Outline

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App Recap
Motivation
Problem

Current Design
Progress Check
UML
Front-end
Back-end

Demo
Sample Walkthrough of a Neurolocalization

Reflection
Challenges
Future Work
Acknowledgements
Introduction

Recap of NeuroVeTele

- Client: Dr. Richard Shinn
- Neurolocation
- NeuroVeTele
- Plans for Multiplatforming and Monetization
Progress Check

January
- Problem Identification and Brainstorming
- Consultation with Dr. Shinn

February
- Client Design Mockup
- UML & Figma Design Completion

March
- Backbone of Front-end and Back-end
- Alpha Testing

April
- More Features
- More Testing
Current Design

Front-end
- main
- Launch Page View
- General Page View
- Cranial Nerves Page View
- PNS Page View
- Results Page
- Dashboard Page View

Back-end
- Page Controller
  - Page Model
    - Abstract Factory
    - Operator
    - NL
    - Option
    - Calculate
    - Dashboard Global
    - Dashboard Controller
    - Dashboard Model
Front-end

- Main -> General Page -> Cranial Page -> PNS Page -> Results
- MVC system
- Dashboard
Back-end

- Dashboard update to design
- Connection to MVC
- Proliferation of inputs
- Calculation of the weights
Demo

- See accompanying file NeuroVeTeleDemo.mp4:
Demo Sequence

Launch
Dashboard
Result

General

General Options

PNS

PNS Options

Dashboard
Result
Challenges

- Embed new features into the current patch

<table>
<thead>
<tr>
<th>Motor Activity</th>
<th>MSCS Score</th>
<th>Prognosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal gait and reflexes</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Hemi/tetraparesis or decerebrate activity</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Recumbent, intermittent ext. rigidity</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Recumbent, constant ext. rigidity</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Recumbent, constant ext. rigidity &amp; opisthotonus</td>
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<td></td>
</tr>
<tr>
<td>Recumbent, hypotonic muscles or decreased to absent reflexes</td>
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<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Brain-stem reflexes</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal PLR &amp; Oculocephalic reflex (OCR)</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Slow PLR, normal to decreased OCR</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Miosis OU, normal to decreased OCR</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Pinpoint pupils, decreased to absent OCR</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Unilateral, unresponsive mydriasis, decreased to absent OCR</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Bilateral, unresponsive mydriasis, decreased to absent OCR</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

In the face of head trauma, the face of a dog is shown with a tie.
Challenges

- Entry of a huge point system

On April 3, 2024 there were 739 lines. The number can be significantly increased.
Challenges

- CSV update technique

Diagram:
- Original App with default model
- Update CSV
- Developer
- Show the UI
- Client
- Export changed.txt
- Convert .txt file to .dart file
Challenges

- Neuro Exam Data on other sections
  - Involuntary Movement
  - Behavior
  - Mentation
  - Posture
  - Gait
  - Cranial Nerves
    - Vision
    - Menace
    - Pupil Size
    - PLR
    - Strabismus
    - ...
Future Work

● **Set up server**
  We hope the server could receive the point system edited by the user and update the config file.

● **Test with veterinary students**
  The software has only had a brief test with customers so far, but has not yet been put to use with the target audience.

● **Transition to other animals, like horse and cat**
  The app could easily support other animals with extra point system data based on the framework.

● **UI improvements**
  The UI can include a color scheme that reflects the VT theme, as well as adding more icons to reduce text.
Acknowledgements

Dr. Richard Shinn | Dr. Edward Fox | Satvik Chekuri | Dr. Yang Cao
References


