Computing Knowledge Organiser
Unit: Introduction to User Interfaces

SANDHILL VIEW
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User Interfaces
A user interface is the hardware and software that a user interacts with to use or control a computer or electronic device.
Software features include virtual keyboards and virtual buttons that can be clicked, such as to close a window.

Many human features are used for computer interaction, including:
Movement – fingers on a keyboard/mouse/touch screen; moving to cause infra-red sensors to turn on a security alarm
Voice – a microphone and software can interpret commands

Text based interfaces are only able to display text on the screen
Commands are typed into the computer to run programs or manage files
Technical users and some programmers will still use text interfaces as it is faster to carry out some tasks in Windows, MacOS and Linux, the command prompt and terminal still exist.

Speech is increasingly used to interact with devices.
Speech has been used since the 1990s for voice dictation in word-processors. The quality and accuracy has improved considerably so that it is now used for many different devices.

Ways that users can interact with an user interface:
Audio – commands spoken to voice assistants, text to speech, sound tracks, music, warning sounds
Mouse – click, drag, select, double click, scroll
Touchscreen – touch, swipe, double touch, pinch, swipe left/right, swipe up/down
Haptic – vibrate
Buttons – click, hold
Keyboard – press keys, enter text

Storyboards show the sequence of screens in an app, website or program. They use the perspective of the user. They are useful to discuss the overall design and functionality with the client.

Storyboards use **sketches of each screen** showing:
- The layout of assets
- The correct proportions of assets
- Colours may be used

Storyboard show more than just sketches:
- They show how screens link together
- Annotation shows actions that are occurring – just as touch, click, swipe left/right/up/down, double touch, touch and hold, shake, voice entry
- Annotation may also describe processing – such as 'change style', 'save record', 'print record'

GUIs are Graphical User Interfaces
WIMP (Windows, Icons, Menus and Pointers) are used for traditional computers Smartphones still use icons and menus but they don't use pointers when touch screens are used.

Sensors will automatically give feedback to computer systems or embedded systems
Sensors are everywhere in our daily lives. For example: Automatic doors make use of pressure sensors under a rubber matt or optic or motion sensors above the door