M01 - Foundations of Data Analytics

Live Lesson Challenge

Data Detectives: Uncovering Types, Trends, and Insight

Objective: Evaluate understanding of basic data analytics concepts and data interpretation skills.

Dataset: FitTech Gym Member Profile

FitTech, a modern fitness center, has provided a sample dataset of 10 members. Here's the dataset:

Member ID	Age	Monthly Fee ($)	Visits per Month	Profession	Membership Type	Join Date	Uses App	Has Personal Trainer	Meeting Goals
1	24	45	12	Student	Basic	2023-01-15	Yes	No	TRUE
2	38	85	20	Manager	Premium	2023-01-20	Yes	Yes	TRUE
3	45	65	8	Teacher	Basic	2023-01-10	No	No	FALSE
4	29	85	15	Nurse	Premium	2023-01-25	Yes	Yes	TRUE
5	52	45	4	Doctor	Basic	2023-01-12	No	No	FALSE
6	33	85	16	Engineer	Premium	2023-01-18	Yes	Yes	TRUE
7	28	65	10	Designer	Basic	2023-01-22	Yes	No	FALSE
8	41	85	18	Lawyer	Premium	2023-01-28	Yes	Yes	TRUE
9	35	45	6	Writer	Basic	2023-01-14	No	No	FALSE
10	47	85	22	Consultant	Premium	2023-01-30	Yes	Yes	TRUE

Tasks:

1. **Variable Analysis:**

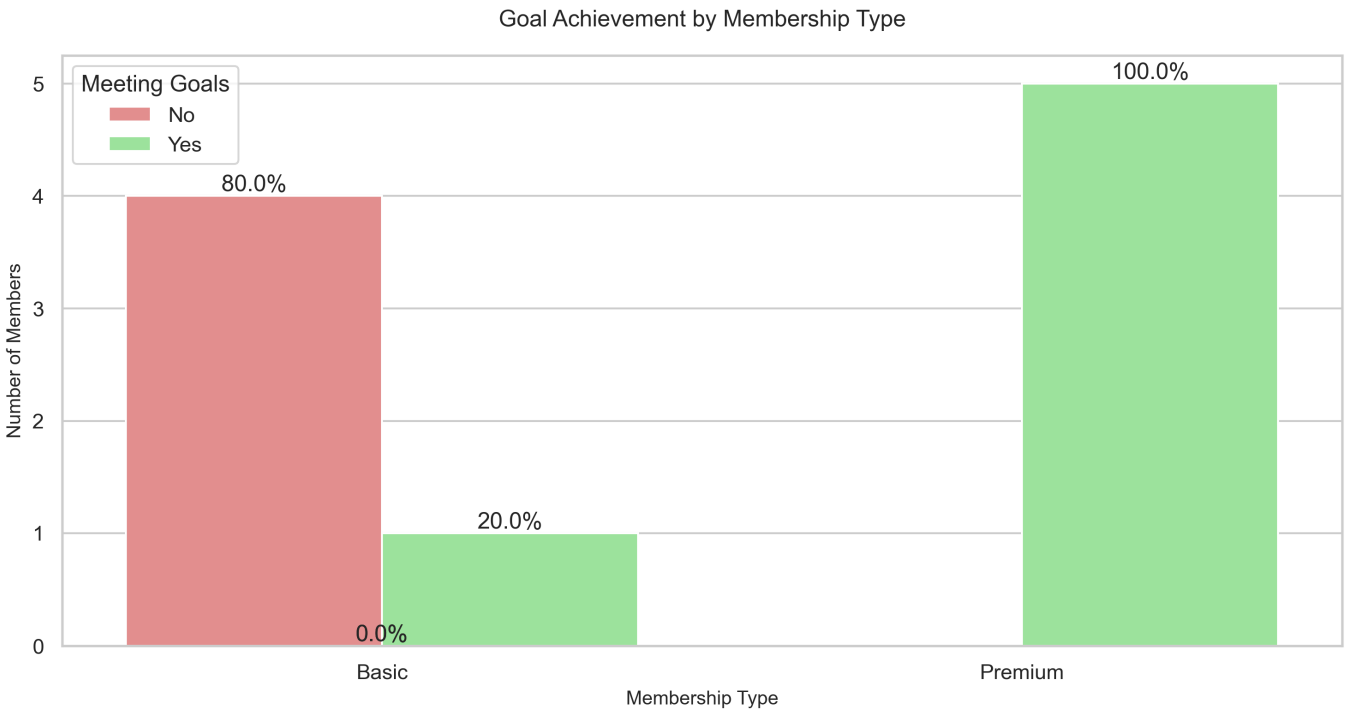
- Identify the types of variables in the dataset (qualitative/quantitative, continuous/discrete, nominal/ordinal)
- List which variables would be suitable for different types of statistical analyses

