HFAD AnthroBase

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Introduction

- HFAD: Human Factors and Anthropometry Database
- Anthropometry: the measurement of the size and proportions of the human body
Motivation
Hand-Arm Rehabilitation Interface (HARI)

- Designed by Rutger’s University Biomechanics and Rehabilitation Engineering Lab
- Analyzes movement of the arm
Goals

- To design a database containing average measurements of the human upper body
- With such information, researchers can improve HARI design and collect more accurate data

http://blog.tmcnet.com/blog/tom-keating/images/easy-button.jpg
Data Collection

- Anthrokids
- Database Design Tree

<table>
<thead>
<tr>
<th></th>
<th>Site</th>
<th>Stat/Data</th>
<th>Format</th>
<th>Pros / Cons</th>
<th>Subjects</th>
<th>Hand / arm / posture</th>
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<td>Stat</td>
<td>pdf</td>
<td>strength test - unique</td>
<td>?</td>
<td>Hand</td>
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<td>raw data - lots of info</td>
<td>lots</td>
<td>Hand and arm and ?</td>
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<td>?</td>
<td>Arm and Posture</td>
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<td>Raw Data</td>
<td>excel</td>
<td>age specific/raw data</td>
<td>lots</td>
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<td>pdf?</td>
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</tbody>
</table>

? Denotes an unknown
Timeline
Why Access?

- Easily Organized
- Simple Programming Language
WARNING!

The system is either busy or has become unstable. You can wait and see if it becomes available again, or you can restart your computer.

* Press any key to return to Windows and wait.
* Press CTRL+ALT+DEL again to restart your computer. You will lose unsaved information in any programs that are running.

Press any key to continue...
Data Table Cleaning in MATLAB

The system is either busy or has become unstable. You can wait and see if it becomes available again, or you can restart your computer.

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* Press CTRL+ALT+DEL again to restart your computer. You will lose unsaved information in any programs that are running.

Press any key to continue →
The Running Man
Splash Design+Programming
Learning VBA to Design Interface

• Simple for the User
Designing & Programming an Interface

Command Button
ListBox
HFAD AnthroBase

Select the Quarter:
- Female_25 Height_Sitting_Number
- Female_25 Height_Sitting_Hip
- Female_25 Height_Sitting_Standard_Division
- Female_25 Height_Sitting_10th
- Female_25 Height_Sitting_50th
- Female_25 Height_Sitting_90th
- Female_25 Height_Sitting_Min
- Female_25 Height_Sitting_Max
- Male_25 Height_Sitting_Number
- Male_25 Height_Sitting_Hip
- Male_25 Height_Sitting_Standard_Division
- Male_25 Height_Sitting_10th
- Male_25 Height_Sitting_50th
- Male_25 Height_Sitting_90th
- Male_25 Height_Sitting_Min
- Male_25 Height_Sitting_Max

Plot it!
Anthropometric Database Model
HARI and the Database
One Final, Complete Interface

• Together, the Model group and the Database group make one complete, usable interface
Acknowledgements

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Questions