

Übung 1 – Mensch-Maschine-Interaktion

Theme: 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 briefly.

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 squared target area

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 the technology of your choice. It has to run at a PC with Windows OS, 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 the distance parameter should be varied, in a second series the size parameter should be varied (the other parameter stays constant). Repeat the task until you get meaningful data for both test series. Analyze the data recorded in the experiment and describe your results.

You are expected to provide a solution for **part 2** (a + b). The tasks should be solved in teams of three students.

29.10.04: Questions and answers, discussion of problems.

04.11.04: Present your solution for **2 a)** in the exercise. Your software should be available online either as web application or for download onto the presentation PC. Alternatively you can send it by mail to andreas.pleuss@ifi.lmu.de until 03.11.04.

In the exercise each team will get a date when it may use the smartboard for the experiment.

11.11.04: Submit the complete solution of exercise **2 a) + b)** to andreas.pleuss@ifi.lmu.de. Please provide a zip archive containing:

- A data file containing the data and a graphical analyses (we recommend to use a spreadsheet program such as Excel or Open Office Calc)
- A file in which the results are described (preferably in PDF)
- The source code of your implementation,
- Your executable software or a link on your web application.

All files, except the source code, must be named with <first name>_<surname>