Your notes

Cambridge National IT: revision notes

Human computer interface (HCI) in everyday life

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What HCI is

- A human computer interface (HCI) is the way a person and a device communicate: how the person gives instructions, and how the device gives information back.
- HCI is everywhere: domestic appliances (washing machines, smart speakers), entertainment (games consoles), shops (self-service checkouts, cash machines), education, healthcare, industry and transport (sat navs and car dashboards).

Types of interface

- Graphical user interface (GUI): windows, icons, menus and a pointer. It is easy to learn, but uses more memory and processing power.
- **Command-line interface**: the user types commands. It is fast and powerful for experts, but hard to learn.
- **Menu-driven interface**: the user picks from lists of options, like a cash machine. It is simple, but can be slow if there are many levels.
- Natural language (voice) interface: the user speaks, as with a smart speaker. It is hands-free, but may misunderstand accents or background noise.
- Touch and gesture interfaces: touchscreens (tap, swipe, pinch) and motion sensors (waving, pointing).

Hardware and software considerations

- Hardware: input devices (touchscreen, keyboard, microphone, camera, sensors), output devices (screen, speakers, **haptic feedback** such as vibration), and the size of the device.
- Software: **accessibility** (text size, colour contrast, screen readers, subtitles), ease of use, a consistent layout, clear feedback and language options.

Designing a good HCI

- Think about the users (age, experience, abilities and disabilities), the environment (noisy, outdoors, bright light, moving), the task (does it need speed or accuracy?) and the cost.

Key terms

HCI	Human computer interface: the way a person and a device communicate.
GUI	Graphical user interface, with windows, icons, menus and a pointer.
Command-line interface	An interface where the user types commands.
Menu-driven interface	An interface where the user chooses from lists of options.
Natural language interface	An interface the user controls by speaking normally.
Accessibility	Making technology usable by as many people as possible, including disabled people.
Haptic feedback	Vibration or movement that the user can feel.

Quick questions

Cover the answers and test yourself: remembering is what makes it stick.

1. What does HCI stand for?
2. Which interface uses windows, icons, menus and a pointer?
3. What is one disadvantage of a command-line interface?
4. Which type of interface does a cash machine usually use?
5. Why are voice interfaces useful for people with limited movement?
6. What is one problem with voice interfaces?
7. What is haptic feedback?
8. Which of these is an accessibility feature?

Answers

1. Human computer interface
2. A graphical user interface
3. Users need to learn and remember the commands
4. A menu-driven interface
5. They can be used hands-free
6. They can misunderstand accents or background noise
7. Vibration or movement that you can feel
8. A screen reader

Your notes

What to do next

Practise 12 questions on this topic

Try 4 exam questions, with mark schemes

Read the lesson, one step at a time

Free revision for GCSE and KS3 at lycolearn.co.uk. Some notes are for one exam board only, and say so in brackets.

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