TECHNICAL DOCUMENTATION

PROXIE - CBSE SCIENCE EXHIBITION

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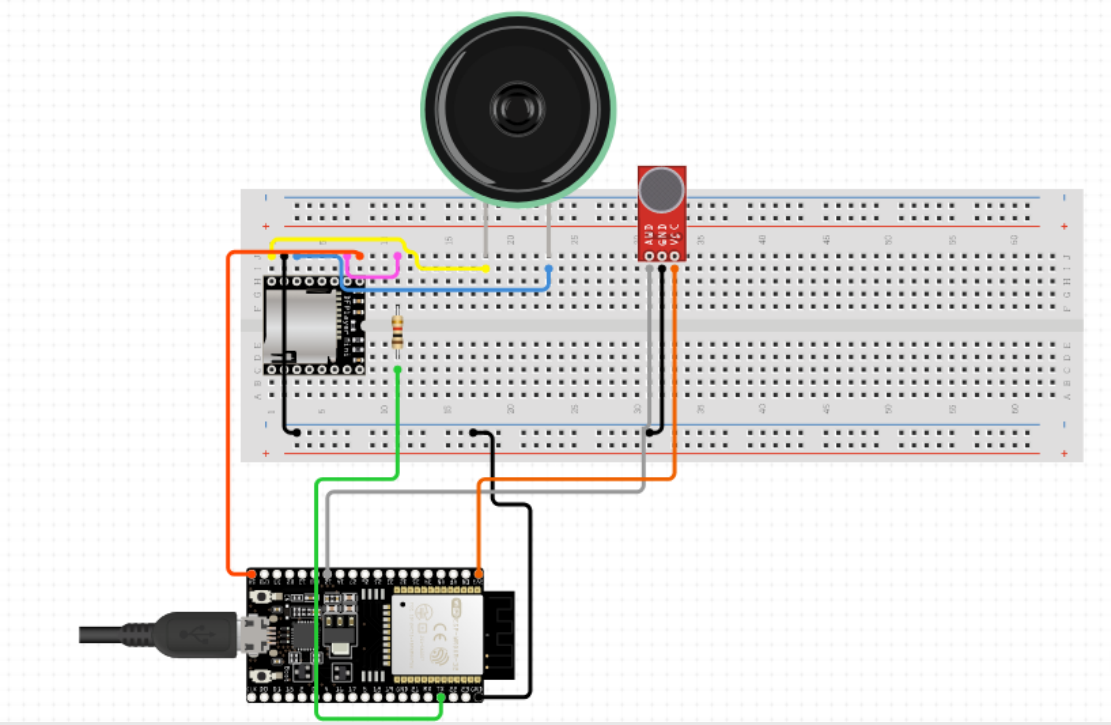
Hardware

We intend to make this portable using just 4 components -

- ESP32
- Mini Mic cum Sound Sensor
- Recharable Lithium Battery
- and a speaker



Scientific Principle -

1st - Speech is extracted from the mic and synthesized into text using Automatic Speech Recognition.

2nd - The text is then parsed into the ESP32 module.

3rd - The ESP32 module sends a request to a MQTT server where we have added the entire APIs.

4th - The data is extracted and converted into Speech using GTTS (Google text to speech) and the output comes from the Speaker

Software (Neural Networks)

This is a detailed and definitive breakdown of the code and the main principles -

This is a voice assistant trained on over 250 billion parameters based on a fusion of nerual networks like GPT-3, Rasa, Dall-E and our Custom Brainshop Network.
Here is the list of all the features of the neural networks -

- GPT-3

  Generative Pre-trained Transformer 3 is an autoregressive language model that uses deep learning to produce human-like text. Given an initial text as prompt, it will produce text that continues the prompt
  We have intergrated this in our project their API.
  The different modes we have created in this are -
  - Summarization
  - Factual Answering
  - and Grammar Correction

- # Brainshop AI

This is basically a platform where you can build your own neural networks. 2 years ago we created a NLU Discord bot named Proxima which is there in almost 10000 servers. This is a machine learning bot which basically scans every message sent and replied to and updates its neural network.

- It uses NLP to select the most optimal subjects for which to generate a response.
- Uses a Recurrent Neural Network (RNN) to structure the output, mimicking sentence structure and capitalization of learned text
- Learns new words in real-time with an n-gram markov chain, which is positionally aware of the distances between different words, creating a more coherent sentence
- We have also intergrated the Grammar prompt of GPT-3 which updates its vocabulary, grammar etc
- Using their API, we just send a post request - http://api.brainshop.ai/set?bid=[bid]&key=[key]&uid=[uid]&in=[user1_input]&out=[user_output2] and it feeds the input and ouput needed aided by Machine Learning.

Over the course of 2 years it has added over 29 lakh neural cells.

This is now capable of having a full fledged conversation with a human!!

