***Henry Crofts – Postmortem – S183848***

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| **STUDENT NAME** | Henry Crofts |
| **PROJECT NAME** | The R34 Adventure |
| What do you think went well on the project? | The team had worked on a project for Emerging Technologies during their second year working towards making an application that would be shown at the Centenary of the R34, testing the use of Augmented Reality (AR) and Virtual Reality (VR) separately. As we finished the second year we approached the tutors and asked if we could take this project to Basil Abbott, who runs the museum in Diss and liaison with him to create the application for the event for our Design Masterclass module.  This gave the team a strong start towards the module having a prior understanding of the technologies we were going to use. The team then proceeded to set up a meeting with Basil to discuss the production of the application where he decided the application would be best using AR.  The team communicated very well internally, with Tom and myself also working on the Group Project module together communication was always happening, with the team constantly keeping each other aware of their availability and how they were getting along with their tasks, this helped with the development of the application as each member knew what tasks were completed, what needed completing and what was blocking another task. Because the communication between the team internally was very good, team members were able to help each other with any tasks that they were unable to complete due to time or knowledge restrictions.  Team help numerous meetings with all members present in a promptly manner, with only a few meetings where a member was unable to attend with the team being made aware as soon as possible. Alongside the meetings the team was able to hold multiple studio-jam sessions which greatly improved the team’s efficiency with completing tasks and helping each other out.  The team were asked by the lecturers to create a project timeline with estimated milestones, the team worked together to create this and fully understood when components needed to be completed, this helped with keeping the team on track for completing the application within the desired timeframe (minus the finalized assets).  The team kept in constant communication with Basil regarding the application, updating him as often as possible with any new developments. We would also contact Basil if there were any parts of the application we were unsure about regarding historical accuracy or how Basil envisions the application will look.  Basil contacted the local newspaper in Diss regarding the application which led to a member of the news team contacting Tom and from the article a local 3D modeling hobbyist contacted me asking if he would be able to assist with the creation of the application, this was very helpful for the team as we are not modelers we would not have been able to accurately recreate the models we would need. The team quickly arranged a meeting with the modeler called Peter Paterson, where we negotiated the required models and specifications required for the application and he was happy to help, I then kept up constant communication with Peter to receive updates on his models and import them into the application when they were completed.  The team were able to complete a good amount of playtesting to test the functionality of the application and to help find any bugs that can be found within the application. |
| What do you think needed improvement on the project? | The team ran into a lot of problems with Version Control throughout the project as the team were using both Unity Collab and GitHub simultaneously for a long time, this caused many different merge conflicts throughout the project resulting in members losing their working, mainly Tom and myself. Eventually we decided to scrap Unity’s collaboration software and continue using GitHub, this still resulted in the team having version control issues, this was later resolved once I had read up on Unity and GitHub version control and found that the problem was most probably being caused by the Library folder, which is created each time the project is opened caused GitHub to keep an older version. Once this was deleted the issue with version control dropped drastically, however we did still have a few issues with it when working in the same scene this was avoidable if team kept communicating and updating the rest of the members on their progress and when they are about to push their version to GitHub.  Due to the issue of multiple version control conflicts a lot of work had to be deleted, resulting in team members having to redo their previously completed work again while working to complete the next sprints tasks simultaneously. Due to team members not wanting to continue to lose work, production on the application slowed down as only one person was to work on the application at any one time to reduce the risk of lost work.  Although team communication was very good, and we had regular meetings and studio-jams unfortunately some had to be cancelled or rescheduled, this left work being pushed back and being completed later in the sprint than desired or individually.  While the team was able to get play testers to test the functionality of the application and help with the location of any bugs present within the application, we were unable to playtest with the intended demographic due to their age limit and protection laws in place. |