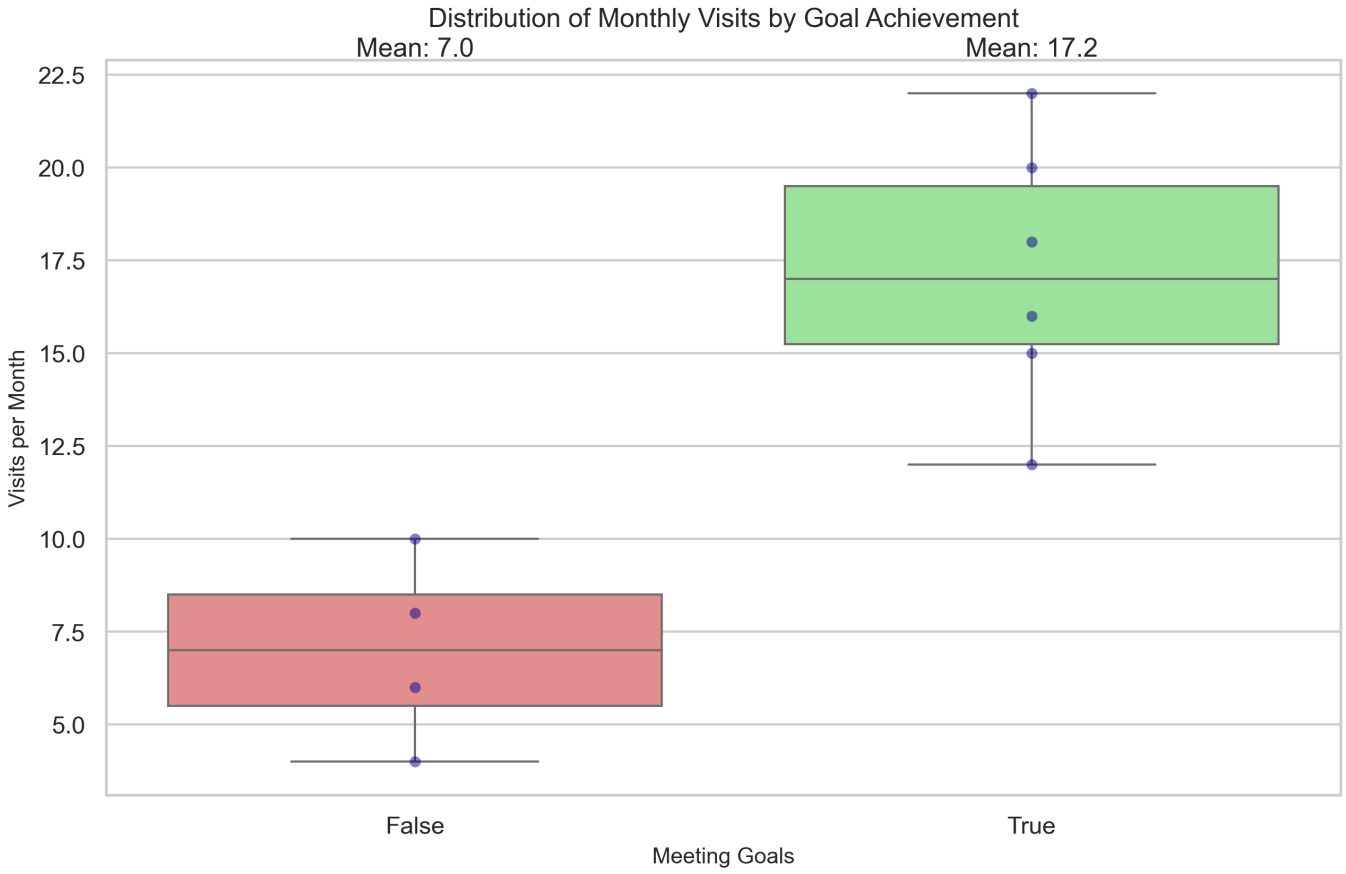
2. **Basic Calculations:**

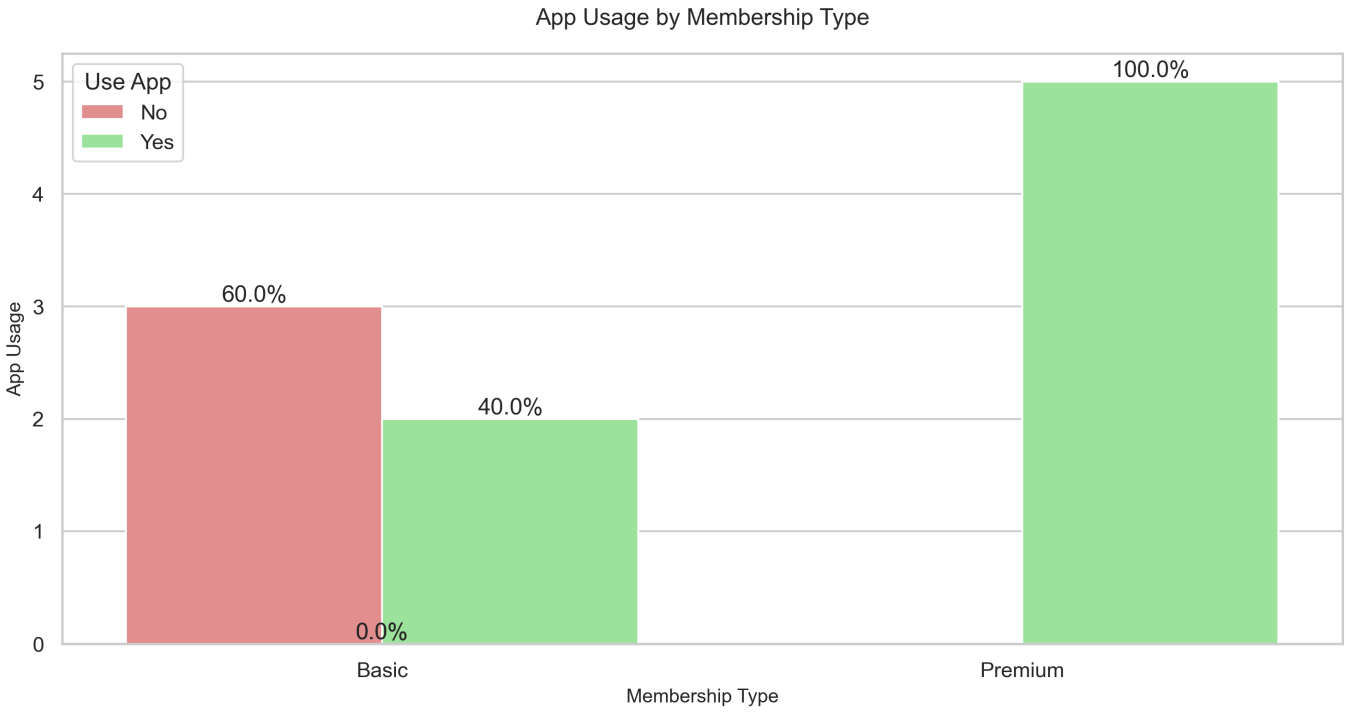
- Calculate the average monthly fee
- Find the median number of visits per month
- Determine the percentage of members who are meeting their goals

