



Module 4 – Fitness Centre

TA Material: Data Science for Consulting



Part 1: EDA

Q1: Perform steps 1-5 of Exploratory Data Analysis.

- EDA is one of the first steps we take in trying to familiarize ourselves with the data
- Can use either Tableau or Python to do so

Data Assessment

EXPLORATORY DATA ANALYSIS STEPS

1. Calculate Descriptive Stats of every (relevant) variable
2. Create histograms for each variable
3. Note variable type (categorical, numeric, other), outliers, extreme values, need for transformations or data anomalies
4. Develop questions about meta data, anomalies, and confirm transformations/corrections
5. Perform segmentation, cross-tabs and visualizations
6. Consider Classification or Clustering if basic segmentation is not sufficient
7. Note insights, correlations, and anomalies – discuss with client
8. ID Labels and Target Variables for potential model development
9. Summarize/Insights
10. Develop Economic estimates, sizing and other business overlays to segments and predictive models.

Data Description

Target variable: Default

Default	Churn (1), No Churn (0)	Categorical
Enrolldt	Enrolment Date	
Price	Annual Cost	Numerical
downpmt	Down payment made	Numerical
Month Due		Numerical
Payment Type	Method of payment	Categorical
Use	Binned frequency of use (0 is lowest, 8 is highest frequency of use)	Categorical
Age	Clean up ages extra young (<16), or too old (99+)	Numerical
Gender	Female(1), Male (0)	Categorical

Tableau Instructions (optional)

[1.Download the latest version of Tableau Desktop and Tableau Prep Builder here](#)

2.Click on the link above and select “Download Tableau Desktop” and “Download Tableau Prep Builder”. On the form, enter your school email address for Business E-mail and enter the name of your school for Organization.

3.Activate with your product key: TC1R-AD20-D9E0-071F-D35C

4.Already have a copy of Tableau Desktop installed? Update your license in the application: Help menu → Manage Product Keys

Are your students new to Tableau? Share our free [Student Resource Page](#) to help them get started.

Students can continue using Tableau after the class is over by individually requesting their own one-year license through [Tableau for Students](#).



Part 2(i): Understanding Client Problem & Solution

Q2. State the problem described by the client & desired outcomes.

- Watch video '4.1 Fitness Center CMO' under Modules on Canvas
- Try to apply the 'SMART' framework and break down the client problem and solution into individual components



Part 2(ii): Understanding Business Environment

Q3. Describe your hypothesis identifying the business drivers (influences)

- Identify trends and insights from your EDA. Look at the distribution of variables.
- See how these variables fit in as internal and external factors affecting the business. Additionally think of other business drivers affecting the fitness center industry
- Look at the competitor landscape and their business model



Part 3(i): Understanding Modeling

Q4. Identify data issues that might influence model selection

- Watch video '4.2 Model Development' under Modules on Canvas
- Additionally, think about data quality, consistency and try to link your insights from EDA. Is data balanced?
- Understand the target variable type and how it influences model selection



Part 3(ii): Understanding Modeling

Q4. Identify all factors that might influence model selection process

- Watch video '4.2 Model Development' under Modules on Canvas
- Assume you have 3 weeks you are spending with this client (since we are using the same dataset for assignment 5 and 6 too). Try to think of the very first steps and questions you would ask a client before you start on the project:
 - Time
 - Data Quality & Availability
 - Client Analytic Maturity
 - Scope Agreement & Management
 - Life Cycle View or Next Stage Opportunity



Helpful Tips & Past Resources

- Answer all questions in a Word file. Submit as PDF or word
- Feel free to include screenshots of EDA from Tableau (no need to submit Tableau workbook)
- If you are providing a Jupyter notebook, please make sure it is in a HTML format only

Resources (Especially Great for Assignment 5 & 6, check them out for additional information on Assignment 4!):

- High-level presentation on logistic regression and problem
- Sample code solution (from a different business case)- you can use it for reference and ideas
- Detailed video showing step- by- step process of building the model : [link](#)