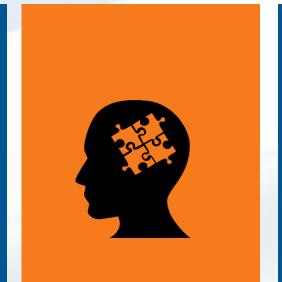
Teesside University Stephen Walker n3266475



NHS MOVENET DATABASE



The MoveNet database is an electronic medical record (EMR) it is a digital version of a paper chart that contains all of a patient's medical history. This EMR will be used by the Movement Disorder Services Team who specialize in treating people with Parkinson's disease (PD) at James Cook University Hospital.

Research



My5QL®

Data Modelling

Data modelling is the act of exploring dataoriented structures. Like other modelling artefacts data models can be used for a variety of purposes.

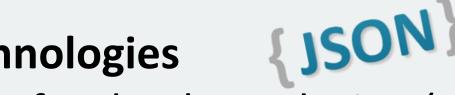
JQUESY write less, do more.

Online EMRs

There are a few good open source versions of Electronic Medical Records or EMRs available

- Practice Fusion
- Kareo HER
- Hello Health
- Open EMR

Web Technologies



- MYSQL for database design (MySQL, no date)
- JSON is used to access the server asynchronously to the server (JSON, no date)
- PHP will be used to make queries to the database
- JQuery runs along side Bootstrap for a better UX (Foundation, 2015)
- HTML5 and CSS3 is used with Media Queries to allow responsiveness.

Scope and Objectives

PARKINSON'S CHANGE ATTITUDES. FIND A CURE. JOIN US.

The Movement Disorder Service

The James Cook University Hospital provides care for 800 people living with PD. The team includes neurologists, specialist nurses, all of which have the need for a new way of inputting patient data. I will design and build a bespoke online EMR which allows for viewing and editing patient data.

- Create MySQL Database (Prototype)
- Design secure online UI, team member can input patient data (via forms)
- Design bespoke EMR software package
- Create CRUD interface inside EMR.

