

## Introduction - The Computer

### Assessment Task Number 1

1) Individually or in a group find as many different examples as you can of different examples as you can of physical controls and displays.

- (a) List them.
- (b) Try to group them, or classify them.
- (c) Discuss whether you believe the control or display is suitable for its purpose

2) A typical computer system comprises a QWERTY keyboard, a mouse and a color screen. There is usually some form of loudspeaker as well. You should know how the keyboard, mouse and screen work. What sort of input does the keyboard support? What sort of input does the mouse support? Are these adequate for all possible applications? If not, to which areas are they most suited? Do these areas map well onto the typical requirements for users of computer systems? If you were designing a keyboard for a modern computer, and you wanted to produce a faster, easier-to-use layout, what information would you need to know and how would that influence the design?

3) Pick one of the following scenarios, and choose a suitable combination of input and output devices to best support the intended interaction. It may help to identify typical users or classes of user, and identify how the devices chosen support these people in their tasks. Explain the major problems that the input and output devices solve.

(a) Environmental database A computer database is under development that will hold environmental information. This ranges from meteorological measurements through fish catches to descriptions of pollution, and will include topographical details and sketches and photographs. The data has to be accessed only by experts, but they want to be able to describe and retrieve any piece of data within a few seconds.

(b) Word processor for blind people A word processor for blind users is needed, which can also be operated by sighted people. It has to support the standard set of word-processing tasks.

## **ANSWER**

### **1. PHYSICAL CONTROLS**

#### **SOUND OUTPUT**

We do not yet know how to utilize sound in a sensible way to achieve maximum effects and information transference in HCI. However, by having sounds a right action, we can speed up interaction.

#### **Printing**

The most common printers nowadays are dot-based. In order of increasing resolution, familiar types are dot-matrix printers, ink-jet printers and laser printers.

#### **TOUCH, FEEL AND SMELL**

Force feedback gives different amounts of resistance to an input device depending on the state of the virtual operation. Haptic devices are various forms of force, resistance and texture influencing our physical senses.

#### **DISPLAY CONTROL**

##### **DIGITAL PAPER**

Flexible material that can be written to electronically, but keeps its contents when removed from the power supply.

##### **TECHNOLOGIES**

As the beam hits the phosphor coated screen, the phosphor is excited by the electrons and glows. Flicker can be reduced by increasing the scanning rate or by interlacing, in which odd lines are scanned, followed by even lines.

##### **BITMAP DISPLAYS, RESOLUTION AND COLOR**

Bitmap-base means that the display is made of a fixed number of dots or pixels in a rectangular grid. The color or intensity at each pixel is held by the computer's video card. The more bits per pixel, the more colors/intensities are possible.

2. The input devices the keyboard support are typing text, entering numerical and use in the editing. The mouse support choosing menus. This is adequate for all applications because these devices are suitable for all possible input data's. For me the opinions and suggestions of the user are very important information that the designer wants to know because the user can know the suitable keyboard that can be used. The suggestion will influence the design because the designer is following the wants of the user.

**3. (a)** Environmental database A computer database is under development that will hold environmental information. This ranges from meteorological measurements through fish catches to descriptions of pollution, and will include topographical details and sketches and photographs. The data has to be accessed only by experts, but they want to be able to describe and retrieve any piece of data within a few seconds.

**(b)** This scenario can be solved by a speech recognition and a sound output. Blind users won't be able to use a keyboard though there's a keyboard for blind, speech recognition will be more easy for them than typing and sound out will be the one giving instruction to the user since normal display won't be much use for blind users.