**Data Collection and Preprocessing Phase**

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| Date | 18 June 2025 |
| Team ID | SWTID1749712812 |
| Project Title | Unlocking Silent Signals: Decoding Body Language with Mediapipe |
| Maximum Marks | 2 Marks |

**Data Collection Plan & Raw Data Sources Identification Report:**

Empower your machine learning project with a robust Data Collection Plan and Raw Data Sources Report, ensuring precise data acquisition and preprocessing for interpreting human body language using computer vision.

**Data Collection Plan:**

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| **Section** | **Description** |

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| Project Overview | This project aims to detect and classify human body language signals like happy, sad, fighting (angry), and victory pose using live webcam input. It leverages Mediapipe to extract facial and pose landmarks, which are then used to train a machine learning model. |
| Data Collection Plan | * Capture video input using a webcam integrated with OpenCV. * Extract pose and face landmarks using Mediapipe’s holistic model. * Store key coordinates in coords.csv. * Label each frame manually to associate gestures with their emotional categories. * Train a classifier using this structured dataset and save the model as body\_language.pkl. |
| Raw Data Sources  Identified | The raw data for this project includes **webcam recordings** and **landmark data** extracted using **Mediapipe**. These datasets contain **pose and facial keypoints** labeled with gestures like *happy*, *sad*, *fighting*, and *victory*. The structured data is used to train a model for real-time body language detection. |

**Raw Data Sources Report:**

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| **Source**  **Name** | **Description** | **Location/URL** | **Format** | **Size** | **Access Permissions** |
| Webcam Video Feed | Real-time video input for capturing body language signals from various people. | Captured using app.py script | Live Video | — | Private (team collected) |
| Landmark Coordinates | Structured dataset of facial/pose landmarks extracted using Mediapipe. | coords.csv file | CSV | ~200 KB | Private (team processed) |
| Trained ML Model | Pretrained model using extracted features and gesture labels to predict new inputs. | body\_language.pkl | Pickle (pkl) | ~150 KB | Private (team trained) |