Übungen zur Vorlesung
Mensch-Maschine-Schnittstelle

- jeden Dienstag, 16 - 17 Uhr, Raum ExWi B7:
  - Besprechung der zuvor abgegebenen Serie und
  - Bemerkungen zur neuen Serie

- neue Serie: alle 2 Wochen in der Übungsstunde und online

- Abgabe: 2 Wochen nach Ausgabe
  - elektronisch per Email an MMSHCI@gmail.com
  mit Betreff: MMS-Blatt X - Name(n) und
  - auf Papier vor der Übungsstunde.

- 2-er Teams bilden

- Kontakt: claudia@asti.ch & wachter@iam.unibe.ch

- Homepage: http://www.iam.unibe.ch/~iam/mms/
Serie 1 - Der Mensch (The Human)

Übungsteil

Aufgabe 1:
Observe skilled and novice operators in a familiar domain: for example, touch and 'hunt-and-peck' typists, expert and novice game players, or expert and novice users of a computer application. What differences can you discern between their behaviours?

Aufgabe 2:
Das Experiment (a) wird in der ersten Übungsstunde durchgeführt, (b) in der zweiten.

Human short-term memory has a limited span. This is a series of experiments to determine what that span is. (You will need some other people to take part in these experiments with you - they do not need to be studying the course - try it with a group of friends.)

(a) Kim's Game: Divide into groups. Each group gathers together an assortment of objects - pens, pencils, paper-clips, books, sticky notes, etc. The stranger the object, the better! You need a large number of them - at least 12 to 15. Place them in some compact arrangement on a table, so that all items are visible. Then, swap with another group for 30 seconds only and look at their pile. Return to your table, and on your own try to write down all the items in their pile. Compare your list with what they actually have in their pile. Compare the number of things you remembered with how the rest of your group did. Now think introspectively: what helped you remember certain things? Did you recognise things in their pile that you had in yours? Did that help? Do not pack the things away just yet. Calculate the average score for your group. Compare that with the averages from the other group(s). Questions: What conclusions can you draw from this experiment? What does this indicate about the capacity of short-term memory? What does it indicate that helps improve the capacity of short-term memory?

(b) Improving your memory: Try experiment (a) again, using the techniques from Abbildung 1. Has your recall ability improved? Has your group's average improved? What does this show you about memory?
Improve your memory

Many people can perform astonishing feats of memory: recalling the sequence of cards in a pack (or multiple packs – up to six have been reported), or recounting pi to 1000 decimal places, for example. There are also adverts to ‘Improve Your Memory’ (usually leading to success, or wealth, or other such inducement), and so the question arises: can you improve your memory abilities? The answer is yes; this exercise shows you one technique.

Look at the list below of numbers and associated words:

1  bun  6  sticks
2  shoe  7  heaven
3  tree  8  gate
4  door  9  wine
5  hive 10  hen

Notice that the words sound similar to the numbers. Now think about the words one at a time and visualize them, in as much detail as possible. For example, for ‘1’, think of a large, sticky iced bun, the base spiralling round and round, with raisins in it, covered in sweet, white, gooey icing.

Now do the rest; using as much visualization as you can muster: imagine how things would look, smell, taste, sound, and so on.

This is your reference list, and you need to know it off by heart.

Having learnt it, look at a pile of at least a dozen odd items collected together by a colleague. The task is to look at the collection of objects for only 30 seconds, and then list as many as possible without making a mistake or viewing the collection again. Most people can manage between five and eight items, if they do not know any memory-enhancing techniques like the following.

Mentally pick one (say, for example, a paper clip), and call it number one. Now visualize it interacting with the bun. It can get stuck into the icing on the top of the bun, and make your fingers all gooey and sticky when you try to remove it. If you ate the bun without noticing, you’d get a crunched tooth when you bit into it – imagine how that would feel. When you’ve really got a graphic scenario developed, move on to the next item, call it number two, and again visualize it interacting with the reference item, shoe. Continue down your list, until you have done 10 things.

This should take you about the 30 seconds allowed. Then hide the collection and try and recall the numbers in order, the associated reference word, and then the image associated with that word. You should find that you can recall the 10 associated items practically every time. The technique can be easily extended by extending your reference list.

Pflichtteil

Aufgabe 3:
What are mental models, and why are they important in interface design?

Aufgabe 4:
What is the difference between recognition and recall in relation to human memory? Discuss the implications of this for interface designers.

Aufgabe 5:
Is it important that system designer takes account of individual differences when creating an interactive system? Justify your answer.

Lösungen

Die Antworten zu den Aufgaben 3, 4 und 5 sollen in schriftlicher und elektronischer Form bis zum Dienstag, 09.10.2007, abgegeben werden.

- schriftlich: vor der Übungsstunde;
- elektronsich: per Email an MMSHCI@gmail.com mit Betreff: MMS-Blatt 1 - Name(n).

Keine WORD-Dateien, sondern einfache Text- oder PDF-Dateien verwenden!