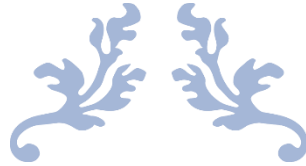


UNIVERSITY OF SCIENCE AND TECHNOLOGY OF HANOI



REPORT

WEBSITE APPLICATION DEVELOPMENT



TOPIC

BUILD A WEB APPLICATION TO MANAGE MRI IMAGE DATA OF A CLINIC

Instructor: Dr. NGHIEM Thi Phuong

OCTOBER 29, 2021

GROUP 14

https://drive.google.com/drive/folders/1xu15a_F0vWhBHmMURa5pYyPz36lNyfXJ?usp=sharing

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I. OVERVIEW

1. About

- Group name: Group 14
- Group member:
 - Pham Gia Phuc – BI10-138
 - Tran Dac Minh – BI10-113
 - Do Hoang Quan – BI10-147
 - Dang Gia Linh – BI10-101

2. Class

- ICT

3. Topic

- Build a web application to manage MRI image data of a clinic
- Language used: HTML, Javascript, PHP, SQL

4. Roles

- UI Designer and coding: Do Hoang Quan
- Function developer: Pham Gia Phuc
- Dataset & PHP developer: Tran Dac Minh
- Document researcher and summary: Dang Gia Linh

5. Why Need MRI Image Manager

- Much more efficient than paper bases.
- Easy to manage
- Easy to use

6. What MRI Image Manager Do

- MRI Image Manager
 - Provide information of the clinic
 - Create and store patient MRI data
 - Read MRI data

II. THEORETICAL BASIS

1. Research Topic

- Build a web application to manage MRI image data of a clinic
- Language: HTML, CSS, Javascript, PHP, SQL

2. Summary

- **HTML** is the standard markup language for Web pages.
- **CSS** is the style sheet language used for describing the presentation of a document written in a markup language such as HTML
- **JavaScript** is the world's most popular programming language. JavaScript is the programming language of the Web.
- **PHP** is a server scripting language, and a powerful tool for making dynamic and interactive Web pages. PHP is a widely-used, free, and efficient alternative to competitors such as Microsoft's ASP.
- **SQL** is a standard language for storing, manipulating and retrieving data in databases.

3. Analysis and Evaluation

- **Hypertext markup language (HTML)** is a Hypertext markup language, the standard markup language for documents designed to be displayed and viewed on the online during a browser also helps to create the structure of the web page. because it is a markup language, it consists of many tags.
- **Cascading Style Sheets (CSS)** is defined as a method sheet language that provides web designers control over how an internet site communicates with web browsers including the formatting and display of their HTML documents.
- **JavaScript is a programming language.** Many of these are related to the way, JavaScript is often executed directly in a client's browser commonly utilized in web development.
- The name **PHP** stands for **Hypertext Preprocessor** and denotes a server-side scripting language, which suggests that applications written thereon run on web servers and don't depend upon the online browser.
- **Structural Query Language (SQL)** is used for accessing, manipulating, and communicating with the database.

