APHASIA-APP: AN APP TO ENHANCE PICTURE NAMING SKILLS IN PERSONS WITH APHASIA

Submitted to

Department of Computer Applications,

Manipal Institute of Technology,

Manipal University, Manipal.

In partial fulfillment of the requirements for the award of

Degree of Master of Computer Applications

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August 2017

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* 1. **Abstract**

Aphasia is an inability to comprehend and formulate language because of damage to specific brain regions. This damage is typically caused by a cerebral vascular accident (stroke), or head trauma, however these are not the only possible causes. The diagnosis to this disease involves simple exercises, such as asking a person to name as many words as they can think of, or asking them to name objects. Aphasia app provides an interface to diagnosis the disease through pictures and letters.

* 1. **Introduction**

In the present health care scenario, the health care industry is pressurized to manage patient services more efficiently. There has been specific restructuring the delivery of health care services which are expected to cause significant changes in the health care system as a whole and thereby, resulting in a paradigm shift of the diagnosis completely.

*Development of the Android application*

* Present all the 100 pictures one-by-one (requires the vocal response capture and storing). Further, an accuracy indicator (correct/incorrect button) needs to be used.
* From all the failed items 50 items (or all items if the total number of failed items is ≤50) will be selected for the training purpose.
* An algorithm would be implemented to distribute 5 training items per day.
* The user log will be saved and transferred to the investigator (web-based).

Aphasia app was developed to address this need. The main focus of the application was to improve diagnosis method of aphasia patients through the use of android app.

* 1. **Motivation for the proposed work**

The Dept. of Speech and Hearing, School Of Allied Health Sciences, Manipal University is actively involved in finding diagnosis for Aphasia. Subsequently, a proposal for digitization of work processes in diagnosis of aphasia was tendered to the Department of Computer Applications, MIT, Manipal. The need for the application was identified since processes in diagnosis of aphasia are presently manual. This would help streamline the workflow and allow creation of a digital repository of reports.

* 1. **Objectives**

1. To develop an android based mobile application targeting patients with aphasia through stimulus training
2. To develop web application to interface with the mobile application for storage and retrieval of patient records and images.
   1. **Technical Details**

Aphasia-app is an Android developed using Android Studio for designing the user interface. MySQL is used as the backend database.

* + 1. **Hardware Requirements**

Table 1.1: Hardware Requirements (Developer)

|  |  |
| --- | --- |
| Processor | Intel Pentium 3 or later |
| RAM | 512 MB or higher |
| Hard Disk | Desktop or Laptops with 10 GB |

Table 1.2: Hardware Requirements (End User)

|  |  |
| --- | --- |
| Processor | Intel Pentium 3 or later |
| RAM | 512 MB or higher |
| Hard Disk | Desktop or Laptops with 10 GB |

* + 1. **Software Requirements**

Table 1.3: Software Requirements (Developer)

|  |  |
| --- | --- |
| Operating System | Window XP or later |
| Android OS | Android 4.2 or above |
| Database | MySQL version 5.6 |
| Internet connection | Required |

Table 1.4: Software Requirements (End User)

|  |  |
| --- | --- |
| Operating System | Window XP or later |
| Android OS | Android 4.2 or above |
| Operating System | Window XP or later |
| Internet connection | Required |

* 1. **Project Details**

Team size: 03

Duration of project: 02 months (May 1st to July 1st 2017)

* 1. **Acknowledgments**

We would like to thank and acknowledge Dr. Gopee Krishnan, Associate Professor, Dept. of Speech and Hearing, School Of Allied Health Sciences, Manipal University and Mr. Rajath Shenoy of Speech and Hearing, School Of Allied Health Sciences, Manipal University for giving us the opportunity to work on this project.

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