Green University of Bangladesh

Department of Computer Science and Engineering (CSE)

Faculty of Sciences and Engineering

Semester: (Spring, Year: 2021), B.Sc. in CSE (Evening)

LAB PROJECT PROPOSAL

Course Title: Artificial Intelligence Lab

Course Code: CSE-404 Section: ED

Student Details

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Project Proposal Status

Marks: …… Signature: .....

Comments: ..... Date: .....

1. **TITLE OF THE PROJECT PROPOSAL**
   Speech Recognition Web Application

2. **PROBLEM DOMAIN & MOTIVATIONS**

   a. The speech recognition part of the Web Speech API allows authorized Web applications to access the device's microphone and produces a transcript of the voice being recorded. This allows Web applications to use voice as one of the input & control method, similar to touch or keyboard. Technically, the speech recognition functionality can also be achieved by accessing the microphone and processing the audio stream using Web Audio API.
   b. It is a JavaScript API that enables web developers to incorporate speech recognition and synthesis into their web pages. It enables developers to use scripting to generate text-to-speech output and to use speech recognition as an input for forms, continuous dictation, and control.
   c. Along with the Speech Recognition API, there a few other related APIs are used for displaying the result, grammar, etc. These results can be used as input by other APIs for performing different tasks.

3. **OBJECTIVES/AIMS**
   a. Speech recognition is the process of receiving a voice through a microphone and making it enable a computer to identify and respond, Thus allowing for further actions to be initiated as a result.
   b. Speech synthesis is an artificial simulation of human speech with a computer. It is mostly used for translating text information into audio information and as an assistive technology for helping vision-impaired individuals in reading text content.
   c. It is a JavaScript API that enables web developers to incorporate speech recognition and synthesis into their web pages. It enables developers to use scripting to generate text-to-speech output and to use speech recognition as an input for forms, continuous dictation, and control.
   d. The speech recognition object can either stop listening after the user stops speaking or it can keep listening until the user stops it. If you only want to recognize a phrase or a word, you can set this to false. For this tutorial, let’s set it to true.

4. **TOOLS & TECHNOLOGIES**

   SpeechRecognition also inherits methods from its parent interface, EventTarget.

   a. SpeechRecognition.abort()

Stops the speech recognition service from listening to incoming audio, and doesn't attempt to return a SpeechRecognitionResult.

b. SpeechRecognition.start()

Starts the speech recognition service listening to incoming audio with intent to recognize grammars associated with the current SpeechRecognition.

c. SpeechRecognition.stop()

Stops the speech recognition service from listening to incoming audio, and attempts to return a SpeechRecognitionResult using the audio captured so far.

Listen to these events using addEventListener() or by assigning an event listener to the oneventname property of this interface.

a. Audiostart

Fired when the user agent has started to capture audio. Also available via the onaudiostart property.

b. audioend

Fired when the user agent has finished capturing audio. Also available via the onaudioend property.

c. end

Fired when the speech recognition service has disconnected. Also available via the onend property.

d. error

Fired when a speech recognition error occurs. Also available via the onerror property.

e. nomatch

Fired when the speech recognition service returns a final result with no significant recognition. This may involve some degree of recognition, which doesn't meet or exceed the confidence threshold. Also available via the onnomatch property.

f. Result

Fired when the speech recognition service returns a result — a word or phrase has been positively recognized and this has been communicated back to the app. Also available via the onresult property.

g. soundstart

Fired when any sound — recognisable speech or not — has been detected. Also available via the onsoundstart property.

h. soundend

Fired when any sound — recognisable speech or not — has stopped being detected. Also available via the onsoundend property.

i. speechstart

Fired when sound that is recognized by the speech recognition service as speech has been detected. Also available via the onspeechstart property.

j. speechend

Fired when speech recognized by the speech recognition service has stopped being detected. Also available via the onspeechend property.

k. start

Fired when the speech recognition service has begun listening to incoming audio with intent to recognize grammars associated with the current SpeechRecognition. Also available via the onstart property.

5. CONCLUSION:

1. If no one has a partner, he can make a partner through this project.
2. If someone's hand is disabled, they will be able to communicate through voice here.
3. Both of these APIs play a great role in accessibility over the past few years, most especially for the visually impaired, people with an injured arm, and many more.