Low-Cost Methods for Generating Panoramic Views for a Mobile Virtual Heritage Application and its Application to the Heritage Zone of George Town Malaysia

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Abstract
With rapid advancement of technology, people can roam around the virtual world through the aid of the Internet. One of these advances is a photographic technique called panoramic view where the images are captured with elongated field of view using specialized software or equipments. One popular software for generating panoramic views is Apple Inc.’s QuickTime VR (QTVR). However, iphone Operating System (iOS) does not support the existing QTVR software. Therefore, a low-cost method for generating panoramic views on mobile platform is proposed. The proposed method is to store finite images in an array in order to generate a 360° panoramic view from different angles of the heritage sites. This method can be supported various platforms and can be installed in any mobile device without using intermediate software to convert the image file format. The key aspects of the iOS User Experience (UX) are also explored from the perspectives of Model-View-Control (MVC) strategies. The outcome is 360° cylindrical panoramic views that allow the user to gain a clear vision around historical monuments with standardize iOS interface design on a mobile platform using lower computational cost but with similar quality of production. The results of the evaluation have shown that the application is successfully implemented in George Town, Malaysia.