

WELCOME



GYM MEMBERSHIP

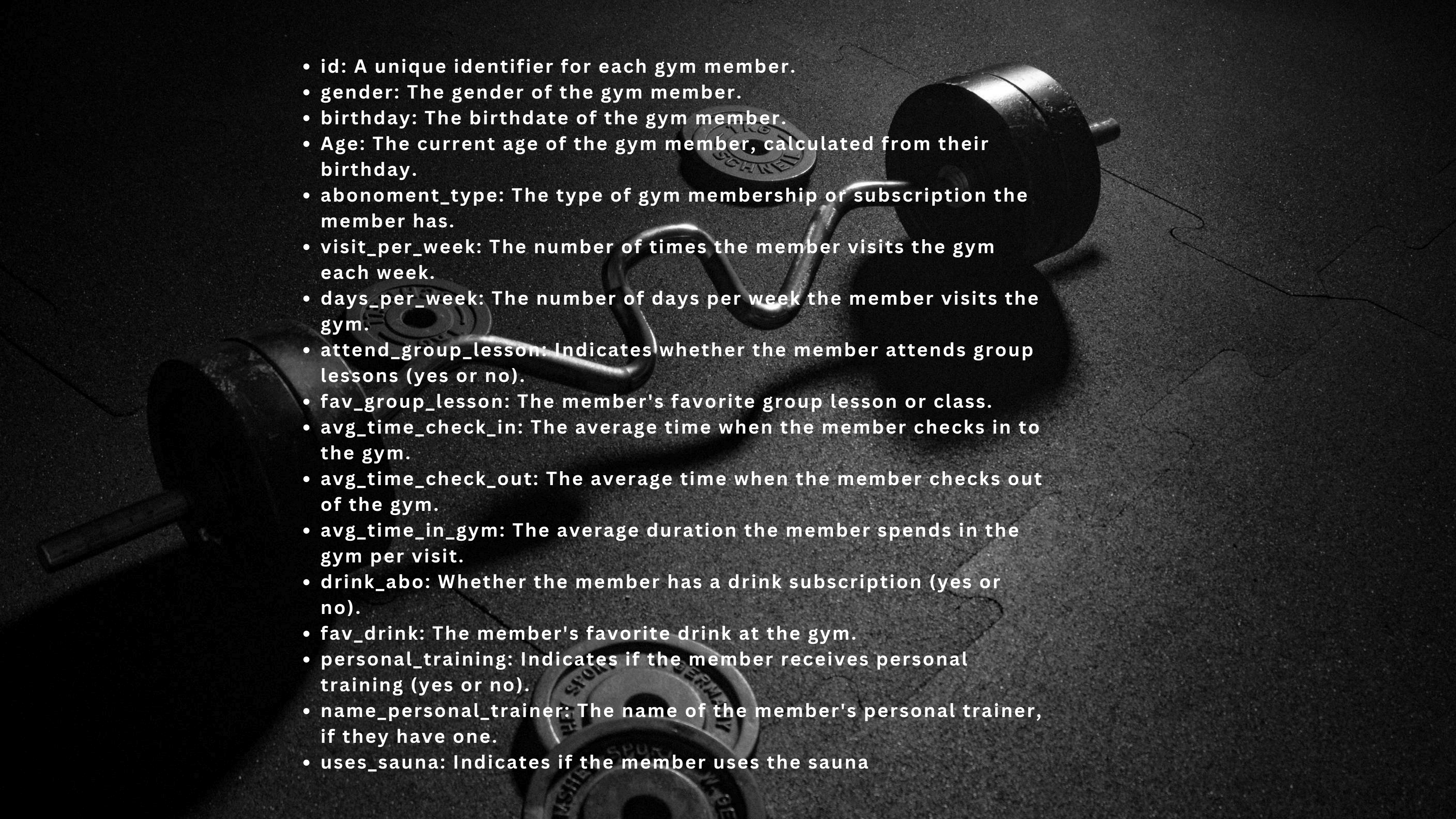
**BY -
LINGESH**



Project Overview:

