2001

p7q10
AFB

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Paper 7: HCI question - Marking guide

First part:
* 1 mark for each device named. This should be reasonably contemporary with the mouse - anything that only became widespread in the 1990s, such as CD ROMs or 3D graphics cards, would not receive a mark. [2 marks]
* 1 mark for each contrast, comparison or relationship between the mouse and the named device. These should be related to usability. [2 marks]
* 1 mark for each relationship to a theory. Direct manipulation is most likely to be mentioned, though not essential. [2 marks]

Possible total: 6 marks

Second part:
* 1 mark for each cognitive dimension named. Slight variations in terminology are acceptable, if the dimension is clearly recognisable. [2 marks]
* 1 mark for a design suggestion that shows the candidate has correctly understood the definition of that dimension. [2 marks]

Possible total: 4 marks

Third part:
* 1 mark for each cognitive subsystem named. Most likely components include short term memory, long term memory, motor control, visual perception. Answer can either be a diagram schematic or narrative. [5 marks]
* 1 mark for each description of some cognitive aspect of an evaluation method. Heuristic evaluation may be difficult - a mark can be awarded for the observation that it does not emphasise cognitive properties (although some heuristics are related to perceptual skills). [5 marks]

Possible total: 10 marks

QUESTION 7 PART (A) PAPER 7, HCI SAMPLE ANSWER 1/3

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THE MOUSE WAS DEVELOPED AFTER THE LIGHT PEN ✓ WAS IN USE, AND WHEN CRT DISPLAYS WERE GENERALLY USED IN CHARACTER MODE ✓ AS "GLASS TELETYPES".

THE MOUSE, LIKE THE LIGHT PEN, WAS A POINTING DEVICE, BUT IT REQUIRED LESS CHANGE IN HAND POSITION FROM THE KEYBOARD ✓ ALTHOUGH BOTH USED TO SELECT MENU ITEMS FROM CHARACTER-MODE DISPLAYS, IT WAS FIRST DEVELOPED IN CONJUNCTION WITH BIT MAPPED DISPLAYS FOR USE IN GRAPHICAL MANIPULATION.

THE MOUSE WAS CLOSELY ASSOCIATED WITH DIRECT MANIPULATION ✓ — THE PRINCIPLE THAT STORED VISUAL ENTITIES IN THE COMPUTER SHOULD BE REPRESENTED BY PHYSICAL OBJECTS THAT COULD BE "GRASPED" AND MOVED WITH THE MOUSE. THE USE OF THE MOUSE ✓ FOR POINTING MOVEMENTS REQUIRED FITTS LAW TO PREDICT MOVE TIMES

[5:2½]

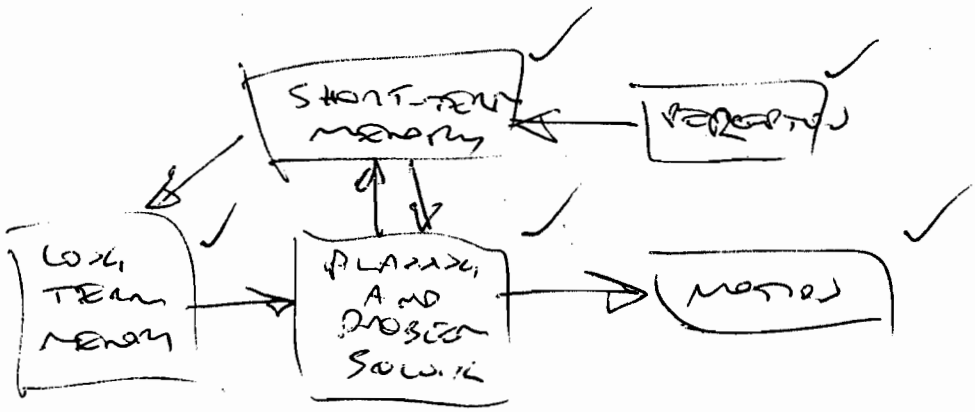
QUESTION 7 PART (B) P7-HCI 2/3

IF IT WAS VERY DIFFICULT TO MOVE A SLIDE TO A DIFFERENT POSITION IN THE ORDERING THIS WOULD REPRESENT VISCOSITY - DIFFICULTY IN MAKING SMALL CHANGES. IN POWERPOINT THIS HAS BEEN ADDRESSED BY THE LITTLE SLIDES MENU, WHERE CHANGES IN ORDER CAN BE MADE BY DIRECT MANIPULATION.

SOME PRESENTATION PACKAGES ALLOW NOTES TO BE ASSOCIATED WITH EACH SLIDE. IF THE NOTES FOR MORE ONE SLIDE ARE VISIBLE AT A TIME, THIS IS A PROBLEM OF JUXTAPOSABILITY BECAUSE YOU CAN'T COMPARE THEM. IT COULD BE ADDRESSED BY MAKING NOTES VISIBLE IN THE TEXT VIEW - PERHAPS MARKED IN A SPECIAL COLOR TO DISTINGUISH THEM FROM SLIDE TEXT

[10:48]

QUESTION 7 PART (c)



KLM IS MOST RELATED TO MOTOR, AS IT GIVES A METHOD ESTIMATE OF HUMAN MOTOR TIMES. IT GIVES A FIXED TIME, "MENTAL PREPARATION" TO ACCOUNT FOR ALL OTHER COGNITIVE PROCESSES

GOMS INCLUDES AN EXPLICIT MODEL OF PLANNING AND PROBLEM SOLVING (GOALS, OPERATORS, METHODS, SELECTION) THAT CAN BE USED IN CONJUNCTION WITH KLM (TO ESTIMATE THOSE METHODS CHOSEN)

COGNITIVE WALKTHROUGH DESCRIBES LEARNING - THE INTERACTION OF THE INTERFACE WITH LONG-TERM MEMORY, AND PERCEPTION WHERE DISPLAY MUST MATCH GOALS.

HEURISTIC EVALUATION IS NOT BASED ON ANY DEEP COGNITIVE THEORY. SOME HEURISTICS, SUCH AS "UNCLUTTERED DESIGN" MIGHT RELATE TO PERCEPTION

[16:44]