Übung 1 – Mensch-Maschine-Interaktion

Topic: Rapid and Aimed Human Movement

Part 1. Understanding Fitts' Law

Familiarize yourself with the concept of the human psychomotor behaviour as described in *Fitts' Law*. Explain the concept in about 100 words in the main text of the submission mail.

Part 2. Developing an Experiment to Investigate Pointing Performance on Touch Screen Displays

a) Develop an experiment and create a program to experimentally assess the pointing performance of a user. The task is to move from a start point to a target area on the touch screen using a finger or a pen.

For the experiment, the following parameters should be varied:
  Distance between start position and the target
  Size of the target area (a square or circle, use a small minimum size)

The program should automatically record the parameters that are varied and the time needed by the user to perform the task for this configuration. For brevity, it is sufficient to provide an output string which can be copied manually into a text file.
For the implementation, you may use a technology of your choice. It has to run at a PC with Windows, Internet connection, and the latest Java version.

b) Perform the experiment on the LFE's SmartBoard (in the next exercise you will get a time slot for using the SmartBoard). In a first series of tests, the distance parameter should be varied, in a second series the size parameter (the other parameter remains unchanged). Repeat the task until you get meaningful data for both test series. Analyse the data recorded in the experiment and describe your results.

The tasks should be solved in teams of three students. You will be allocated to a team by Monday, October 24th – please register on the lecture's homepage by Friday, October 21st.

25/26th October 2005: Questions and answers, discussion of problems. Allocation of timeslots to use the SmartBoard.

1st November 2005, 8 a.m. CET: Deadline for submission of solutions. Email your solution to mmi1@hcilab.org. Use a .zip attachment named **uebung1-N.zip** (where N is the name of your group) containing:
- A data file containing the data and a graphical analyses (we recommend to use a spreadsheet program such as Open Office Calc or Excel)
- A file in which the results are described (preferably in PDF)
- The source code of your implementation
- Your executable software

1st/2nd November 2005: Present your solution for **2 a)** in the exercise session.