October Start Research Begin Database Design

November Research EMRs Begin Data Model

Database Development

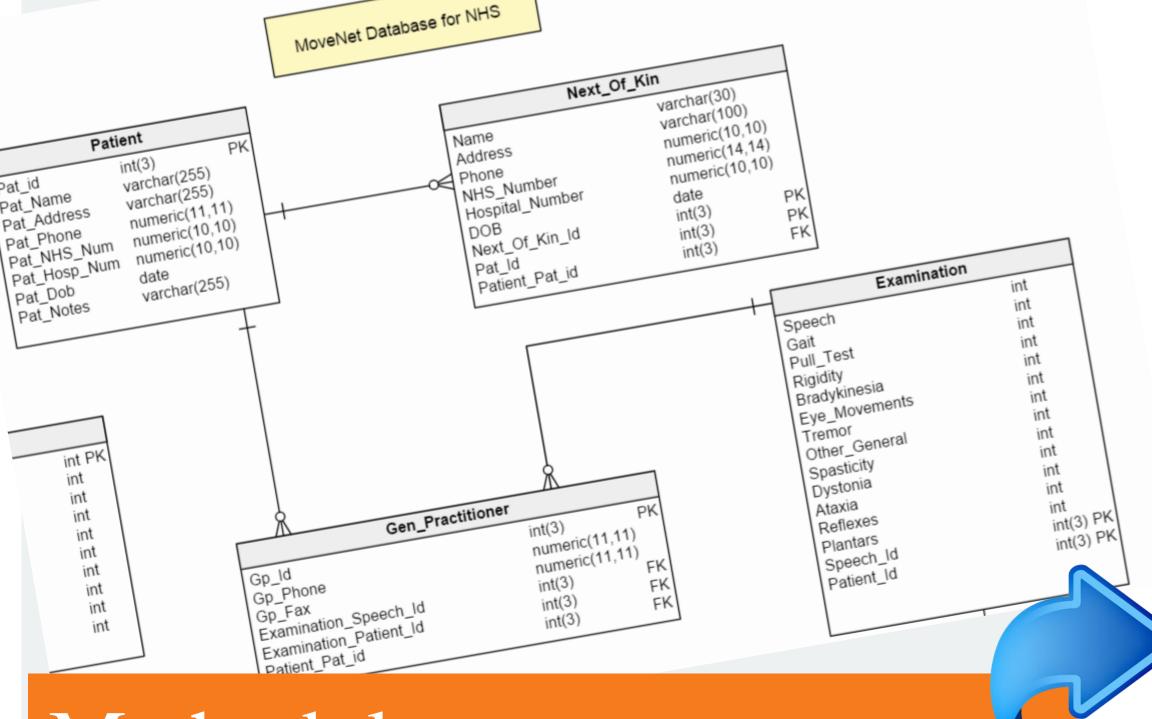
ERD

The diagram below shows the structure and relationships of our database

- Vertabelo used in design
- Created student account



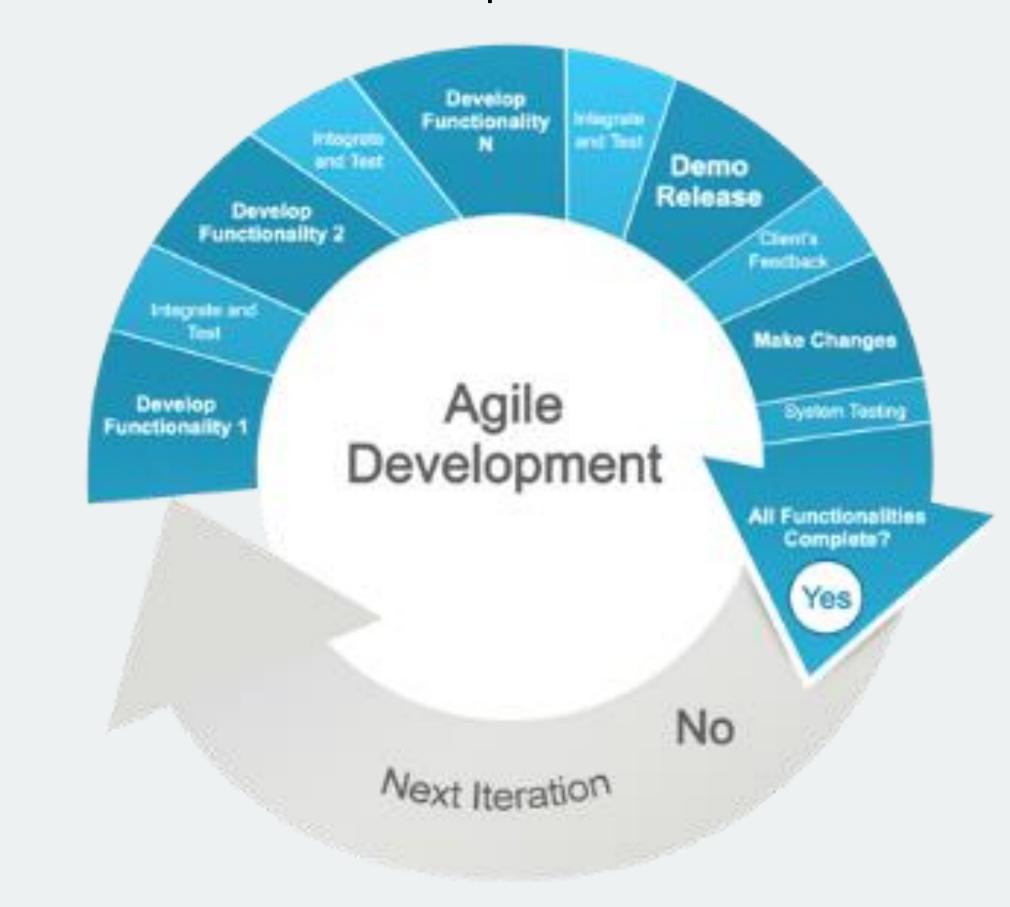
Vertabelo



Methodology

Agile as a Logical Data Modelling Methodology This project will follow an Agile iterative design pattern. This allows for rapid prototyping, which can be tested regularly. (Kaur and Rani, 2015)

- MYSQL Database Iterations
- User Interface Development.



