**Practical No: 04**

**Aim**: Modeling UML Use Case Diagrams and Capturing Use Case Scenarios.

**Problem Statement**: Prediction Of Personality trait based on Handwriting Analysis.

**1. Understanding the System**

Handwriting analysis (Graphology) is used to predict personality traits based on various handwriting features such as slant, spacing, pressure, loops, and strokes. The system processes a handwritten sample, applies machine learning models, and generates a personality prediction.

**2. Identifying Actors**

Actors are external entities interacting with the system. In this case, the actors include:

1. **User (Individual taking the handwriting test)**
   * Provides handwriting sample.
   * Views personality trait predictions.
2. **Admin (Graphologist or System Administrator)**
   * Manages user data.
   * Trains and updates the handwriting analysis model.
3. **Machine Learning Model**
   * Processes handwriting samples.
   * Predicts personality traits.

**3. Identifying Use Cases**

The main use cases include:

1. **Submit Handwriting Sample**
   * User uploads or provides a handwritten sample via an input device.
2. **Extract Features from Handwriting**
   * System analyzes handwriting features such as letter slant, pressure, spacing, and loops.
3. **Predict Personality Traits**
   * Machine learning model predicts the user's personality based on extracted features.
4. **View Personality Report**
   * The user receives a detailed personality analysis based on handwriting traits.
5. **Manage Users (Admin)**
   * Admin can view, modify, or delete user records.
6. **Train and Update Model (Admin)**
   * Admin updates the system by training it with new handwriting datasets.

**4.Use Case Scenarios**

**Use Case : Submit Handwriting Sample**

**Actors:** User  
**Description:** The user uploads a handwriting sample, which is processed for analysis.  
**Preconditions:** The user must have a digital or scanned handwriting sample.  
**Steps:**

1. The user logs into the system.
2. The user selects the option to submit a handwriting sample.
3. The user uploads an image or writes using a digital pen.
4. The system stores the handwriting sample for analysis.

**Postconditions:** The handwriting sample is successfully uploaded.