Year 10 – Unit 1A

ICT Knowledge Organiser
Unit 1: Assignment A – Investigating User Interfaces

Keywords

KEYWORD	DEFINITION
1. Accessibility	This is linked to ensuring that everyone can use an interface regardless of ability or disability.
2. Colours	Interfaces should use no more than 3 colours and these should be opposites on the colours wheel.
3. Content	This means making sure that there is enough information and a good use of white space.
4. Demographics	The characteristics of the people who are using the interface – age, culture/beliefs and experience.
5. Expert	These are people who have had a lot of experience using an interface and need little support.
6. Font Style	This is the style of the writing. This falls into serif and sans serif styles.
7. Intuitive	This means that the interface is easy to understand and you can figure out how to work it on your own.
8. Language	Using appropriate language for the target user that allows them to engage fully. Technical / simplistic.
9. Layout	This is related to the layout of the interface and where things are located to make it useable.
10. Novice	These are beginners to using interfaces and will need to have a lot of support.
11. Performance Response Time	This is the time that it takes the device and user interface to respond to a user request.
12. Retain Attention	This means that the interface keeps the users' attention by grabbing their attention.
13. User Interface (UI)	A piece of software that allows you to interact with a device to complete a series of tasks.
14. User Requirements	This is what the user wants/needs from the user interface and is dependent on the UI purpose.
15. White Space	This is the blank space found on an interface, it can be any colour and it is important for usability.

Skills Checklist – by the end of this unit you will…
1. Be able to identify different types of user interface.
2. Be able to describe the design principles used on interfaces.
3. Be able to justify the advantages of alternative interface designs for accessibility.

User Interface Types

A

A **User Interface** is a piece of software that allows a user to interact with a device. There are 6 main types of user interface. It allows you to respond to a device by entering information using a mouse, keyboard or touchscreen. Without a user interface then you would not be able to use a device.

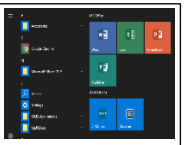
GUI

A graphical user interface is the most common type of UI. It is a 'friendly' way for people to interact with the computer because it uses graphics. It is also known as WIMP because it uses Windows, Icons, Menus and Pointers.

Text

A text interface works by the user entering specific commands with the keyboard. When these have been entered, the user interface will then respond. An example of this type of interface is DOS (Disk Operating System).

Menu



This interface lets you interact with a computer by going through a series of screens or menus. Menu interfaces can also be verbal, call centre automated menus. A menu interface is simple to use, you make your choices using a keyboard, mouse etc

Sensor

Touch sensitive interfaces can be found on many mobile devices such as a smart phone a tablet. They work by your finger touching the screen. ATMs have touch sensitive screens to select a service. They are good as you do not need external devices.

Speech

This interface allows the user to speak in order to interact with the computer. Some apps can convert words into text. An example is a 'chat bot'. This is the most technically challenging interface for designers as it works with different accents.

Form

A form interface works by the user inputting data into allocated areas on the interface. They are used when you know what data you want the users to input or when you want data to be input in order. They are easy to use and require no training.

Users and Their Needs

Novice Users - A novice user may have little experience using a device and might be limited in their ability. They might need supervision, extra instructions or support to complete advanced tasks. They may face higher levels of frustration due to fear of failure.

Expert Users - An expert user will have a lot of experience in using a range of different technologies. They will be able to use interfaces confidently and navigate them on their own. They will know instinctively what to do and might be able to predict outcomes.