| What do you think of your own contribution to the project? | I believe that I contributed well to the overall completion of the R34 project for the Diss museum, I have learnt a lot more about Vuforia, Unity (animations, sound and user interface) and the history of the R34 Airship itself. I would have liked to have been more involved with the Vuforia side of the project and tried to help where I was able, giving any advice or working with the other team members to overcome a problem, however as Elliot had more skill in this area he lead the development of the AR asking for help when needed.  Due to this I was able to work on the user interface within the project working out where things would be placed and how the menus would present themselves, creating the animations for the side menu when the user would click on the menu button on the top left a panel would appear giving the user a way to navigate around the application, I was also able to implement the applications settings where the user would be able to control if there is audio or not within the application by pressing the mute button, within the settings menu users would also be able to enter a battery saver mode where on the collection screen when the user navigates to an information panel then it would show a static image rather than the 3D models with which the user can interact with.  Building upon my knowledge of animations I proceeded to make use of Unity3D’s timeline feature, used to animate multiple objects using a single component for the events I was tasked to create, the ‘R34 Take Off’, the ‘R34 New York Landing’ and the ‘Stowaway’. However, Elliot did not know how to start the timeline from within his script and decided to use some different animations for the NY landing instead.  I was also tasked with implementing sounds into the application, having to edit the sounds using an online audio editor to allow the sounds to loop and setting up a centralized audio player that will decide which sounds to play at specific points, when to stop playing and helps with the muting of the application if the user has decided to do so within the settings tab.  I then built upon my knowledge of Photoshop by creating the posters that will be used during the event and the triggers that will be used to recognize which event to show to the user when scanned by the application.  I believe that my external correspondence and communication was of a very good quality shown by at the start of the project I took it upon myself to head to Pulham St Mary to meet with a woman named Sheila from The Pennoyer Centre who is spearheading a different event to showcase the R34, I met with Sheila to discuss the R34 and find out as much information as possible, with Pulham being the landing site of the R34’s return journey I thought there would be a wealth of information there.  I was also present at all the meetings with Basil in Diss, working with the team to present the application in a professional manner, ensuring we answered all the client’s questions, and noting down any changes that he requests we make. I was also the point of contact for our external 3D modeler Peter Paterson who reached out to me on Facebook, where we then created a WhatsApp group with Peter and the team, which can be found on GitHub, and ensuring that he knew what we are working towards and negotiating any adjustments to his models that might be required.  Internal communication was very good too, I was also ensuring to communicate with all team members as often as possible, letting them know if I was having any problems with my tasks, availability or any other issues that might affect the group or production.  Although I believe I have learnt a lot during this module I wish I could have been a bit more involved with the Vuforia side of the project as well as the parts that I have strengthened my knowledge of. |
| **OVERVIEW** |  |
| **Thinking about the project you have worked on this year, what are the important lessons that you will take away from the experience for your next group project?** | I think that communication is absolutely crucial to the completion of any project, whether within the team or with outside sources so that everyone is up-to-date with the progress of where development is, while I believe that the communication within the team was to a very high level, I do believe that sometimes group members would have a conversation with one of the others either in person or in a personal chat, and forget to minute that discussion or send a brief synopsis to clue the other members in, I know that this has happened from me before and it could have stopped meetings from being dragged out by repeating discussions.  I also believe that written communication is of the upmost importance, as the team can go back and reference it, or to ensure all verbal communication has minutes, again, I believe that as a team we were able to keep on top of this with Tom producing very good minutes but I feel like there are some conversations that are lost.  A more dynamic group should be picked next time around, while we are a group of three capable programmers, I feel like the team would have benefited from having a designer as our knowledge of design theories (while learnt and applied) is not as broad as it could be.  I have learnt that I should be more assertive in my want to expand my knowledge of systems I do not fully understand rather than letting the other team members work on it with my input when necessary, I should have asked for more tasks involving the initialization of Vuforia.  Having someone in charge of the production allocating tasks, taking these and providing minutes is essential, this kept the team on track and up-to-date while there were some lost communications, at least 95% of the communication between team members is accessible on GitHub, either from chat logs or minutes.  Using one type of version control is important, as a team we tried to use two, believing it would be more effective, however it hindered the production more than we thought. Including the correct ignore files is also essential to ensure that no temporary and unnecessary files are uploaded to the version control causing merge conflicts. |

***Asset List***

* All posters with triggers
  + A3 and A4 created
* Scripts
  + BatterySaver
  + CameraFollow
  + Event\_Audio
  + Gondola\_Audio
  + Major\_Audio
  + VolumeController
  + AudioPlayer
* Scripts Contributed to
  + TargetScript
  + MenuScript
  + Information3dModels
* All sound files
* Animations
  + CollectionScreen
  + SideBar
  + SettingsCog
  + TakeOff
  + New York Landing
* Scrolling textbox functionality
* Engine particle effects