**Python and ML Role Assessment**

**Test Case: Face Detection and Recognition Model Implementation**

**Test Case Description:**

**1. Dataset Provision:**

The data set taken from the Kaggle has 302 images and 301 labels

Dataset Link: <https://www.kaggle.com/datasets/spearharis/face-detection-dataset>

Packages :

Install packages like Face-detection, OpenCV-python-headless, NumPy, Matplotlib, etc.

**2. Implementation Tasks:**

The face recognition library makes face detection and recognition easier and is useful for face recognition. The 301 labels and picture data can be used to create a face recognition system in the following ways:

**3. Model Functionality:**

**Face Detection**:

**Detect faces in an image**: Use a face detection model to identify faces in an image and draw rectangles around them.

**Feature Deletion:**  
Take features apart from the faces detected: To convert facial traits into numerical vectors that can be compared, use a feature extraction model.  
**Face Detection:**  
  
Compare the identified faces in the dataset with the faces that have been labelled: To locate matches, compare the retrieved features of the identified faces with known faces.

Rectangles are drawn, and faces that have been identified are marked with rectangles and, if known, with names.

**Output:**

Detected and recognized faces are displayed with rectangles around them, showing names if recognized