This dataset provides a simulated representation of membership data for a gym, crafted specifically for those interested in honing their skills in exploratory data analysis (EDA). The data is structured to facilitate the discovery of key membership patterns and trends, making it an ideal resource for exercises in data cleaning, visualization, and pattern recognition



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- **id:** A unique identifier for each gym member.
 - **gender:** The gender of the gym member.
 - **birthday:** The birthdate of the gym member.
 - **Age:** The current age of the gym member, calculated from their birthday.
 - **abonoment_type:** The type of gym membership or subscription the member has.
 - **visit_per_week:** The number of times the member visits the gym each week.
 - **days_per_week:** The number of days per week the member visits the gym.
 - **attend_group_lesson:** Indicates whether the member attends group lessons (yes or no).
 - **fav_group_lesson:** The member's favorite group lesson or class.
 - **avg_time_check_in:** The average time when the member checks in to the gym.
 - **avg_time_check_out:** The average time when the member checks out of the gym.
 - **avg_time_in_gym:** The average duration the member spends in the gym per visit.
 - **drink_abo:** Whether the member has a drink subscription (yes or no).
 - **fav_drink:** The member's favorite drink at the gym.
 - **personal_training:** Indicates if the member receives personal training (yes or no).
 - **name_personal_trainer:** The name of the member's personal trainer, if they have one.
 - **uses_sauna:** Indicates if the member uses the sauna

- **INFO**

Using the `.info()` function in Pandas provides a concise summary of your DataFrame, giving you insights into the structure, data types, and presence of missing values in each column. This is a crucial step in EDA as it helps you understand the dataset's overall structure and identify any potential issues that need to be addressed.



4.ISNULL FUNCTION

The info() function provides a summary of the DataFrame, including data types, non-null counts,

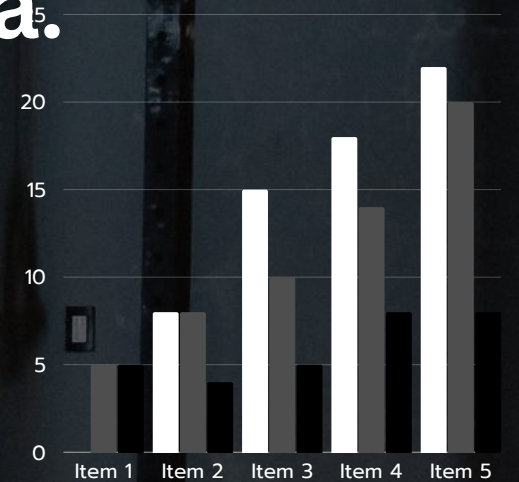


- id 0
- gender 0
- birthday 0
- Age 0
- abonoment_type 0
- visit_per_week 0
- days_per_week 0
- attend_group_lesson 0
- fav_group_lesson 497
- avg_time_check_in 0
- avg_time_check_out 0
- avg_time_in_gym 0
- drink_abo 0
- fav_drink 504
- personal_training 0
- name_personal_trainer 482
- uses_sauna 0

6. TYPE OF VISUALIZATION

To visualize the various columns in your dataset using matplotlib.pyplot, we can create different types of plots such as bar charts, histograms etc.. This will help you understand the distribution and relationships within the data.

- Histogram: For numerical data like Age, visit_per_week, days_per_week, etc.
- Bar Chart: For categorical data like gender, abonoment_type, attend_group_lesson, etc.
- Box Plot: To understand the distribution and detect outliers in avg_time_in_gym.
- Scatter Plot: To examine relationships between two numerical variables like avg_time_check_in and avg_time_check_out.



5.FILL MISSING VALUES

- Filling missing values for numerical columns with the mode is a bit unconventional because mode is typically used for categorical data. However, if you have a specific reason to do so, here's how you can achieve that.
- First, let's identify the numerical columns and then fill their missing values with the mode of each column.

