**Project Design Phase-II**

**Data Flow Diagram & User Stories**

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| --- | --- |
| Date | 17 October 2022 |
| Team ID | PNT2022TMID07105 |
| Project Name | Real-Time Communication System Powered by AI for Specially Abled |
| Maximum Marks | 4 Marks |

**Data Flow Diagram:**

USER

IMAGE

detection

Features

Sign language

d

Build and train

LSTM mode

Predict sign

Accurate the

Test data in real

time

APPLICATION

**Flow:**

* We start by collecting key points from media-pipe holistic and add to features for application.
* Save data in the form of python NumPy arrays for the further process.
* We then build a LSTM model and train with our stored data
* The number of epochs for the model is determined by us, if we increase the number of epochs the accuracy increases but time taken to run the model also increases and overfitting of model can happen, for gesture recognition.
* Once training is done, we can use this model for real time hand gesture detection and simultaneously convert the gesture to speech using OpenCV.

**User Stories**

Use the below template to list all the user stories for the product.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **User Type** | **Functional**  **Requirement (Epic)** | **User**  **Story**  **Number** | **User Story / Task** | **Acceptance criteria** | **Priority** | **Release** |
| Developer | Model Building | USN-1 | Collect Dataset |  | High | Sprint-1 |
|  |  | USN-2 | Collecting Key points using Media Pipe Holistic |  | medium | Sprint-1 |
|  |  | USN-3 | Training a Model Using LSTM from key Points |  | High | Sprint-2 |
|  |  | USN-4 | Convert text to Speech using google API |  | Medium | Sprint-2 |
|  |  | USN-5 | Model is integrated in flask app |  | low | Sprint-3 |
|  |  |  |  |  |  |  |
| Customer (Web user) | Communication | USN-1 | Communicating in Front of camera |  | High | Sprint-1 |
|  |  | USN-2 | Speech and text are delivered by web interface |  | High | Sprint -1 |