

# **Engenharia Informática (DI/FCT/UNL)**

2009/2010

## **Interacção Pessoa-Máquina**

### **Exame Época Normal**

January 20, 2010

Duration: 2h

The exam is in English. You may answer the questions in English or Portuguese. Either way, you should be concise and clear.

- 1) We can consider two types of pointing devices: direct-control pointing devices, such as the touchscreen and indirect-control pointing devices, such as the mouse or touchpad. Describe the advantages and disadvantages of each type of pointing device and give an example of a task where it is more appropriate to use a direct-control pointing device.
- 2) Name 2 differences between long and short term memory.
- 3) Explain why interactive system response to user's action should be kept short.
- 4) Fitt's law is a predictive model of time. What does it predicts?
  - A. The time a user takes to figure out the position of a target on the screen based on the target size.
  - B. The number of words per minute a user can type.
  - C. The time it takes to point to a target based on its size and distance.
  - D. The time it takes to move and place a target on the screen based on the distance.
- 5) Colour displays are attractive to users and can often improve task performance, but colour must be carefully used. List 4 guidelines for using colour and give an example of each.
- 6) What is internal consistency?
- 7) List 3 guidelines for the design of effective error messages in software products.
- 8) For each of the following situations, explain what is wrong with the corresponding error messages and suggest a better message to convey to the users:
  - a) Your cell phone is out of range and you got the following error message when you try to make a phone call: ERROR CODE 4563.
  - b) You are trying to log on to your home banking site and you typed the wrong password. The following message appears: Authorization required: You are not good enough to enter this web site until you prove yourself worthy.
- 9) How does the outcome of a usability test differ from the outcome of controlled experiment? Describe 1 situation where the use of a controlled experiment would be more appropriate.

- 10) Consider the following two methods for printing (in the default printer) pages 3-6 of the current opened file in a Word Processor. Present the keystroke level model for these two methods. For each step, indicate the user action. You don't need to indicate the exact time value for each action.
- a) Method 1: Use only the keyboard to open the dialog box "Print" (Alt-F-P) and enter the pages to print.
  - b) Method 2: Use the mouse to select the option "Print..." in the file menu and open the "Print" dialog box, and use the keyboard to enter the pages to print.
- 11) A company hired you as a HCI expert. They have a nearly working version of a public information system about the transports in Lisbon and want you to look at it quickly, so they can release it.
- a) What is wrong with this approach?
  - b) What would have been the correct approach?
- 12) a) Describe the design flaws in the interface below.

The screenshot shows a web form titled "Well Being Clinic" with a blue header. Below the header, there is a large grey box containing the text "Well Being Clinic". The form has several input fields and buttons:

- A "Last name" label above a text input field.
- A "Full name:" label above a text input field.
- A "Date (today):" label above a text input field.
- A "Symptom description and code:" label above a large text area.
- An "Enter" button next to the "Last name" field.
- A vertical "Reset" button on the right side of the form.

- b) Name 2 heuristics that have been violated by this interface (consider Nielsen heuristics). Justify.

**GOOD WORK!**