The Scenario: The Peacetopia Bird-Watch System

The Mission: The people of Peacetopia are terrified of birds. You are the project lead building a smart camera system to sound an alarm whenever a bird enters the city.

The Resources: You have 10 million photos to learn from. Some have birds, some don't.

Challenge 1: The Performance Check

Goal: Identify if the "brain" of our system is working correctly.

You built an AI model to achieve the above goal. Before you launch this model, you check how many mistakes it makes (Error Rate). Here is what you find:

- **Training Set Error (The "Practice Exam"):** 15% Error
- **Validation Set Error (The "Real Exam"):** 16% Error

The Questions are:

1. **Diagnosis:** Is our system suffering from **High Bias** (it hasn't learned the patterns well enough) or **High Variance** (it's just memorizing and can't handle new data)?
2. **The Solution:** If you were the boss, what is the **one thing** you would tell your engineers to do to fix this?
    - *A) Go get more data to train on.*
    - *B) Build a bigger, more complex AI model.*

Answer:

Challenge 2: Dividing the Data

Goal: Deciding how to use our 10,000,000 images.

In the "old days" of small data, people used to split data **70% for Training** and **30% for Testing.** But you have **10 million images. The Questions are:**

1. **The Decision:** What data split strategy?
2. **The Justification:** Why is X% for training and Y% for testing split enough for the final test?

Answer: