**ACTIVITY No. 3 : Interacting with Computer Technologies**

**Objective**

Examine users’ ability to communicate with technologies.

**Time:** 1 hour and 30 minutes

**Materials**

Personal computer

Internet connection

**Procedure**

1. Search 5 technologies which designs depict for easy interaction with users. Provide picture for each technology.

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| 1. | Name: Touchscreen |
| Touchscreens are interactive technologies that are designed for easy user interaction. They allow users to directly interact with a display by touching it. |
| 2. | Name: Voice Assistant |
| Voice assistants like Siri, Alexa, and Google Assistant are designed to interact with users through voice commands. They provide a hands-free way to access information and control devices. |
| 3. | Name: Gesture Recognition |
| Gesture recognition enables users to interact with devices using gestures. It allows for a more natural and intuitive way of controlling devices. |
| 4. | Name: Facial Recognition |
| This technology uses biometric data to identify and authenticate users. It provides an interactive and secure way for users to interact with their devices. It can be used as another layer of protection for apps and devices, or to eliminate the need for traditional login methods. |
| 5. | Name: Artificial Intelligence |
| AI technology enhances user interaction by enabling personalized experiences, intelligent responses, and predictive suggestions. AI-powered systems can adapt to user preferences and provide specific recommendations. |
| Source: | |

1. Search 5 technologies which designs depict for difficult interaction with users. Provide picture for each technology.

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| 1. | Name: Brain Computer Interface |
| This technology monitors and analyzes brain activity to translate thoughts to computer commands, making it useful for people who have physical impairments. |
| 2. | Name: Virtual Reality |
| Virtual reality technology may be improving with time, but the part in which this is difficult is the controls and reactions. It may be awkward to control your character or avatar in VR in correspondence to your actual actions. |
| 3. | Name: Complex User Interfaces |
| Some software applications have user interfaces with multiple layers, menus, and options. These features can make it hard for the user to use the application effectively and reduce productivity. |
| 4. | Name: Holographic Display |
| Holographic projection technologies that create 3D images and environments can open up difficulties in terms of user interaction due to traditional methods may not work to these immersive environments. |
| 5. | Name: Augmented Reality |
| While AR technology can enhance user experience, the integration of virtual elements with the physical world can sometimes lead to confusing and/or disorienting interactions, especially for users who are unfamiliar with the technology. |
| Source: | |

1. Choose only one technology ABOVE in easy and difficult interaction with users.
2. Provide picture and description on the functionalities and features.

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| Easy Interaction – Touchscreen   * Touch Input: The primary function of touchscreen technology is to allow users to interact directly with a display screen using their fingers or a stylus. This enables intuitive navigation, selection, and control of on-screen elements. * Multi-Touch Support: Many touchscreen devices support multi-touch input, meaning they can recognize and respond to multiple simultaneous touch points. This allows for gestures like pinch-to-zoom, rotating, and multi-finger taps, enhancing the user experience and enabling more complex interactions. * Gesture Recognition: Touchscreens can recognize various gestures beyond simple taps and swipes. These gestures can include long presses, double taps, swipes in different directions, and custom gestures defined by software developers. * Gesture recognition adds versatility and efficiency to user interactions. * Virtual Keyboards: Touchscreen devices often feature virtual keyboards that appear on-screen when text input is required. Users can type by tapping on the keys, and predictive text algorithms may assist with faster typing. Virtual keyboards are customizable and can adapt to different languages and input methods. * Handwriting Recognition: Some touchscreen devices support handwriting recognition, allowing users to write directly on the screen with a stylus or their finger. The device converts handwritten input into digital text, enabling natural and efficient note-taking, drawing, and annotation. * Pressure Sensitivity: Advanced touchscreen devices, particularly those used in digital art and design, may feature pressure-sensitive screens. These screens can detect varying levels of pressure applied by the user, enabling precise control over brush strokes, line thickness, and shading in digital artwork. |
| Difficult Interaction – Augmented Reality   * Overlaying Information: AR overlays digital information, such as text, images, videos, or 3D models, onto the user's view of the real world. This information can provide context, instructions, or additional details related to the user's surroundings. * Real-Time Interaction: AR systems allow users to interact with virtual objects or information in real-time, enabling dynamic experiences. Users can manipulate virtual objects, interact with virtual interfaces, and trigger actions based on their physical environment. * Spatial Mapping: AR devices use sensors and computer vision algorithms to create a spatial map of the user's environment. This enables accurate placement and interaction of virtual content within the physical space, ensuring seamless integration between the real world and virtual elements. * Markerless Tracking: AR systems can track the user's position and orientation without the need for external markers or tracking devices. Markerless tracking relies on features of the environment, such as distinctive landmarks or patterns, to accurately position virtual content relative to the user's viewpoint. * Surface Detection and Recognition: AR technology can detect and recognize surfaces in the user's environment, such as floors, walls, tables, and objects. This allows virtual content to be anchored to specific surfaces, enabling realistic interactions and spatial understanding. * Object Recognition: AR systems can recognize real-world objects and trigger virtual content or interactions based on their presence. Object recognition enables context-aware experiences, where digital content responds intelligently to the user's environment. |

1. Provide explanation or justification why you say that interaction is easy or difficult. Comment on the designs

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| **EASY INTERACTION** | **DIFFICULT INTERACTION** |
| Touchscreen technology offers an intuitive way of interacting with digital content by directly touching the screen to select, navigate, and interact. Devices using touchscreen technology also have a simplified interface making it easily learnable. In some special cases, accessibility features are present to cater to users with disabilities. Other technologies may be used through the accessibility features. | Augmented reality can be easy to some and difficult to others. It mostly depends on how the user perceives the technology and how the user learns to use the technology. Mixing digital content with the real world can cause confusion to users. |