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- **Identify the need and constraints :** The need identified was to help speech-impaired individuals communicate with others, and the main constraints were making the device wearable, comfortable, accurate, affordable, and able to respond in real time.
- **Research of the problem :** Research showed that while there are other existing solutions like smart gloves and even camera-based systems, these often had limitations in accuracy, cost, or practicality, which guided the choice of approach.
- **Imagine Developing of possible solutions :** In imagining solutions, the students considered different methods, but using flex sensors and motion sensors on a glove seemed the most promising and practical way to detect hand movements.
- **Plan Selecting a Promising solution :** The plan was then to use a glove equipped with sensors, connected to a microcontroller with WiFi capability, so that the detected gestures could be processed and translated into voice.
- **Create :** A prototype was created by attaching the sensors onto a glove and wiring them to the microcontroller to capture and send the data.
- **Test and the Evaluation of the Prototype :** The prototype was tested to check if it could recognize and translate sign language gestures into spoken words while also observing speed, accuracy, and comfort in use.
- **Improve Redesign as Needed :** Based on the tests, improvements were considered, such as redesigning the glove for better fit, collecting more data for higher accuracy, and possibly linking the system with a mobile app to make it faster and more user-friendly.