Hypothesis

One-Sample T-Test:

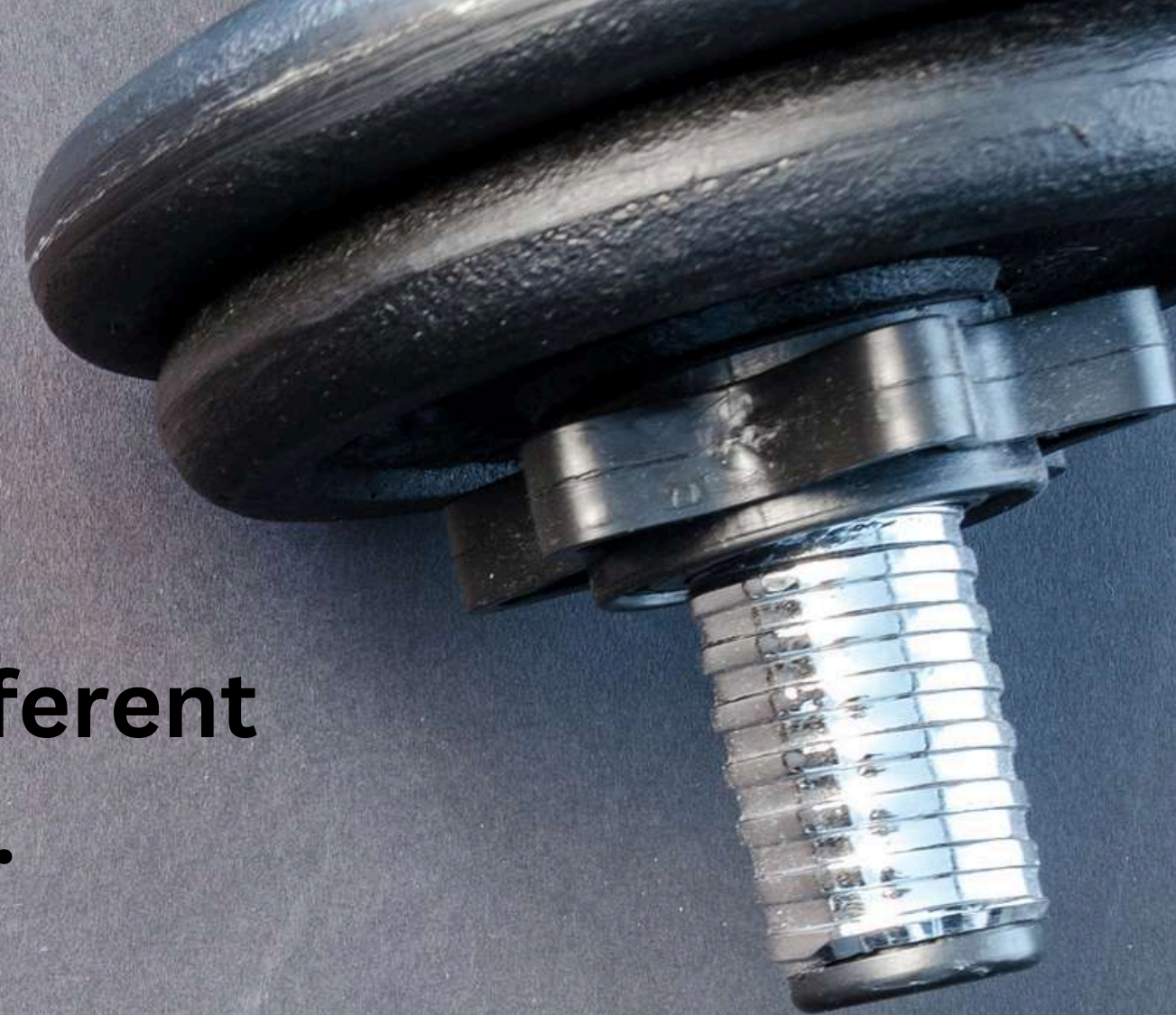
Tests whether the mean of a single sample is different from a known or hypothesized population mean.

- Null Hypothesis (H_0):

The mean age of the gym members is equal to the hypothesized mean age.

- Alternative Hypothesis (H_1):

The mean age of the gym members is different from the hypothesized mean age.



• Overall Conclusion:

Combining EDA, visualizations, and hypothesis testing provides a thorough understanding of the gym membership dataset. The analysis reveals insights into member demographics, preferences, and behavior patterns.





Thank You

FOR YOUR ATTENTION

