

INFORMATIVE BASED WEBSITE DEVELOPMENT USING VOICE COMMANDS

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ABSTRACT

Here we try to put some trendy and handy approach in this project which can change the way of coding and give some innovative and automotive way to today's fastest growing technology world. Our idea is to create software where a user will be able to create websites using voice commands. We hypothesize that reading code aloud could support program comprehension in a similar way, encouraging common users and novice programmers to develop websites. We believe that no one should limit themselves developing websites or blogs due to lack of programming knowledge, because they are differently abled or due to lack of healthy financial status. In addition to being valuable as an educational and diagnostic tool for novices, we believe that it could support improved tools for visually and differently abled users. To develop this software we will use the speech to text conversion library of java-script and then we will feed that command in our algorithm to execute it. As a result user will be able to see GUI of the given command. Our aim is to develop user friendly software using which anyone can create or develop websites. We want to explore different ways through which anyone can create websites with ease. We expect the audience to get engaged in the easiest way for developing websites.

Keywords – Novice coder, Differently-abled, Information based website, Blogging website, etc.

INTRODUCTION

We live in a digital world, where directly or indirectly we are depended on internet in our daily lives. Whether you are a student, an entrepreneur, a teacher, a homemaker etc. we have made internet our best friend and guide. With internet all the information in the world is just one click away. All these information are available on different websites. A website is a collection of related web pages, including multimedia content, typically identified with a common domain name, and published on at least one web server. The web page usually means what is visible, but the term may also refer to a computer file, usually written in HTML or a comparable markup language. To make everyone's life easier someone has to create these websites and web pages for that you need some basic HTML foundation. At its heart, HTML is a fairly simple language, although to generate web pages using HTML is a time consuming task for someone who is new to coding. A website is now a necessity for a business, big or small. With the world being on the internet, demand for web presence of one's business is increasing. Website is considered as one of the most important and somewhat cheap marketing tool, this is driving people to have their own websites to promote their businesses, or personal use. For a person having zero knowledge of coding, it is difficult to build his/her own website and thus has to depend on an expert which can be expensive. Building website is a tiresome job for both experts as well as new users. In the current technology era, there is no software which provides service to create HTML pages using voice commands. With advancements in technology, a solution to

the problem the of web page generation using voice commands, can be achieved.

Our web application AUTONOME will help people, who are interested in coding, by teaching programming concepts and empower them to achieve the best future. Assist the user gradually by using their voice commands to create web pages. It is expected to address the research gap in code generation according to voice commands.

LITERATURE SURVEY

1. PARTHA: A VISUALLY IMPAIRED ASSISTANCE SYSTEM.

The proposed VI (Visually Impaired) Assistant System is developed to assist the visually impaired people have four modules which are obstacle recognition, obstacle avoidance, indoor and outdoor navigation, and real-time location sharing. The proposed system is a combination of smart glove and smart-phone application which works fine in the low light level also. The smart glove as a part of the proposed solution is used to detect and avoid obstacles and to enable visually impaired people to identify the world around them. The smart-phone-based obstacle and object detection is used to detect various objects in the surrounding. The system also provides seamless indoor navigation implemented using available Wi-Fi access points. The system also provides security to the blind via real-time location sharing in an outdoor environment. Our proposed system is reliable, affordable, practical and feasible.

2. HTML VOICE

Creating web pages is a tiresome job for experts as well as new users. In this project web pages are developed using voice commands. Voice command input from the user is converted into text commands using available speech-to-text API. Using Natural Language Processing, knowledge is extracted from these text commands and web pages are generated using intelligent system support. The proposed hardware and software for the project will be a microphone as an input device, Python programming language, voice recognition API and other required libraries for webpage development. The user is thus relieved from worrying about writing the code and can instantly build desired web pages. This voice-driven system thus saves users' time to design and build web pages.

3. WEB BASED PROGRAMMING TOOL WITH SPEECH RECOGNITION FOR VISUALLY IMPAIRED USERS.

Today programming requires to be able to code textually, but it also requires to be visual. Therefore, both of these have left visually impaired users in a very difficult position when it comes for learning and applying programming. There are tools that enable visually impaired users to use computers, but none of them has been specialized to aid the visually impaired users in various

programming issues. The aim of this project is to develop a web application, especially for visually impaired people to facilitate to learn programming concepts. Designed solution is an application, based on speech recognition, semantic analysis, user interaction, and braille engine, which can use as a smart programming tool for visually impaired and differently abled people. It's a method of implementing a new way to help and motivate disable people, to use latest technologies in Information Technology and software engineering aspects. Here, researchers are focusing on Java language because it is considered as simple rather than other languages that programmers use today. This research helps to all visually impaired people, who are interested in coding, by teaching programming concepts and empower them to achieve the best future by giving programming theories simply with coding examples. Guide the user gradually by giving voice commands what to do next, and what can you try out according to their skills. It is expected to address the research gap in code generation according to voice command.