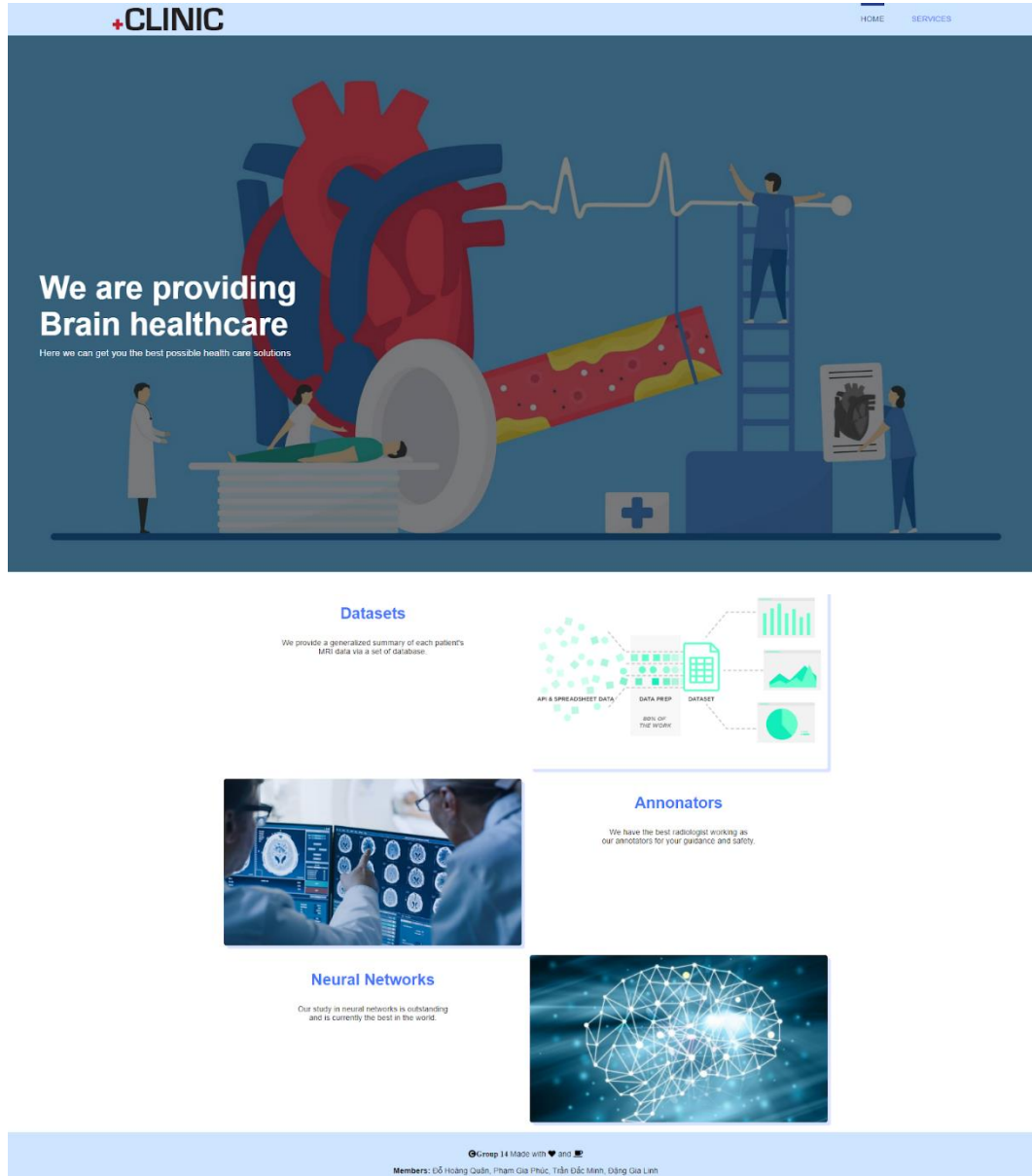
4. Conclusion

- HTML is standard markup language, easy to study and use, minimal flaws.
- CSS is easy for studying but pretty hard in using.
- Javascript is a stable programming language.
- PHP is a powerful language but hard in usage.
- SQL is a great language for working with kinds of data.

III. PROJECT CONTENT

1. UI Design

HOME PAGE



SERVICES PAGE

DATASETS

+ ADD

- DEL

ID	Age	Gender	Group	IQ	ICD-10	Date	MRI Image	Annotator
sub-01	39	m	depr	113	F32.0	9/15/2021	sub-01.png	Phúc
sub-02	50	m	depr	80	F32.0	9/15/2021	sub-02.png	Minh
sub-03	47	f	depr	87	F32.0	9/15/2021	sub-03.png	Quân
sub-04	32	f	depr	100	F32.0	9/15/2021	sub-04.png	Linh
sub-05	26	f	depr	104	F32.0	9/15/2021	sub-05.png	Phúc
sub-06	42	m	depr	104	F32.0	9/15/2021	sub-06.png	Minh
sub-07	28	f	depr	94	F32.0	9/15/2021	sub-07.png	Quân
sub-08	28	m	depr	92	F32.0	9/15/2021	sub-08.png	Linh
sub-09	52	f	depr	77	F32.0	9/15/2021	sub-09.png	Phúc
sub-10	24	m	depr	99	F34.1	9/15/2021	sub-10.png	Minh
sub-11	28	m	depr	112	F32.0	9/15/2021	sub-11.png	Quân
sub-12	25	f	depr	118	F32.0	9/15/2021	sub-12.png	Linh
sub-13	29	f	depr	120	F32.0	9/25/2021	sub-13.png	Phúc