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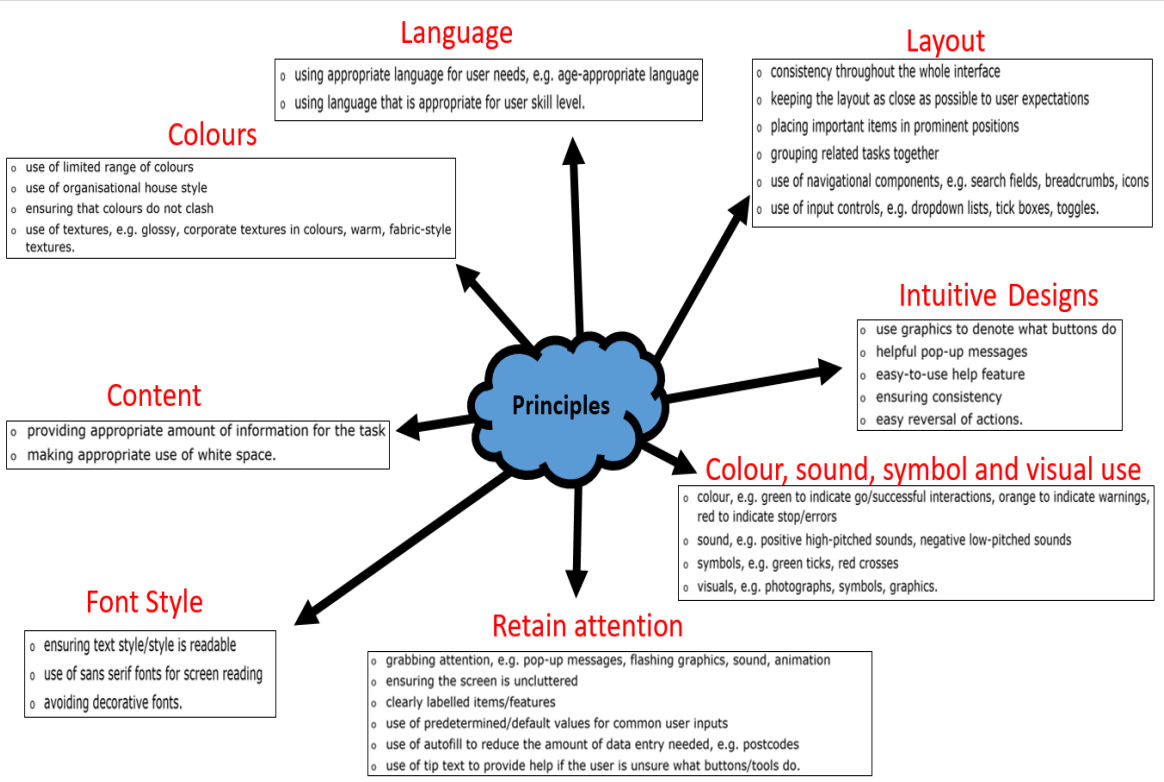
Design Principles B

A design principle is like a rule that should be followed when making an interface. They ensure that the interface is usable and that it is of a good quality. There are 8 key principles to follow, as seen below, but not all principles apply to all interface types due to design complexities.



A larger version of this mind map can be found in the student area on the school network in the BTEC folder.

It is important that when designing and developing an interface that the design principles are taken into consideration as they could cause the interface to not be successful. When looking at interfaces you should try to identify where they have used each of these principles.

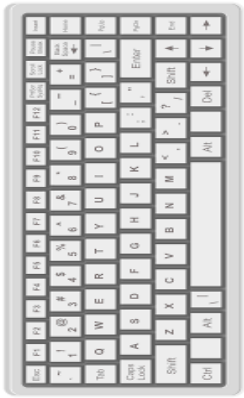
Extra Fact Website Links

www.teach-ict.com
https://en.wikipedia.org/wiki/Principles_of_user_interface_design
http://bokardo.com/principles-of-user-interface-design/
https://www.bbc.co.uk/bitesize/guides/zwb4jxs/revision/1

Alternative Design C

Accessibility - The word 'accessibility' refers to the design of a product for users who experience disabilities (visual, hearing, speech, motor and cognitive). Devices are built with accessibility options so that users can change the way that the user interface looks, feels and sounds to suit their needs. User interfaces can also include features to give the users control over how the interface appears, for example adding a zoom option, adding translation services or changing the colour setup. The more accessible the interface is then the more successful it will be.

Skills and demographics - The term demographics links to the characteristics of the people who are using the interface. When designing the interface, it is important to consider the three main factors of Age, Culture/Beliefs and Experience. If you take these into consideration then the interface will be accessible and usable to more people. You must also factor in what skills the users of the interface will have as this will inform the interface content and structure. If you do not consider this then it will not meet the user needs.



Keyboard shortcuts - When designing and developing an interface the developer could add in some keyboard shortcuts. These are useful because they speed up the time taken to input commands and therefore complete activities. They can help to allow an interface to meet the needs of novice and expert users at the same time. There are many different shortcuts available, the most common ones are:

Ctrl + A = Select All / Ctrl + X = Cut /
Ctrl + C = Copy / Ctrl + V = Paste /
Ctrl + Z = Undo / Ctrl + Y = Redo