4. SMART EYE FOR VISUALLY IMPAIRED-AN AID TO HELP THE BLIND PEOPLE.

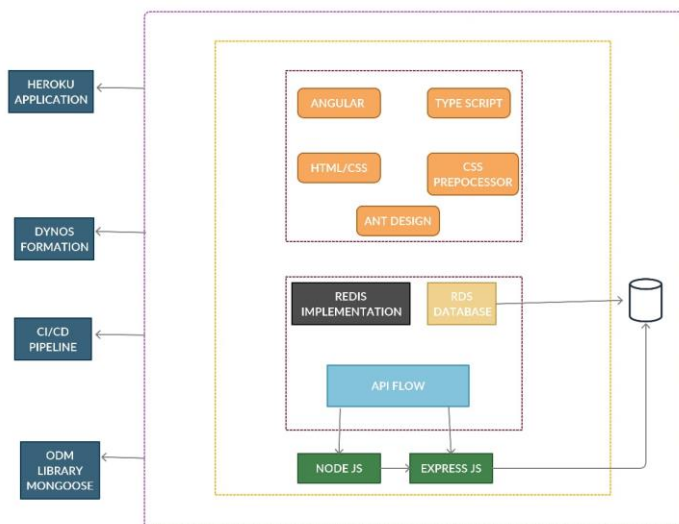
This paper presents an idea of developing a smart system which can assist the visually impaired people in their daily activities. Actually, there are many challenges faced by visually impaired people. In most cases, they require constant support in almost all scenarios especially in their day to day activities. Some of the major challenges include difficulty in moving from one place to another without the assistance of someone. Other challenges include difficulty in recognizing people, detecting obstacles, etc. In order to count avert this situation, we propose a "smart eye system" in this work. The device is a voice enabled system that would direct the visually challenged person in their day to day works. The device combines the various available technologies and integrates them into a single multipurpose device that can be used by the visually impaired. The paper discusses about the design of such a system and the challenges involved in designing the device.

5. CODE PHONOLOGY: AN EXPLORATION INTO THE VOCALIZATION OF CODE

When children learn to read, they almost invariably start with oral reading: reading the words and sentences out loud. Experiments have shown that when novices read text aloud, their comprehension is better than when reading in silence. This is attributed to the fact that reading aloud focuses the child's attention to the text. We hypothesize that reading code aloud could support program comprehension in a similar way, encouraging novice programmers to pay attention to details. To this end we explore how novices read code, and we found that novice programmers vocalize code in different ways, sometimes changing vocalization within a code snippet. We thus believe that in order to teach novices to read code aloud, an agreed upon way of reading code is needed. As such, this paper proposes studying code phonology, ultimately leading to a shared understanding about how code should be read aloud, such that this can be practiced. In addition to