When ADD button is clicked

DATASETS

+ ADD

- DEL

ID	Age	Gender	Group	IQ	ICD-10	Date	MRI Image	Annotator
----	-----	--------	-------	----	--------	------	-----------	-----------

ID:

sub-01

8 characters, including numbers and letters

Age:

34

Gender:

m

Experimental Group:

control

IQ:

110

ICD-10:

F32.0

Date:

11/11/2021

MRI image/Link:

Choose a picture

Annotators:

DO HOANG QUAN

CREATE

When DEL button is clicked

DATASETS

+ ADD

- DEL

ID	Age	Gender	Group	IQ	ICD-10	Date	MRI Image	Annotator
----	-----	--------	-------	----	--------	------	-----------	-----------

ID:

Ex: sub-01

8 characters, including numbers and letters

DEL

STAFF PAGE



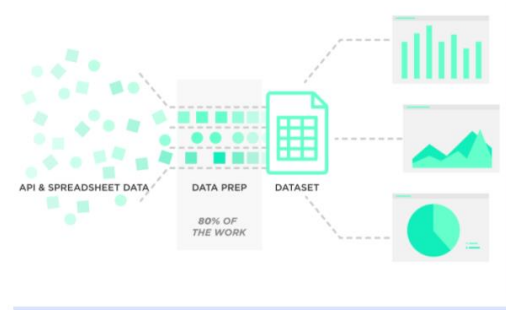
2. Function

a. Introduce the most prominent information of the Clinic

Generalize summary of patient's MRI data via a set of database.

Datasets

We provide a generalized summary of each patient's dataset via a set of database.



Introduce the annotators



Annotators

We have the best radiologist working as our annotators for your guidance and safety.

Introduce the outstanding neural networks, which is the best in the world.

Neural Networks

Our study in neural networks is outstanding and is currently the best in the world.



Provide contact information of the clinic

©Group 14

Made with ❤️ and ☕

Members: Đỗ Hoàng Quân, Phạm Gia Phúc, Trần Đức Minh, Đặng Gia Linh

b. Read and display dataset

The website reads the database, which contain lines of dataset. Once access to the “Dataset” page, the Website display all Database, which contains 6 categories, which provide the basic information of patient:

- ID
- Age
- Gender
- Group
- IQ
- ICD-10
- Date
- MRI Image
- Annotator

c. Create MRI dataset

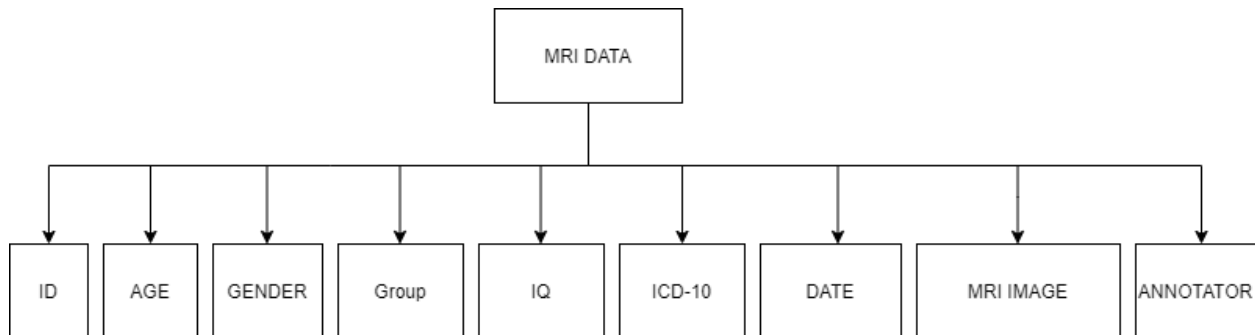
It is necessary to add new data of the patient in the working time, therefore, MRI Image Manager provide the function of add new data to the database of Clinic.

Input value of categories and new information of patient is created.

d. Store MRI dataset:

For every newly added dataset, it is necessary to keep it safe for the working process of Clinic, thus, new-create-data will be added and save to the database, then being displayed in the table.

