

Overview:

The client for this project is committed towards a global health cause - that of helping affected people across the world combat and overcome the issue of stuttering. In order to bring this to effect, they have undertaken a unique approach of getting speech pathologists and clinical psychologists to collaborate, and device solutions that offer a unique blend of learnings and expertise from both these fields. Having received significant encouragement and impetus for the government, the client is focused on performing deep research in this field. The rigor put in is remarkable and intersects many disciplines. All this is being done with a single intent: to understand the disorder better, and device new types of therapies to combat it.

Mindfire Solutions was approached to develop an application that would enable them to further one of their online treatment programs. Generally, there is always a learning curve that comes with executing any Health IT project. Executing one of this nature, that involved infusing the learnings of many researches and having a target audience as widespread, had its own set of revelations and challenges for the team.

Client details:

Name: Confidential | Type: Healthcare | Location: Australia

Technologies:

PHP, Codeigniter, MySQL, Apache, JQuery, HTML5 Audio/Video, Speech-to-Text Google Cloud API

Project Description:

The project involved developing an online treatment program for adults who stutter. Treating stuttering in adults involves teaching them to speak with a fluency technique. The fluency technique is initially taught in a very slow and exaggerated manner. The technique sounds very strange. It is taught to clients by way of models e.g. with accompanying video or audio examples.

Stutter Management



Once the participants have learnt how to speak quite naturally with the fluency techniques, they are made to work through a problem solving module to enable them to apply the learnings from their fluency techniques in their every day life.

So we segregated the whole program into various modules. Each module comprises of Text/Audio/Video content. The users of the application (patients who stutter) are meant to go through each of the modules in a sequential manner. They cannot skip any module. The administrators have access to all the modules. Each module is again made up of multiple sub sections. Overall, it is like a structured series of tutorials, with each serving a specific purpose, and collectively adding up to deliver the holistic benefits.

During the course of the program there is provision to capture ratings provided by the users themselves on a rating scale. A sample of the scale used is as follows:



In some modules, the users are required to record themselves while they are talking. Their audio is captured and sent to Google Speech Recognition API which transcribes it into text. It makes it possible to compare it with previous inputs for users. This helps in making a judgment on the improvement that has happened, or otherwise.

There is an admin portal where admins can manage other users (create/edit profile etc.), edit site content for module pages, run various reports like user login report, patient's stuttering data etc.



Architecture:





Screenshots



Screenshot 1: Home Page

| Identifying stuttering | 0 | During this section of the program you are going to learn to measure the amount of fluency technique you are |
|-----------------------------|----|--|
| Stuttering Severity | 0 | using. |
| Scale | - | Up to this point, the fluency technique you have learned sounds very unnatural and you would not want to talk like the training model during your everyday talking. |
| stuttoring severity | ° | During State Two of the program you will learn how to make your fluency terminic to equind more patient and |
| Learning the Fluency | 0 | acceptable to use in your everyday talking. |
| Practising the Fluency | 0 | To help you to evaluate and modify the amount of flaency technique you are using, you will learn to use the |
| Technique | Ŭ. | Fluency Technique Scale. |
| Fluency Technique | 0 | You can see the Fluency Technique Scale below. |
| COM | | The Fluency Technique Scale will help you to thrik about the amount of technique you are using. |
| Stage Two | | |
| Interest entres to make and | ~ | 0 1 2 3 4 5 6 7 8 Madman |
| sounding speech | ~ | No Technique |
| Making your speech | 0 | (Training Model) |
| sound more natural | | |
| Stage Three | | Conside |
| Lines on a finance | • | ► 0.00/0.00 |
| technique during | 0 | |

Screenshot 2: Sample Module Page

Stutter Management





Screenshot 3: Video Models

| Admin Panel | | | | |
|----------------------|---|---|--|--|
| Users | ~ | Edit Static Content | | |
| Approve a user | 0 | home_aim v | | |
| Edit a user | 0 | | | |
| Activate a user | 0 | P. F. S. Y. LA | | |
| De-activate a user | 0 | B J == 1= 12 12 | | |
| Resend welcome email | 0 | Aim of the Internet Camperdown Program | | |
| Static Content | • | The Internet Campandown Program will help you to learn a new way of taking using a fluancy techniquo. Yeu can use the fluancy technique to control your studiening when and takenet is is important for you lober more fluent. This wither is a cale oppeor in technicum, its ground restarburght in thermosch have been used for many yours to | | |
| Edit static content | 0 | control statiseing and there is strong evidence to support their effectiveness. Clinical trials have demonstrated that people do not need to attend a speech clinic to benefit from speech restructuring programs. | | |
| Edit auto amails | 0 | Treatment can be of benefit when conducted using the lakehone and webcam teleconferencing. There is also crefiminant exidence that some create marker able to follow the treatment procedures without the assistance of | | |
| Statistics | | | | |
| Login statistics | 0 | Edt | | |
| User tracking | 0 | | | |
| User data | 0 | | | |

Screenshot 4: Admin Portal