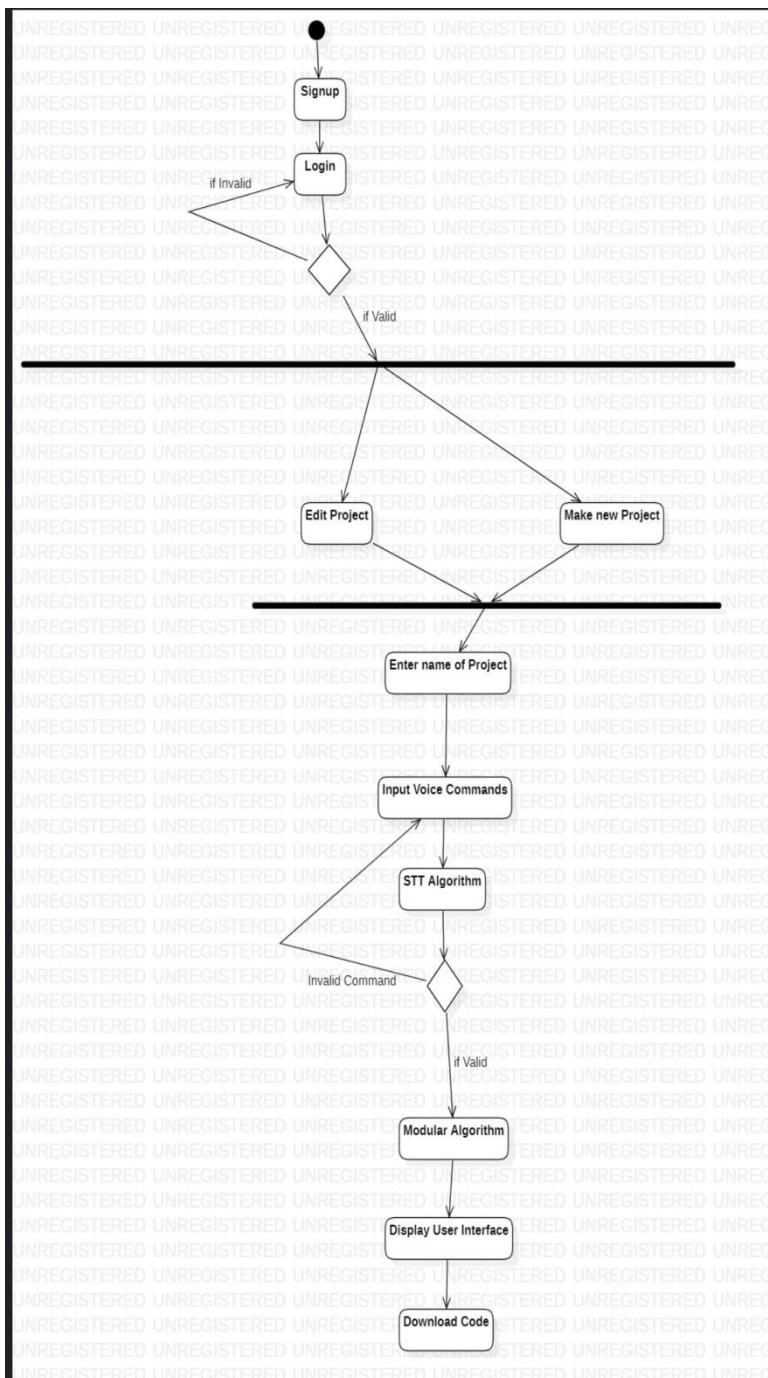
being valuable as an educational and diagnostic tool for novices, we believe that pair programmers could also benefit from standardized communication about code, and that it could support improved tools for visually and physically disabled programmers.

