



Design and Implementing Technique for Transition of Html Data to Voice Data

* Mr.Vimal B. Patel ** Mr.Rahul G. Thakkar
**** Mr. Vishal Thakor

* , ** Bhagwan Mahavir College of Management(MCA), SR. No. 149, New City Light Road, Nr. Ashirwad Villa,B/H Heena Bungalows, Bharathana-Vesu, Surat-395 017

** Navsari Agricultural University, Near Eru CharRasta,Navsari-396450, Gujarat, INDIA

ABSTRACT

This proposal is to design and implement a technique that can easily convert HTML to VoiceXML. In this Internet World most of the websites interacting via Text data inputted by devices like keyboard, mouse, etc and output is visually display on the screen of computers, mobile, etc. I propose to make technique where websites interact via voice data. In this technique conversion from Html to Vxml is divided into various stages. In first stage Html tags can be translated into DOM Hierarchy for each tag. In Second stage, using hybrid selection method each node of the tree structure is mapped with equivalent node in Vxml.

Keywords : DOM Hierarchy, Dual-Tone Multi-Frequency, Tree Structure, VXML interpreter, VoxML-Agent

1. INTRODUCTION

As a widespread usage of internet, the WWW is growing rapidly and become the main source of information in the Internet World. Most of the websites is interact via Text data, so it is time consuming process of entering data with input devices like keyboard, etc and also the Benefit of the WWW features is not taken by the blind person and handicapped person. We can access WWW resources via mobiles, but there also, we have to provide input via text data only, which is also time consuming job.

Now to speed up user interaction via voice data, also give the benefit of WWW features to blind and disabled(who has lost their both hands) persons. We have to manually convert HTML websites to Vxml, but it is very costly. So, we propose to develop a technique that will automatically convert the HTML document to Voicexml which interact via voice data.

Today's voice has become medium of communication for faster and simple form of input. So to develop an interact website which make interaction via voice data a standard Mark Up language known as VoiceXML(VXML) is used. VoiceXML is a standard Markup language founded by AT&T, IBM, Lucent and Motorola to make Internet content and information accessible via voice and phone.

VoiceXML is an eXtensible Markup Language (XML) based language that aims to function as a tool for the development of interactive voice response applications. VoiceXML is designed for creating voice applications that feature synthesized speech, audio recognition of voice input or Dual-Tone Multi-Frequency input, recording of spoken input, reproduction of audio files, control of dialog flow, and telephony features, such as call transfer.

As HTML document is render visually by the web browser. Similarly VXML interpreter render VXML document orally. Most of the WWW resources is developed using HTML language, they are not easily access by using voice data.

One Solution to this problem is to maintain two version of

same website, one interact with text data and another version via voice data. But from the server point of view, maintaining two different version of same website is expensive job (double memory required).However this approach will not solve the problem because it is impractical to maintain two version of same website.

Another Solution to this problem is to manually convert the HTML website to VXML. But this approach is also not work because developing a new VXML website instead of HTML website is very costly (in terms of money, time & labour).

So the only solution to this problem is design a technique that can automatically translate HTML code to VXML code because VXML can easily interact with user using voice input. So in the proposal, I propose to design and implement a technique that can translate HTML contents into the VXML contents on the fly without any cost of money, time & labour. The extra-ordinary feature in this technique is it maintain the HTML web pages component structure.

2. OBJECTIVES

Primary Objective

The main objective to develop a technique that is to access Web resource easily and faster using voice data input.

Secondary Objective

It is true that structure of HTML web page easily contributes a lot to the understanding of the page by the user. Since the structure of the page is a key component to understand visual document faster. So, simply text- to -speech conversion is not enough to present a web page through voice data. My technique will reflect HTML document structure along with voice data.

Since some voice software application can only read web related information and speak back to the user. My technique will help to interact with user using form component of HTML (like radio button, fileupload, etc) also maintain validations(like textbox take on certain characters of word).