- Rasa

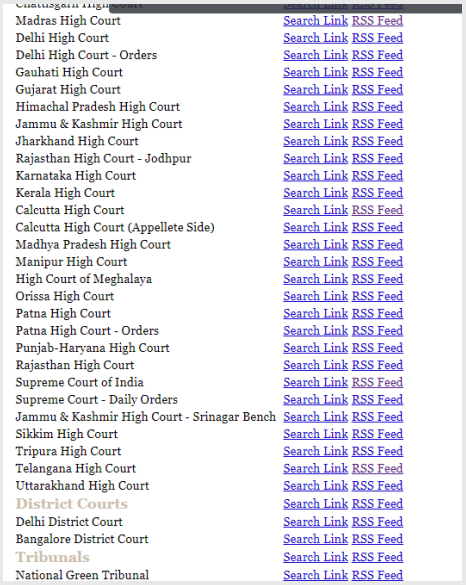
This is 3rd party neural network to extend its functionailty. We have intergrated it using their official Go-Implementation API.

And many more!

To extend the functionailty of these neural networks we have added many plugins -

- **The official API of Indian Kanoon -**

We have intergrated the official Indian Kanoon Database to our assistant using their API.
Basically, this is a database of all the judicial systems-



Madras High Court	Search Link RSS Feed
Delhi High Court	Search Link RSS Feed
Delhi High Court - Orders	Search Link RSS Feed
Gauhati High Court	Search Link RSS Feed
Gujarat High Court	Search Link RSS Feed
Himachal Pradesh High Court	Search Link RSS Feed
Jammu & Kashmir High Court	Search Link RSS Feed
Jharkhand High Court	Search Link RSS Feed
Rajasthan High Court - Jodhpur	Search Link RSS Feed
Karnataka High Court	Search Link RSS Feed
Kerala High Court	Search Link RSS Feed
Calcutta High Court	Search Link RSS Feed
Calcutta High Court (Appellete Side)	Search Link RSS Feed
Madhya Pradesh High Court	Search Link RSS Feed
Manipur High Court	Search Link RSS Feed
High Court of Meghalaya	Search Link RSS Feed
Orissa High Court	Search Link RSS Feed
Patna High Court	Search Link RSS Feed
Patna High Court - Orders	Search Link RSS Feed
Punjab-Haryana High Court	Search Link RSS Feed
Rajasthan High Court	Search Link RSS Feed
Supreme Court of India	Search Link RSS Feed
Supreme Court - Daily Orders	Search Link RSS Feed
Jammu & Kashmir High Court - Srinagar Bench	Search Link RSS Feed
Sikkim High Court	Search Link RSS Feed
Tripura High Court	Search Link RSS Feed
Telangana High Court	Search Link RSS Feed
Uttarakhand High Court	Search Link RSS Feed
District Courts	Search Link RSS Feed
Delhi District Court	Search Link RSS Feed
Bangalore District Court	Search Link RSS Feed
Tribunals	Search Link RSS Feed
National Green Tribunal	Search Link RSS Feed

```
ttp_session.headers.update({'Authorization': 'Token c5f8198fc82933df0bc328b5fe65125c9e7fe34a'})

eed_queries = ['india+doctypes:judgments', 'supremecourt+doctypes:judgments', 'delhi+doctypes:judgments',
               'bombay+doctypes:judgments', 'kolkata+doctypes:judgments', 'chennai+doctypes:judgments',
               'allahabad+doctypes:judgments', 'andhra+doctypes:judgments', 'chattisgarh+doctypes:judgments',
               'gauhati+doctypes:judgments', 'jammu+doctypes:judgments', 'srinagar+doctypes:judgments',
               'kerala+doctypes:judgments', 'lucknow+doctypes:judgments', 'orissa+doctypes:judgments',
               'uttaranchal+doctypes:judgments', 'gujarat+doctypes:judgments', 'himachal_pradesh+doctypes:judgments',
               'jharkhand+doctypes:judgments', 'karnataka+doctypes:judgments', 'madhyapradesh+doctypes:judgments',
               'patna+doctypes:judgments', 'punjab+doctypes:judgments', 'rajasthan+doctypes:judgments',
               'sikkim+doctypes:judgments', 'kolkata+doctypes:judgments', 'jodhpur+doctypes:judgments',
               'patna_orders+doctypes:judgments', 'meghalaya+doctypes:judgments']


lass Cleaner(HTMLParser):
    def __init__(self):
        super().__init__()
        self.reset()
        self.fed = []
```

What this basically does is,
It records all the sessions in all the courts across India and stores them in a database as a transcript. The RSS feed is then extracted and encoded into text and is feeded into the gpt-3 model of summarization -
This summarises 10-15 pages of text into just a few lines. This is a very helpful feature for Journalists, People working in the judiciary.

- News - We have added the APIs of Forbes, Economic Times, The Hindu and many more news agencies to keep you updated on the latest news

- Healthcare - It can tell steps to diagnose a illness and even tell the side-effects of medicines.

- Sports - Keeps you updated with the scores of your favourite team

- Full fledged conversation with human

- Huge database of facts, answers and responses

Language - Rust, Python and GO
Server - AWS EC2
Database - MongoDB
Network - ANN and RNN

THANK YOU!

Genesis International School