SYSTEM ARCHITECTURE



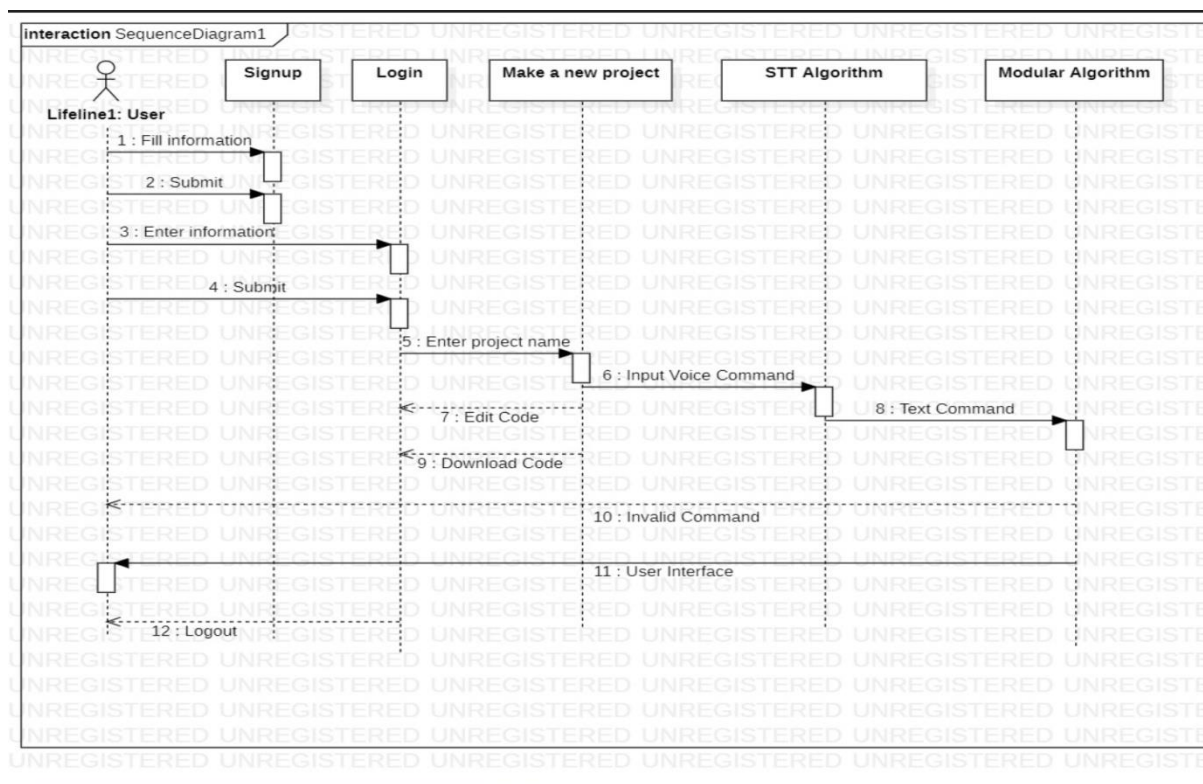
The system consists of two main components. The frontend and the backend. The front end uses technologies such as Angular, Typescript, HTML/CSS, CSS Preprocessor and design system Ant Design. The backend part consists of redis implementation for cache. It also contains Relational Database Mongodb. The API flow consists of NodeJS and ExpressJS. There are other supporting components like Heroku application for handling server side. The Dynos formation is also used for managing the traffic. The CI/CD pipeline is used for cache integration and Cache deployment for integrating any changes in the system and deploying it to server. The ODM library is used for handling other things.

ACTIVITY DIAGRAM



After going to the website the user will first go to the homepage. There will be two options signup and login. The user must first signup before logging in. The next step after signup is login. If the login details are valid then it will go to project page. There will be two buttons to edit a existing project or to create a new project. Select accordingly. Enter the name of the project. Input voice commands. If the voice command is invalid then enter it one more time. If the voice command is valid then the log will be generated with id and the code will be generated. You can preview the code and download it. You can also view the Graphical User Interface.

SEQUENCE DIAGRAM



On entering the website it will take you to the homepage. It will contain an signup option. On clicking on it, you will go to the signup page. You must fill the details and click on signup. Then you must go to login page and do the same, i.e. fill the information and enter login. Then select whether you want to create a new project or edit an existing project. Enter the name of the project. Input the voice commands. The algorithm will check if it is voice command is valid. If it is valid it will generate a code which you can download. It will also generate the log of all the commands you are giving. You can also chose to see the Graphical User Interface. The last step is to logout.

APPLICATIONS

- Since this is open source software so anyone can create websites by just giving voice commands without paying any penny.
- Some users find it very difficult to create or design website as per their preference. This software will be very handy for such users.

ADVANTAGES

- It will reduce manual work.
- Small businesses can create their static informational websites.

DISADVANTAGES

- Can create blogging and static websites.
- Browser compatibility limitations.
- Platform compatibility limitations.

CONCLUSION

The proposed system gives an effective solution to use and develop basic websites with the basic knowledge of computers. Web developers need to have deep knowledge of different coding languages to develop a website but with the proposed software user who is in the initial phase of learning these coding languages can also start by creating their own basic website and later on they can make changes to it if they wish to. This will not only give them a boost of confidence but also help them to learn more about how website works and understand in a better way all the tools they need to create their own website. The software has easy modules and simple architecture which makes it more practical and easy to use. The initial results show that the system is easy to use, effective, and safe and works well with all voice commands. The system is user-friendly as it accepts the voice commands and gives the appropriate response by adding the syntax to the website. The system is free, reliable and satisfies all the other nonfunctional requirements. In this paper we propose to start working towards a new approach to understand programming languages, which prescribes how to build websites using voice commands, also providing the ability to use anywhere anytime without hard efforts. The ultimate goal of this research is to give freedom to people who want to create their own website without putting in the manual work or investing time and money to hire web developers, and someone who feel they have programming learning related issues. This software is developed keeping in mind the difficulties faced by differently abled, Our intention while creating this software was to make it user friendly and easy so that anyone irrespective of their financial status or a person with physical disabilities can use it easily, thus empowering the differently able.

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