Ergonomic inspection using documents

Objectives

The objective of this tutorial is to familiarise you with the document-guided ergonomic inspection exercise. Ergonomic inspection involves the expertise of the evaluator guided by **reference documents**. The inspection applies to all stages of design and development of an interactive system (from programming ergonomics to the final evaluation of the system in situ).

The main principle is not to **correct** possible issues, but to **identify** and justify ergonomic problems that may prove to be major in use (and potentially lead to major problems)..

The main steps of the ergonomic inspection to follow

Your document-driven ergonomic inspection will follow the following general outline:

1. Familiarisation with / reading of reference documents (see below);
2. Description of the target users (e.g. IT staff taking over the project, lambda user, ...), the inspection context, the inspectors, the test machine;
3. Description of the tasks/activities to be carried out with the system;
4. System recovery / installation. At this stage, problems with the installation / transfer of the system should be identified and described;
5. **Once** the system is installed, inspection of the system based primarily on the **INRIA report on Ergonomic Criteria** (Bastien, Scapin), **the ANSI standard** and **Nielsen heuristics** (see links).
6. Identification of about 20 problems;
7. Description, illustration and ranking of problems using the Scapin/Bastien Ergonomic Criteria;
8. Generation of some descriptive statistics (e.g. number of problems found, distribution on the 10 ergonomic criteria);
9. Finally, writing the inspection report including a discussion of the approach, difficulties encountered, limitations and a conclusion.

The system to analyse

The system to inspect is the latest version of the Arduino IDE (**version 1.8.16**) available at `http://www.arduino.cc`

- The target user is a computer scientist with knowledge of the C/C++ languages
- The tasks to be carried out in order to evaluate the system will be:
  1. instal the IDE on your OS,
  2. write a sketch,
  3. compile the arduino sketch **including external libraries**
  4. and transfer the code to an arduino compatible board (the rigth hardware used is to be defined).

All of these tasks detailed above should help guide your ergonomic inspection

Reference documents

- **Ergonomic Criteria for the Evaluation of Human Computer Interfaces,** version 2.1, J M Christian Bastien, Dominique Scapin, May 1993, Rapport INRIA, `https://hal.inria.fr/inria-00070012/document`
- **ANSI INCITS 3542001** corresponding to ISO/IEC 25062:2006: Common Industry Format (CIF) for Usability Test Reports. For the purpose of this tutorial, the focus should be on **Annexes A** (page 15) and **C** (page 23). These annexes should be adapted to the context of the inspection, as some of the information is not relevant because it is only valid for user testing
- **10 Usability Heuristics for User Interface Design,** `https://www.nngroup.com/articles/ten-usability-heuristics`

Work to submit (by email to Philippe.Truillet@univ-tlse3.fr)

Write an inspection report.

(***Tip***: it is useful to illustrate your report with some screen prints).

Deadline for submission: Sunday 09 January 2022, 23:55 UTC+1

Send your work to Philippe.Truillet@univ-tlse3.fr (If you have too large files to send, you can use a cloud or transfer service such as https://www.wetransfer.com)

Each day of delay will occur a 0.25 pt penalty.