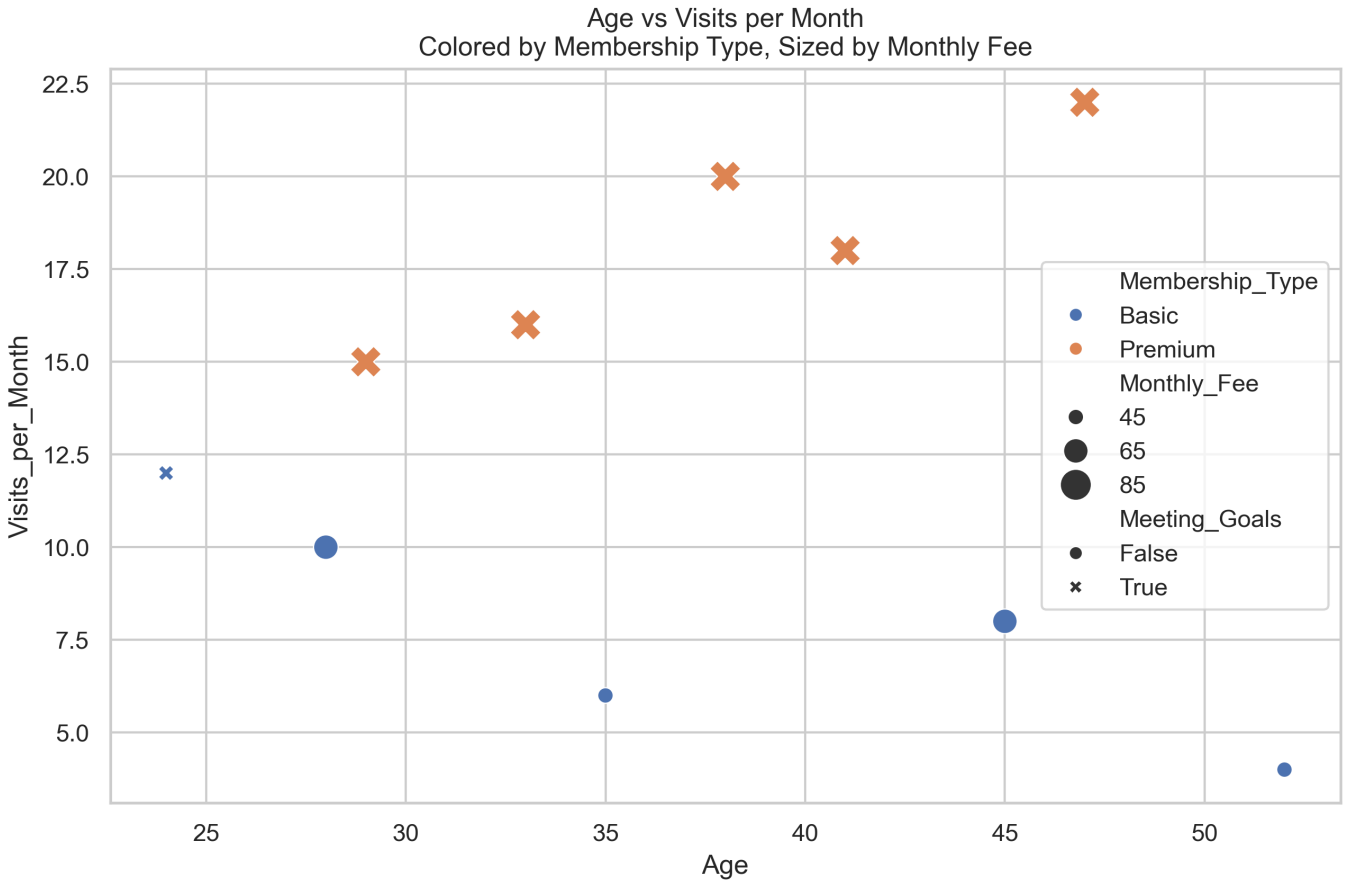
3. **Data Interpretation:** (Use the visualizations below)

- What relationship do you observe between membership type and meeting goals?
- Is there any apparent correlation between monthly visits and meeting goals?
- What patterns do you notice about app usage across different membership types?


Goal Achievement by Membership Type
Meeting Goals
No
Yes
80.0%
20.0%
0.0%
100.0%
Number of Members
0
1
2
3
4
5
Basic
Premium
Membership Type


Distribution of Monthly Visits by Goal Achievement
Mean: 7.0
Mean: 17.2
Visits per Month
5.0
7.5
10.0
12.5
15.0
17.5
20.0
22.5
False
True
Meeting Goals


App Usage by Membership Type
Use App
No
Yes
100.0%
60.0%
40.0%
0.0%
App Usage
Basic
Premium
Membership Type


Age vs Visits per Month
Colored by Membership Type, Sized by Monthly Fee
Visits_per_Month
Age
Membership_Type
Basic
Premium
Monthly_Fee
45
65
85
Meeting_Goals
False
True