December **Client Meeting** Begin User Interface

January Client Meeting Database Iteration Design of CRUD

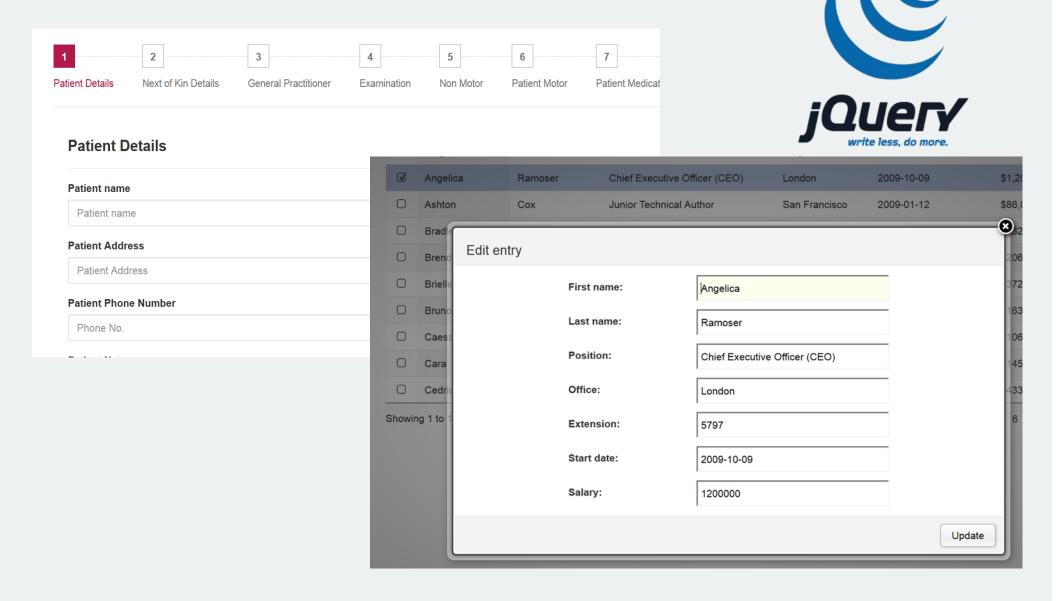
Analysis **Analysis Phase**

- Meeting with Movement Disorder Team
- Sat in on patient/doctor interview
- Discussed team members needs concerning form input to accurately assess requirements

EMR Implementation

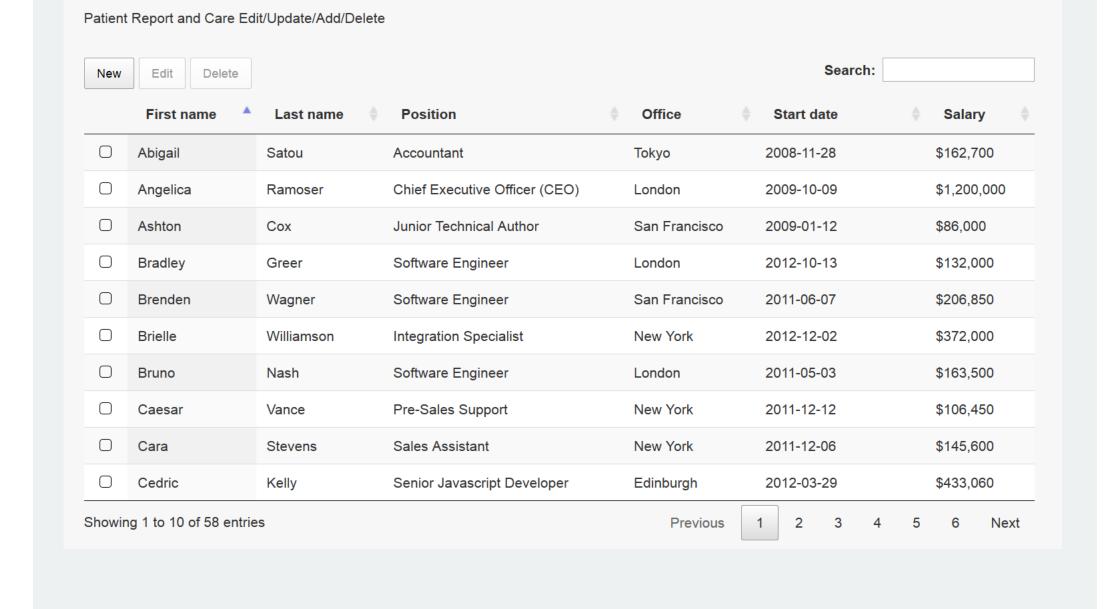
Patient Forms Interface

Online technologies such as JSON, JQuery which will allow me to show the database



CRUD Interface.

