AUGUMENTED REALITY DRAGON HUNTER _ GAME

ARTHISREE S R
UG Scholar
Information Technology
Bannari Amman Institute of
Technology,
Sathyamangalam.
arthisree.it17@bitsathy.ac.in

CHARMILA C
UG Scholar
Information Technology
Bannari Amman Institute of
Technology,
Sathyamangalam.
charmila.it17@bitsathy.ac.in

HARI KRISHNA V
UG Scholar
Information Technology
Bannari Amman Institute of
Technology,
Sathyamangalam.
harikrishna.it17@bitsathy.ac.in

SABARMATHI K R
Assistant Professor
Information Technology
Bannari Amman Institute of
Technology,
Sathyamangalam.
sabarmathi @bitsathy.ac.in

ABSTRACT

Augmented Reality sets the ground for next generation of gaming. This paper investigates to automatically open camera on mobile devices which provides platform for visualizing the background environment to identify the game object on real world. First-person shooter is a video game genre centered on gun and other weapon-based combat in a first-person perspective, that is, the player experiences the action through the eyes of the protagonist. The game engine used for the project is Unity. It is the cross-platform, synthesizing type of a game engine that the designers could use to develop a 3D video game, visualize constructions and create real-time 3D animations. Unity is a game engine. This game is supported by Windows OS, Mac and iOS, Android, Xbox 360 and PS3 platforms. This game provides the player to experience the real time shooting which can be done by the help of Augmented Reality. The player in this scenario can find the position of the enemies with the help of radar which relies in user interface. The virtual object then tracks the position and orientation of the image in real-time so that the viewer's perspective on the object corresponds with the perspective on the Target.

1. BACK GROUND

In early increased reality frameworks the clients conveyed a PC as well as some type of Head-Mounted Display (HMD). MARS, Studiers tube, AR Quake, AR Pacman are instances of such early AR frameworks. MARS (Mobile Augmented Reality Systems)[12] comprise of a PC with 3D illustrations speeding up, GPS, See-through HMD, remote LAN and different parts. Studiers tube[13] is wearable expanded reality framework that makes client to communicate with the enlarged article by a pen and cushion. Client prepares PC on his back, a head protector with video yield gadget and webcam and use pen and cushion which are track optically by markers and camera. AR Quake [14] and AR Pacman [4] are instances of recreations that utilization increased reality innovation. Explicitly these are adjustments of increased reality to mainstream Quake FPS and Pacman arcade diversions, separately. Both amusement utilize wearable PCs for information preparing and require See-through HMDs to demonstrate data to the client.

2. Introduction

Today, omnipresent advancements grow quickly and are generally spread. As a result, numerous natives in created nations utilize the cell phones in which making a telephone call has turned into an auxiliary capacity. Cell phone stages, for example, iOS and Android, give not just very advanced figuring and setting detecting foundation yet in addition open markets which contain an assortment of utilizations and administrations for clients to profit by. With the commonness of cell phones, the cooperation among people and the setting through pervasive innovation has been given more consideration. One of the way to improve this cooperation is increased reality (AR) in which virtual substance is put over a genuine camera see. AR can give extra relevant data and empower progressively reasonable communication involvement with virtual substance. Right now of composing this paper, there are hundreds, if not thousands, AR applications accessible for cell phones. Numerous inquiries about have been led on expanded reality in the fields, for example, tourism[1], shopping[2], education[3] and entertainment[4]. Early AR applications required the client to convey a PC and a Head Mounted Display (HMD) yet in this think about we center around portable increased reality (versatile AR) which is empowered by handheld gadgets, for example, cell phones. Versatile AR empowers inconspicuous assembling, overseeing and using relevant data and giving AR-upgraded administrations dependent on the client's unique situation.

3. Challenges in AR Development

Past expanded reality frameworks experienced restrictions of portable innovation and IT foundation. These constraints cause the engineers and clients to encounter a few difficulties as depicted beneath. Right off the bat, utilizing extraordinary AR equipment, for example, HMD has a few issues. HMD upset the perspective on vision and may make burden the client. Also, if HMD has low goals, it makes troubles perceive enlarged item and bending of the sight that vary from genuine world. Besides, exceptional equipment is less available than normal gadget, for example, cell phone. The most recent case of extraordinary equipment for AR is Google Glass, which is wearable PC with an optical head mounted presentation. In spite of the fact that its innovation is refined and structure subtle, Google Glass is as of now excessively costly to typical clients. Another issue of Google Glass is that the present form can't be utilized by individuals who wear normal glasses. Besides, executing enlarged reality and building portable figuring interfaces require much time and exertion from the engineers. Previously, memory and information handling abilities of cell phones were essentially lower than today. As appeared in AR Phone framework, high information handling assignments can be appointed to an outer server which performs essential calculations. This issue expects designers to fabricate a foundation for outside information preparing and around a land region by the Caloroids. There is a worldwide time limit for finding the bombs so the player must move between various bombs one.

4. INTERFACE DESIGN

Unity is a cross-platform game engine developed by Unity Technologies. It gives users the ability to create games in both 2D and 3D. Over 91% of Hololens experiences are made with unity. Unity's highly optimized rendering pipeline and the rapid iteration capabilities of our Editor to make your XR creative vision a reality. Unity's industry-leading developer experience combined with tools purpose-built for AR creators and our unified workflow across AR devices means you can push the bounds of your imagination. We have the custom resources to bring your immersive vision to life.

Vuforia is an augmented reality software development kit (SDK) for mobile devices that enables the creation of augmented reality applications. It uses computer vision technology to recognize and track planar images (Image Targets) and simple 3D objects, such as boxes, in real time. This image registration capability enables developers to position and orient virtual objects, such as 3D models and other media, in relation to real world images when they are viewed through the camera of a mobile device. The virtual object then tracks the position and orientation of the image in real-time so that the viewer's perspective on the object corresponds with the perspective on the Image Target.

5. Deploying Games to Mobile Devices

Since this project is developing these games for mobile devices there are downloadable files required to deploy the games. The SDK's for Android needs to be downloaded, Xcode for Apple devices, and the Windows SDK for Windows 8 devices. As for Windows, Linux and Mac there is nothing more needed to add, Unity does all the required compiling for these platforms. 5.1 Deployment to Android Devices for Android the Android SDK is needed. The most current one can be found by doing a Google search. Once the SDK download is complete the Update Manager should be opened and any packages that are out of date should be updated. Once all updates are finished the path to the SDK should be added to Unity's build properties. Select Edit > Preferences.
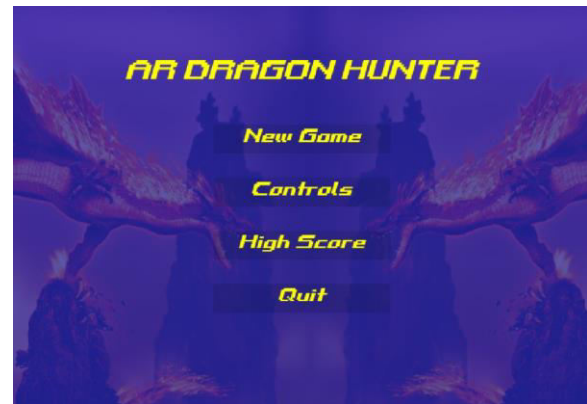
6. GAMING INTERFACE

Fig 1.1

This game include 4 options such as (fig 1.1) i. New Game ii. Controls iii. High Score iv. Quit. In this High Score is stored in database. These interfaces are displayed using labels. A certain number of lables can be placed inside a canvas.

FIG 1.2

In this the movement of game objects and other actions are done with the help of c# scripts. The dragon (game object) which is in the fig1.2 is instantiated again and again when it is shooted.The radar which is in left bottom corner can be used to identify the dragon.

7. CONCLUSION

This game may play a major role in the future development of augmented reality. The main advantages of this game are it can be played in any version of android mobiles and ios with gyroscopic sensor, it will provide real time shooting shooting environment.

8. REFERENCE

[1] M. T. Linaza, D. Marimón, P. Carrasco, R. Álvarez, J. Montesa, S. R. Aguilar, and G. Diez, "Evaluation of mobile augmented reality applications for tourism destinations," In Proceedings of the International Conference on Information and Communication Technologies in Tourism, Helsingborg, Sweden, 2012, pp. 260-271.

