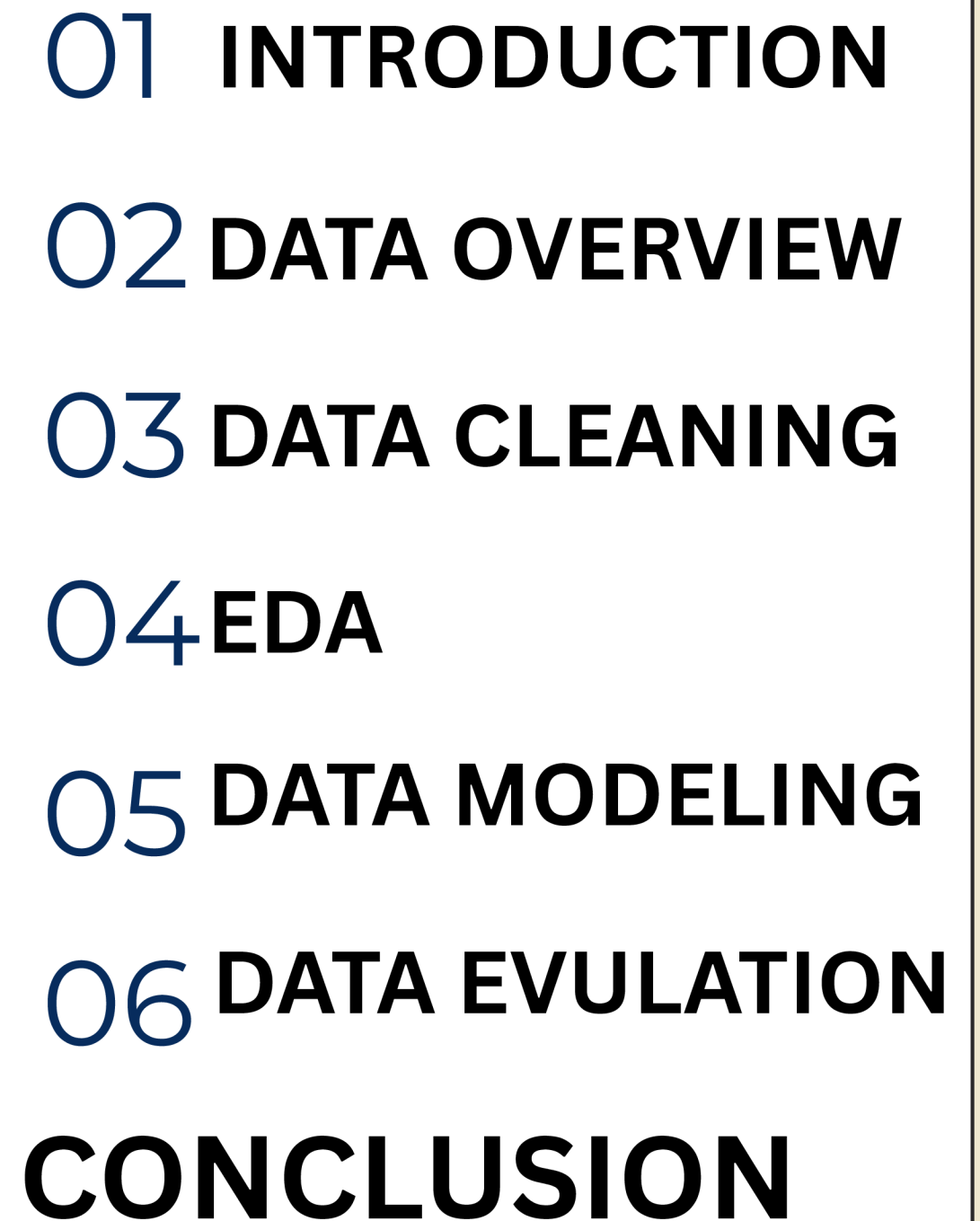


# EXPLORATORY DATA ANALYSIS (EDA)



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# INTRODUCTION

**CUSTOMER CHURN REFERS TO WHEN CUSTOMERS STOP DOING BUSINESS WITH A COMPANY. THIS ANALYSIS AIMS TO UNDERSTAND FACTORS LEADING TO CUSTOMER CHURN AND PREDICT THE LIKELIHOOD OF CUSTOMERS LEAVING USING MACHINE LEARNING MODELS.**



# DATA OVERVIEW

**- DATASET USED: CUSTOMER CHURN.CSV- LIBRARIES USED: PANDAS, NUMPY, MATPLOTLIB, SEABORN INITIAL STEPS:- LOADED THE DATASET- DISPLAYED FIRST FEW ROWS USING DF.HEAD()- INSPECTED DATA TYPES AND MISSING VALUES USING DF.INFO()**

# DATA CLEANING



- **FOUND BLANK ENTRIES IN TOTALCHARGES WHERE TENURE WAS 0**
- **REPLACED BLANK SPACES IN TOTALCHARGES WITH 0.**
- **- CONVERTED TOTALCHARGES COLUMN TO FLOAT TYPE**
- **VERIFIED CHANGES WITH ANOTHER DF.INFO() CALL.**

# EDA

- SENIOR CITIZENS HAVE A HIGHER CHURN RATE.-**
- CUSTOMERS WITHOUT INTERNET SERVICE CHURN**
- LESS.- MONTH-TO-MONTH CONTRACT CUSTOMERS**
- CHURN MORE.- CUSTOMERS WITH FIBER OPTIC**
- INTERNET TEND TO CHURN MORE.**

# MODEL BUILDING

**MODELS BUILT:- LOGISTIC REGRESSION-  
RANDOM FOREST CLASSIFIER- SUPPORT  
VECTOR MACHINE (SVM)**

# MODEL EVALUATION

**RESULTS:- LOGISTIC REGRESSION**

**ACCURACY: MODERATE- RANDOM FOREST**

**CLASSIFIER ACCURACY: HIGHER- SVM**

**ACCURACY: GOOD BUT SLIGHTLY LOWER  
THAN RANDOM FOREST**



# CONCLUSION

- MONTH-TO-MONTH CONTRACTS, FIBER OPTIC SERVICES, AND BEING A SENIOR CITIZEN SIGNIFICANTLY INCREASE THE CHANCES OF CHURN.- COMPANIES SHOULD FOCUS ON OFFERING LONG-TERM CONTRACTS, ENHANCING FIBER SERVICE QUALITY, AND ADDRESSING SENIOR CITIZEN NEEDS TO REDUCE CHURN**

**THANK  
YOU**

The background features a solid coral color. In the top-left corner, there is a dark blue curved shape. On the right side, there is a large, irregular beige shape with a dark brown outline, resembling a splash or a stylized figure. The text 'THANK YOU' is positioned on the left side of the image.