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Although virtual reality and augmented reality have existed in some form for decades, only recently have they earned mainstream attention. Both of the technologies use similar computer programming, but there are several fundamental differences between them.

Virtual reality (VR) is an artificial, computer-generated simulation or recreation of a real life environment or situation. It immerses the user by making them feel like they are experiencing the simulated reality firsthand, primarily by stimulating their vision and hearing. Augmented reality (AR) is a technology that layers computer-generated enhancements atop an existing reality in order to make it more meaningful through the ability to interact with it.

In order to immerse in a virtual world a user has to wear a headset, or an HMD (Head Mounted Display), which vary from simple ones like Google Cardboard, where you just insert your smartphone in a slot and put the goggles to your eyes, to more complex like Oculus Rift and HTC Vive, which provide not only visual but also audial immersion and are powered by a PC.

By contrast, whereas virtual reality replaces your vision, augmented reality adds to it. AR devices like the Microsoft HoloLens are transparent, letting you see everything in front of you as if you are wearing a weak pair of sunglasses. The technology is designed for completely free movement. Furthermore, modern mobile computing devices like smartphones and tablets have become more popular AR platforms, as they contain all the necessary elements, like a camera, an accelerometer, a gyroscope and GPS.

As for the environment, in VR it can be entirely computer-generated, which is mostly used in modern VR games, or it can use real-life images. The latter is becoming more and more popular due to advances in omnidirectional cameras (or more commonly known as 360-degree cameras) AR, on the other hand uses a combination of computer-generated images and real-life objects. Thus, based on the image source we can conclude that VR environment is fully digital while in AR, both virtual and real-life objects are blended together seamlessly.

As a result, we can conclude that virtual reality and augmented reality accomplish two very different things in two very different ways, despite the similar designs of the devices themselves. VR replaces reality, taking you somewhere else, whereas AR adds to reality, projecting information on top of what you're already seeing. They're both powerful technologies that can completely change how we use computers in the future.