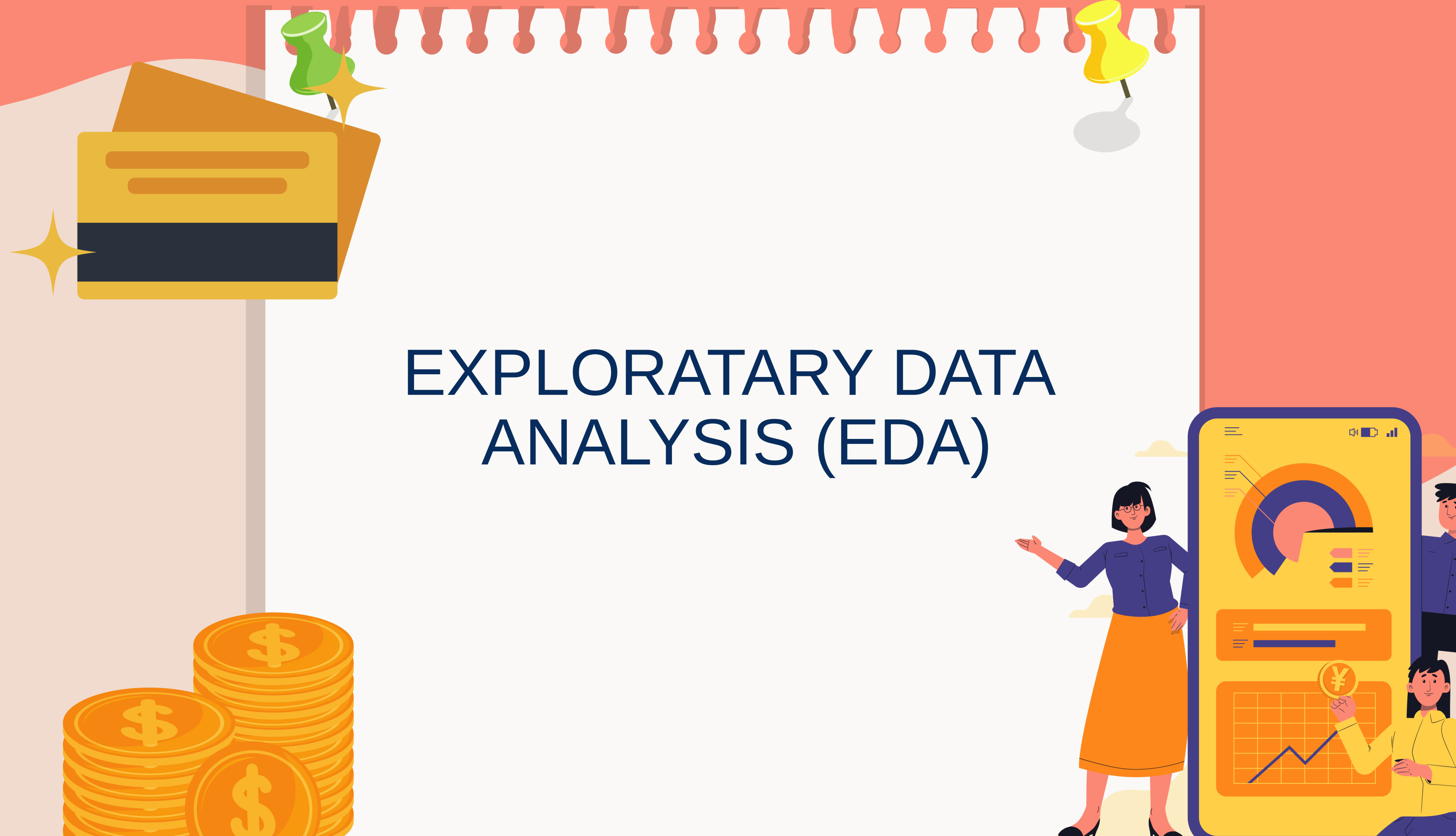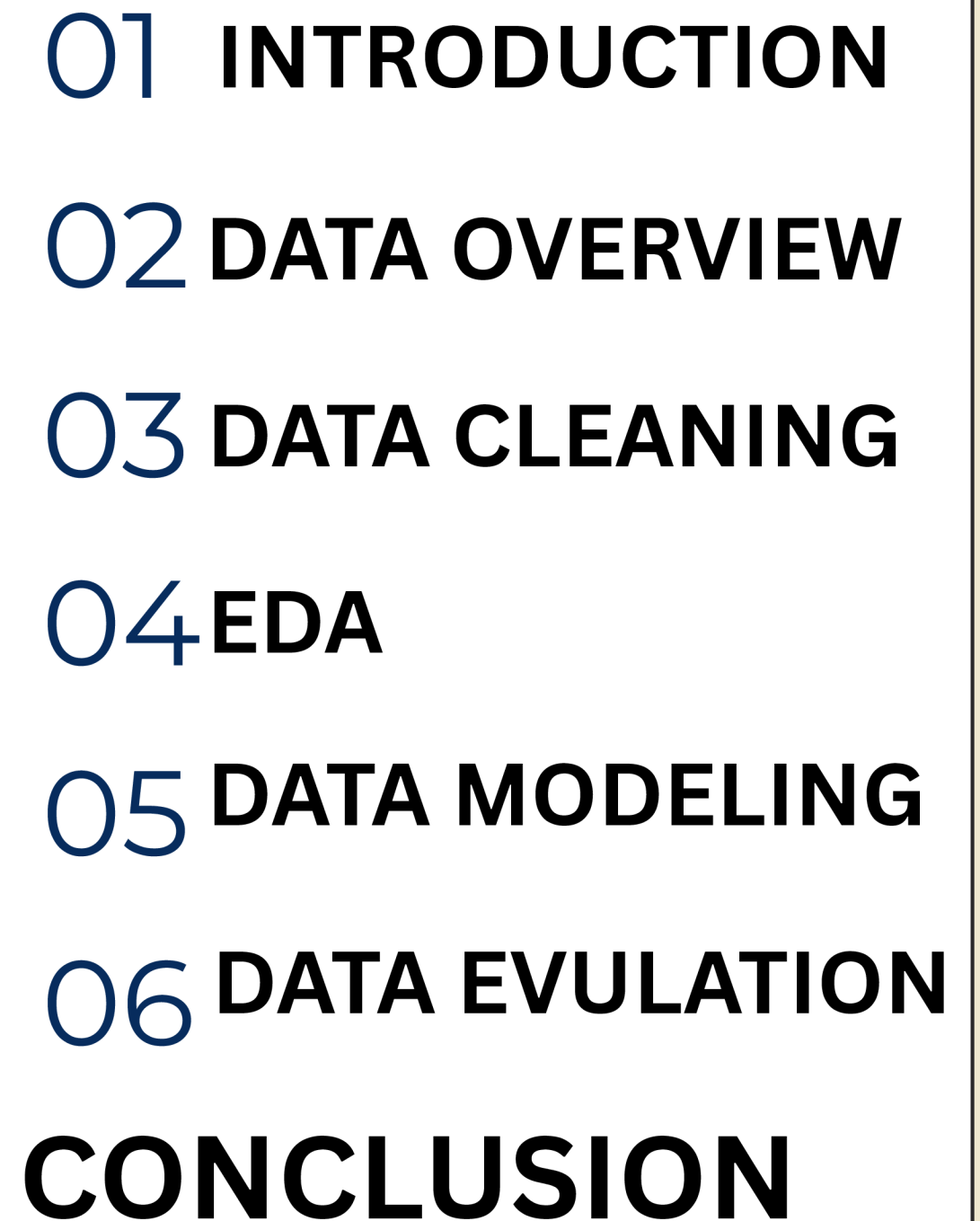# EXPLORATARY DATA ANALYSIS (EDA)

TABLE OF CONTENT

This is the material point that will be delivered in the presentation

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