[2] W. Zhu, C.B. Owen, H. Li, and J-H. Lee, "Design of the PromoPad: an automated augmented reality shopping assistant," In Proceedings of the 12th Americas Conference on Information Systems, Acapulco, Mexico, 2006.

[3] H. Kaufmann and D. Schmalstieg, "Mathematics and geometry education with collaborative augmented reality," Computers & Graphics, Vol. 27, no. 3, 2003, pp. 339-345.

[4] A. D. Cheok, K. H. Goh, W. Liu, F. Farbiz, S. W. Fong, S. L. Teo, Y. Li, and X. Yang, "Human Pacman: a mobile, wide-area entertainment System based on physical, social and ubiquitous computing," Personal and Ubiquitous Computing, Vol. 8, no. 2, 2004, pp. 71-81.

[5] Department of Health, "White Paper - Saving Lives: Our Healthier Nation," UK Government, 1999, Available at: http://goo.gl/QWO5Tq (Accessed 20 August, 2013).

[6] J-Y. Kim, B-K. Choe, J-M. Choi, C-G. Lee, J-S. Moon, E-K. Jeong, Y-T. Kim, J-H. Choi, K-S. Choi, and J-H. Lee, "Prevalence of childhood and adolescent obesity in Korea," In Proceedings of the 134th Annual Meeting & Exposition of APHA, Boston, MA, 2006.

[7] R. M. McLean, J. A. Hoek, S. Buckley, B. Croxson, J. Cumming, T. Ehau, A. F. Tanuvasa, M. Johnston, J. Mann, and G. Schofield, "Healthy Eating – Healthy Action": evaluating New Zealand's obesity prevention strategy. BMC Public Health, Vol. 9, no. 452, 2009.

[8] World Health Organization, Obesity and overweight – Fact sheet no 311, May 2012. Available at: http://goo.gl/LXPEqf (Accessed 20 August, 2013).

[9] R. W. Lindeman, G. Lee, L. Beattie, H. Gamper, R. Pathinarupothi, and
A. Akhilesh, "GeoBoids: A mobile AR application for exergaming", In
Proceedings of International Symposium on Mixed and Augmented
Reality, 2012, pp. 93-94.

[10] I. Hamilton, G. Imperatore, M. Dunlop, D. Rowe, and A. Hewitt, "Walk2Build: a GPS game for mobile exergaming with city visualization," MobileHCI '12 Proceedings of the 14th international conference on Human-computer interaction with mobile devices and Services companion, 2012, pp. 17-22.

[11] D. R. Marins, M. de O. D. Justo, G. B. Xexeo, B. de A. M. Chaves, and
C. D'Ipolitto, "SmartRabbit: A mobile exergame using geolocation," SBGAMES '11 Proceedings of the 2011 Brazilian Symposium on Games and Digital Entertainment, 2011, pp. 232-240.

[12] T. Höllerer, S. Feiner, T. Terauchi, G. Rashid, and D. Hallaway, "Exploring MARS: Developing indoor and outdoor user interfaces to a mobile augmented reality system", IEEE Computers Graphics and Applications, Vol. 23, No. 6, 1999, pp.779-785.

[13] D. Schmalstieg, A. Fuhrmann, and G. Hesina, "Bridging multiple user
Interface dimensions with augmented reality," IEEE and ACM International Symposium on Augmented Reality 2000, 2000, pp. 20-29.

[14] W. Piekarski and B. Thomas, "ARQuake: the outdoor augmented reality gaming system," Communication of the ACM Vol. 45, no. 1, 2002, pp. 36-38.

[15] M. Assad, D.J. Carmichael, D. Cutting, A. Hudson, "A demonstration of
Mobile augmented reality," In OzCHI Demo Section, 2003.

[16] M.T. Linaza, D. Marimón, P. Carrasco, R. Álvarez, J. Montesa, S.R.
Aguilar, and G. Diez, "Evaluation of mobile augmented reality Applications for tourism destinations," In Proceedings of the International Conference on Information and Communication Technologies in Tourism, Helsingborg, Sweden, 2012, pp. 260-271

[17] Unity3D, What is Unity? Available at: http://goo.gl/n3YtYX, (Accessed 2 October, 2013).

[18] Vuforia Developer, Getting Started with the Unity Extension, Available at: http://goo.gl/u0DUW6, (Accessed 2 October, 2013).