Augmented Reality Vs. Virtual Reality blund

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| **Basis of differentiating** | **Augmented Reality** | **Virtual Reality** |
| Devices Used in Virtual and Augmented Reality | AR commonly also uses cell phones to display layers onto the surrounding environment on its screen. In this case, phone or tablet apps are the actual AR interface, not the phone itself. Cameras can likewise superimpose layers onto the world as the user looks through the lens. | Virtual reality is typically accessed through a headset. This way, the real world can be completely blocked out and replaced by the generated environment. The information provided by the VR device can include not just the visual display but sound, touch (a controller rumbling, for instance), and smell and taste in advanced settings. |
| Level of Immersion in Virtual and Augmented Reality | augmented reality is not a completely separate environment. Instead, it is a layer on top of the user’s physical environment, and it generally depends on the features of the real world to properly express its content. AR media often takes the form of marketing campaigns or artwork. | Virtual reality is designed to be a completely immersive system. A VR device completely blocks out the user’s physical environment and generates a virtual display. For this reason, VR is especially good for media like video games or augmented movies, where the user would want to be completely focused on the content they’re viewing, therapeutic use for treating disorders such as phobias. |
| How the Reality is Generated in Virtual and Augmented Reality | Augmented reality is often coded for phone apps, and renders reactively depending on the user’s location. It can be programmed similarly to virtual reality, but generally does not need an advanced engine to render. | Video games are often instantly rendered as the user plays, if a game engine is present, or they can be pre-rendered, in which case they are static and similar to a picture or movie. Some people also consider 360-degree videos to be virtual reality; these are completely pre-generated. |
| Occurring Live or Pre-Programmed in Virtual and Augmented Reality | Augmented reality has more potential to be reactive to the physical world than VR. Because AR is integrated into the user’s physical environment, any changes occurring live will also occur to the augmented reality layers. Augmented reality can react to the real world primarily through noting the user’s coordinates and changing its display accordingly; there’s potential for more reactions to be programmed into AR as the technology advances. | Although virtual reality can react to a user’s input during media like a video game, it does not, by definition, react to the physical environment. The VR world and the real world are separate and nonreactive, and the VR media is pre-programmed. |

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|  | the user interacts with the real world | the user does not interact with the real world. He interacts with the virtual world only. |
|  | user experiences supplementary components blended with the real world. | user is isolated from the real world and is fully immersed in the virtual word |
|  | Augmented reality systems need sensors like such as accelerometers, GPS to collect data from the real world. | virtual reality , systems such equipment are not heavily used as user is isolated from the real world. Virtual reality needs more advanced technology than augmented reality. To give a life-like feeling in a virtual world, virtual reality needs sophisticated technology. |
|  | The cost for implementing augmented reality is lesser than implementing virtual reality. Even a mobile phone has resources to implement an augmented reality | virtual reality implementation, dedicated high-cost equipment is necessary. More processing power and graphics processing is necessary for virtual reality than augmented reality. The algorithms and software for virtual reality would be larger and complex than what is used for augmented reality. |
|  | Google Glasses is a good example for a sophisticated augmented reality product. Among AR apps, IKEA, Home Depot are shopping apps. | Virtual reality gadgets include Oculus Quest VR Headset, Sony PlayStation VR |
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