VR DEVOPS GAME

DESIGN MANUAL

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Introduction

The purpose of this project is to create a virtual reality game that can teach students about DevOps. To play the game a player first has to create an account in Engage and log in. They will enter their name, password and whether they are a developer or in operations. Once a player is logged in, they can choose to start a new game, join a game, or fill in a survey to give feedback on the game.

If a player chooses to start a new game, they will receive a 6-digit code for the game which other players must enter in order to join the game. Once all the players are in the lobby they are split into 2 teams: Developers and Operations. Operations is then sub-divided into Pre-production and Production.

The game consists of 4 sprints for each team, with a maximum time limit of 3 minutes per sprint. During the first sprint, the developer team must build a tower using blocks. The dev team then have to deploy the tower to pre-production within their 3 minutes. The ops team must refuse any non-documented tower from this sprint. When it is the operations teams turn for the sprint, they have to rebuild the dev teams tower in production.

For the second sprint, the teams cannot communicate with each other. The dev team just have to document their tower delivery like the first sprint but with no new objectives. The operations team have to start with a T-shaped base though, meaning a horizontal block balancing on a vertical one. This will make the dev tower almost impossible to reproduce, showing the importance of communication between teams.

For the third sprint, the teams can see each other's towers and communicate with each other. The dev team take back the last tower and rebuild it with any new features and the ops team have to rebuild that tower in pre-production and production.

The final sprint runs very similar to the third. It gives the teams a chance to continue communicating and speed up their delivery time. Each team is then awarded points based on objectives given by the client. The goal of the game is to get as many points as possible.

Technologies

Engage

Engage is an education and corporate training platform in virtual reality created by Immersive VR. It empowers educators and companies to host meetings, presentations, classes, and events with people across the world. Using the platform, virtual reality training and experiences can be created in minutes. The tools are very easy to use and require no technical expertise. You can choose to host your virtual reality sessions live, or record and save them for others to experience later. A wide variety of effective and immersive virtual experiences can be created with an extensive library of virtual objects, effects, and virtual locations available on the platform. By using the Engage platform we will have VR implementation for the project.

Unity

Unity is a cross-platform game engine developed by Unity Technologies, first announced and released in June 2005 at Apple Inc.'s Worldwide Developers Conference as a Mac OS X-exclusive game engine. As of 2018, the engine had been extended to support more than 25 platforms. The engine can be used to create three-dimensional, two-dimensional, virtual reality, and augmented reality games, as well as simulations and other experiences. The engine has been adopted by industries outside video gaming, such as film, architecture, engineering, and construction. Several major versions of Unity have been released since its launch. The latest stable version, 2020.1.17, was released in December 2020. Engage VR allows for projects developed in Unity version 2019.2.21f1 to be imported into Engage with approval from senior developers from the Immersive team. As a result, I will be using this version of Unity.

Appendix

Plagiarism Declaration

Projects & Plagiarism

All projects are individual projects. The project is expected to be all your own work. Under certain circumstances, you may be able to incorporate material from other sources. This "incorporation" needs to be discussed with, and agreed upon by, lab supervisor and all such material must be referenced appropriately.

- Plagiarism is defined as " ... *presenting someone else's work as if it were your own, whether you mean to or not. 'Someone else's work' means anything that is not your own idea, even if it is presented in your own style. It includes material from books, journals or any other printed source, the work of other students or staff, information from the Internet, software programs and other electronic material, designs and ideas. It also includes the organization or structuring of any such material ...* " [taken from: Victoria University of Wellington, New Zealand, http://www.victoria.ac.nz/home/glossary.aspx#p].
- What this means is that it is wrong to copy another's work or download material for incorporation into your project from the Internet (without the express permission of your supervisor). Even if you take someone else's algorithm/code and rewrite it, this must be documented in your program to state where you got the original algorithm from. Failure to do so is considered plagiarism. If you are in any doubt, always ask your lab supervisor.
- Plagiarism is a ***serious academic offence*** (equivalent to cheating on an exam) and the consequences of being found guilty of plagiarism are severe.
- Students can use the internet to research information on their projects, they can ask lab supervisors for help with their project and they can also discuss problems with their fellow class mates.
- Students should be able to explain fully their code and may be asked to do so by one of your lab supervisors.

Work submitted for assessment which does not include this declaration will not be assessed.

DECLARATION

*I declare that all material in this submission e.g. thesis/essay/project/assignment is entirely my/our own work except where duly acknowledged.

*I have cited the sources of all quotations, paraphrases, summaries of information, tables, diagrams or other material; including software and other electronic media in which intellectual property rights may reside.

*I have provided a complete bibliography of all works and sources used in the preparation of this submission.

*I understand that failure to comply with the Institute's regulations governing plagiarism constitutes a serious offence.

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Date: 12/11/20

Please note:
The Institute regulations on plagiarism are set out in Section 10 of Examination and Assessment Regulations published each year in the Student Handbook.