3. Database



The dataset consists of 72 records from 72 voluntary participants.

The experiment divided participants into 2 groups: depressed and healthy control.

Data descriptions

1. ID – participants identifier
2. Age – age of participants
3. Gender – male/femal (m/f)
4. Group – depressed/healthy control (depr/control)
5. IQ – IQ scores on Raven's Progressive Matrices (0 – 200)
6. ICD-10 – International Statistical Classification of Diseases and Related Health Problems 10th Revision
 - "F32.0": "Mild depressive episode"
 - "F32.1": "Moderate depressive episode"
 - "F34.1": "Dysthymia"
 - "F34.9": "Persistent mood disorder, unspecified"
7. Date – format of *dd/mm/yyyy*
8. MRI Image – link to MRI image
9. Annotator
 - Dr. Phuc
 - Dr. Minh
 - Dr. Quan
 - Dr. Linh

ID	age	gender	exp_group	IQ	ICD-10	Date	IMG_path	Annotator
sub-01	39	m	depr	113	F32.0	9/15/2021	/Web Application/Final Project/MRI Data/MRI Images...	Phúc
sub-02	50	m	depr	80	F32.0	9/15/2021	/Web Application/Final Project/MRI Data/MRI Images...	Minh
sub-03	47	f	depr	87	F32.0	9/15/2021	/Web Application/Final Project/MRI Data/MRI Images...	Quân
sub-04	32	f	depr	100	F32.0	9/15/2021	/Web Application/Final Project/MRI Data/MRI Images...	Linh
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sub-06	42	m	depr	104	F32.0	9/15/2021	/Web Application/Final Project/MRI Data/MRI Images...	Minh
sub-07	20	0	0	n/a	0	2021-10-29	USTH.png	Minh
sub-07	28	f	depr	94	F32.0	9/15/2021	/Web Application/Final Project/MRI Data/MRI Images...	Quân
sub-08	28	m	depr	92	F32.0	9/15/2021	/Web Application/Final Project/MRI Data/MRI Images...	Linh
sub-09	52	f	depr	77	F32.0	9/15/2021	/Web Application/Final Project/MRI Data/MRI Images...	Phúc
sub-10	24	m	depr	99	F34.1	9/15/2021	/Web Application/Final Project/MRI Data/MRI Images...	Minh
sub-11	28	m	depr	112	F32.0	9/15/2021	/Web Application/Final Project/MRI Data/MRI Images...	Quân
sub-12	25	f	depr	118	F32.0	9/15/2021	/Web Application/Final Project/MRI Data/MRI Images...	Linh
sub-13	29	f	depr	120	F32.0	9/25/2021	/Web Application/Final Project/MRI Data/MRI Images...	Phúc
sub-14	30	f	depr	128	F32.0	9/25/2021	/Web Application/Final Project/MRI Data/MRI Images...	Minh
sub-15	21	f	depr	102	F32.0	9/25/2021	/Web Application/Final Project/MRI Data/MRI Images...	Quân
sub-16	34	f	depr	84	F32.0	9/25/2021	/Web Application/Final Project/MRI Data/MRI Images...	Linh
sub-17	33	f	depr	89	F32.0	9/25/2021	/Web Application/Final Project/MRI Data/MRI Images...	Phúc
sub-18	44	f	depr	97	F32.0	9/25/2021	/Web Application/Final Project/MRI Data/MRI Images...	Minh
sub-19	44	f	depr	95	F32.0	9/25/2021	/Web Application/Final Project/MRI Data/MRI Images...	Quân
sub-20	31	f	depr	84	F32.0	9/25/2021	/Web Application/Final Project/MRI Data/MRI Images...	Linh

IV. RESULT

In general, MRI Image Manager is a great web base application.

The website has simple user interface, which increase the friendliness in usages.

Otherwise, MRI Image Manager uses database which is pretty detailed, organized in a kind of table, it helps user easier to look up and manage the information of patients.

Be able to search with all kind of categories.

However, the web is a bit lack of responses. Furthermore, when adding information, user have to type every single input line to have full information. If mistakenly added with the lack of information, user need to redo the process to have the full one.

At the moment, we are working with our best to update and get the better application for the greatest experiences of user.