Is an Acronym for *Create, Retrieve, Update, Delete.* It is a term commonly used to describe basic database functions



Boundaries and Constraints

Issues with Time

- The EMR will be a prototype
- The project is too big for completion
- Other modules running at same time
- Must be within NHS guidelines (continuing research)

Risk Identification

Theft of patient medical records and personal information is on the rise. Health Information is being recognized as a valuable commodity on the black market.

Next Steps

Continue to develop

Further meetings have been scheduled with the team at James Cook as we move closer to designing the UI.

Licensing

As this is a bespoke application, it is essential that any sales of the software will be given upon license, that way the software remains the property of the developers.

Acronyms

Acronyms used

- **EMR** Electronic Medical Record
- **ERD** Entity Relational Database
- PD Parkinson's Disease
- **DBA** Database Administrator
- JSON JavaScript Object Notation
- **CRUD** Create, Read, Update and Delete
- **PHP** Hypertext Preprocessor.
- MYSQL Structured Query Language
- UI User Interface
- UX User Experience

Data Model Research

Continue Development Database Iterations **UI** Iteration

March Completion of prototype Completion of UI

April Carry on with development Begin Database Design



























February



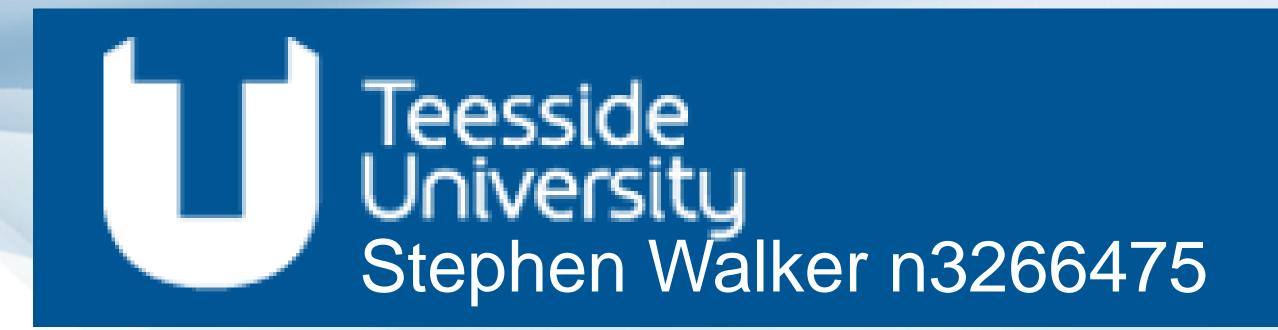












NHS MOVENET DATABASE



The MoveNet database is an electronic medical record (EMR) it is a digital version of a paper chart that contains all of a patient's medical history. This EMR will be used by the **Movement Disorder Services Team** who specialize in treating people with **Parkinson's disease (PD)** at James Cook University Hospital.

Legal Social and Ethical

As the data that I will be using as sample data for the system is fictional there will be no risk of breaking the data protection act in terms of breach of personal data from real clients. Another area that I looked further into was that of breaching the copyright designs and patents act, the images that I use will be mentioned and fully referenced within the final document.

- Ongoing research on NHS acceptance of EMR's as it may be necessary to get accredited by a third party.
- There are some obvious ethical issues concerning Dr/Patient private interviews, and patient data although in this case all data to be used in our prototype will be "Dummy Data".

Professional skills related to employment

Study Objectives

My time at Teesside University has allowed me to improve my understanding of programming languages and scripting languages such as PHP, JavaScript, jQuery and the development of Hybrid Applications built and then compiled with Phone gap all of which can run alongside CSS3 and HTML5 which are cutting edge technologies allowing me to implement my project in a very professional and up to date manner.

I have a keen interest in hybrid development and would like to pursue this technology further.

Data Modelling is a must for me and my interests and I intend to further develop my skills in that area as there is a great need for DBA's within this industry.

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