**Developing a Videogame using Unreal Engine based on a Four Stages Methodology**

***Abstract*: The goal of this project is to develop a AA game using the Unreal Engine based on an agile methodology, which is economic, sustainable and practical. This methodology has four stages that are: preproduction, production, testing and postproduction & deployment. In conclusion, we achieve to prove the applicability of the four stages methodology to make a high-quality game in a short period of time, using limited resources.**

**I. Introduction**

Nowadays, a lot of people (of all ages) play video games, most importantly first-person shooters... but these genres, due to a lack of puzzle elements, do not test the brain so much. Earlier, video games were designed to challenge the human brain and get a relaxation feeling at the same time. Epic Games have long released the Unreal Engine for developers to create their own First-Person Shooter Games using realistic rendering and implementing environments using Blueprints and/or C++. Hence, we propose forward a first-person shooter puzzle game genre made using Unreal Engine in which the user (player) has a gun that fires 2 kinds of bullets (red ammo and blue ammo). Red ammunition increases the size of the object it is fired at by a specified amount. Blue ammunition does the exact opposite. In each map, there will be a riddle hung on the wall which will have a numeric answer. There are also pressure sensitive plates scattered around the play area with some boxes lying around. Each box will have a specified weight. To open the locked door and progress further, the user has to solve the riddle and properly place the boxes on the plates (increasing/decreasing the weight of boxes if required). In doing so, the player both gets a challenge and an exhilarating experience of an FPS.

**II. The Four-stage Methodology**

**Pre-Production:** In the initial stage, we gathered a feedback from gamers regarding the on-going trends in AAA games and the collective users of First-Person Shooters (FPS), Third-Person open-world games, racing games and Role-playing games. We concluded that the number of users of FPS games outweigh the ones of other genres. Consequently, we decided to create a free to play an FPS story-driven puzzle game.

A record of the platforms under utilization was made; the game being developed parallelly on a desktop and an Ultrabook to keep a check on deployment parameters. The software that are being primarily used are the Unreal Engine 4, Visual Studio 2017 Community Edition and Autodesk Maya.

**Production**: In the early stages of production, we have rendered environments that are aesthetically pleasing to the user. The character being customized by C++. The possibility of including BOTS is under consideration. The production is being focused such that at no point in the game shall there be pointless violence.

**Testing:** Once the production is complete, the package shall be distributed to several users for reviews, error-management and bug-reporting. The game shall be accordingly updated before final distribution.

**Post-Production & Deployment:** On completion, the game shall be possibly hosted on a server for users play multi-player. If the production receives positive reviews, the game, or the next iteration of it shall be deployed on Epic Games Launcher for a global Distribution.

**III. CONCLUSION**

Our project has been chosen to target the Entertainment Industry. A sincere attempt to develop a Video-Game without having to spend millions of dollars and use marketing strategies is being made. Based on reviews and surveys, we plan to focus it to fascinate audience of both genders and a wider age-group.