**Scenario 1: Dropout Rates in Government Schools**

**Step 1: Understand the Business Goal**

**Business Case:**

A State government school wants to reduce its dropout rates by 40% in the next Academic year

**Key Objectives:**

1. Identify the average dropout rates from past and current academic year

2. Factors which affect dropout rates in govt school

3. Understand the Current Situation

4. Recommend the further steps to reduce dropout rates and projecting the predicted results for next year

**Step 2: Questions a Data Analyst Would Ask & Client Responses**

| **Question** | **Client Response** |
| --- | --- |
| Total dropouts per year? | 2 in 5 people are getting dropped-out |
| Do you have the complete Academic data of all students? | Yes ,for the past 5 years |
| Which age and gender group is at higher risk? | 12-13 yrs of age are at more risk and especially girls |
| Which economic line do their families fall in? | Most of our students come from lower-income families. Around 70% fall below the poverty line. |
| Which location do they live? | Our school serves students mostly from surrounding rural villages |
| Do you receive Govt funds at scheduled time? | Unfortunately, no. The funds often arrive late, which disrupts our ability to manage resources. |
| Which basic needs do you provide? | We provide free textbooks, uniforms, and midday meals to all students. |
| How many private schools are located nearby ? | There are 3 private schools in the vicinity |
| Total Teaching and Non-teaching staff in school? | We have 30 teaching staff, and 10 non-teaching staff. The non-teaching staff includes administrative workers, cleaners, and support staff. |
| At which duration you consider a student to be dropout? | A student is considered a dropout if they have been absent for more than 6 months continuously without any valid reason |
| Do you maintain faculty and student attendance? | Yes, we maintain daily attendance for both faculty and students. |

**Step 3: Sample Data Collection**

**Student Dropout Information Table**

| student\_id | name | age | gender | location |
| --- | --- | --- | --- | --- |
| 101 | Navya | 10 | Female | Amrabad |
| 102 | Vaunesh | 13 | Male | Mannanur |
| 103 | Teju | 12 | Female | Macharam |
| 104 | Sahith | 13 | Male | Amrabad |

**Dropout Students Attendence Table**

| student\_id | name | Joined date | Months absent | class |
| --- | --- | --- | --- | --- |
| 101 | Navya | 2024-01-  10 | 7 months | 5th |
| 102 | Vaunesh | 2024-02-  15 | 8 months | 8th |
| 103 | Teju | 2024-03-  05 | 6 months | 7th |
| 104 | Sahith | 2024-04-  20 | 9 months | 8th |

**Staff Attendence Table**

| staff\_id | name | present% | Class Incharge |
| --- | --- | --- | --- |
| 201 | Vanajakshi | 85% | 5th |
| 202 | Kailash | 68% | 8th |
| 203 | Rajini | 79 % | 6th |
| 204 | Ramesh | 94% | 7th |

**Step 4: Next Steps**

Once the business goal and data requirements are clear, the next steps involve:

1. **Data Cleaning:** Handling missing values, duplicates, and formatting inconsistencies.

2. **Exploratory Data Analysis (EDA):** Visualizing customer purchase patterns, sales trends, and retention rates.

3. **Feature Engineering:** Creating meaningful features such as "average purchase value per customer."

4. **Building Insights:** Identifying actionable recommendations based on data trends.