- Information provided by the web page like background images, animated images, banner, etc are useful for understanding data visually. This types of element are skipped by audio browser since converting such type of tags into create problem to listener for understanding main contents of web page. So my technique will simply ignored such type of elements before conversion.
- Our technique will also help the blind and disabled(who has lost their both hands) persons to access the Web resources.

3. RELATEDWORK

Until now, various software applications was introduced to access web related information and speak this type of information to the user. One such software application name is Screen readers. This application read only the plain text from HTML page. The limitation of such type of it does not provide interactive feature and not understand the structure of the web page created in HTML.

A proposed framework was developed by James F. for developing an instruction set for designing audio interfaces to HTML known as the Auditory HTML access system or the 'AHA'. The method solves the one limitation of Screen reader. This audio interface understands the structure of the HTML web page by analyzing the tags. An interface provides different sound to each tags to identify the structure. For example. Table tag in web page is spoken out in different sound than the link tag. But the limitation of interactive feature is still remaining in this interface.

Goose, et al was the first to convert HTML into VoxML. Goose, et al presented the study of Vox portal which makes it possible to access the web through a phone-line, VoxML-Agent that can convert HTML to VoxML in the traditional 3 layer WWW structure. Concerning the VoxML-Agent, the interaction with a Vox portal was mainly mentioned, however, the core part which is the design of the conversion function was not mentioned.

Young Gun Jang propose to design an intelligent Agent for converting Html into VoiceXml. They developed an interactive sequential contents selection method to select desired contents fast and robustly from known web pages. In the method web page is divided into different fragment units according to contents. And then different links is converted into the voicexml. The limitation of the agent is it work well only for links and menu. Additional components of HTML like form are not covert into the VoiceXml.

4. PROBLEM STATEMENT

After the doing the intensive literature review following problem is being identified:-

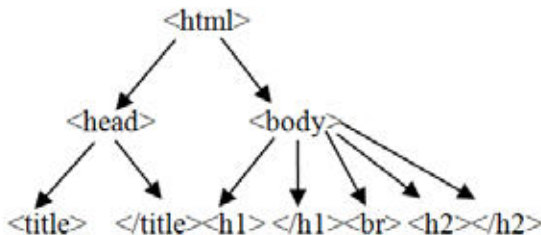
- The web resource cannot be access via voice browser along with it full HTML Structure.
- Taking voice input via HTML form element like(textbox, radio button,etc) is still not mention.
- Maintaining the validation on HTML form element is still a question.
- It is just an assumption that every starting html tag must have ending html tag.
- Javascript and applet are ignored while conversion.

5. METHODOLOGY

To overcome the limitations mention in problem statement. I propose to design a technique, that will HTML file as input and convert them into the DOM hierarchy tree structure.

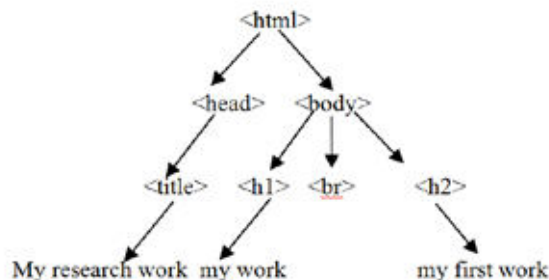
```
<html>
<head>
<title> my research work </title>
</head>
<body>
<h1>my work</h1>
<br>
<h2> my first work</h2>
</body>
</html>
```

DOM hierarchy of tree structure



Now as we seen that
 is a singular tag. So now we modify the hierarchy to form each singular tag to artificial end tag.

DOM hierarchy of tree structure after adding end tag to singular tag



After that using selection method by traversing through each node from left to right till the leaf node contents of the page is obtain and then each node of html is mapped to it equivalent VoiceXml node.

6. CONCLUSION

From the above proposal it is conclude that the proposed technique will easily convert HTML web page into VoiceXml automatically by maintaining the structure of the HTML even in VoiceXml. HTML form components also interact with user via voice data with required validation. Web resources can also be access by the blind users easily.

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