**Topic:**

For this project we’ll be aiming to create an educational math game for children. It will be a story-based game where the player needs to solve math puzzles in order to advance in the story. The story will be one that will appeal to our target audience of kids from roughly age 6-10 so that it will keep their attention and make them want to learn. The math puzzles would also be targeted at that age group with the ability to find help either in the app or get help from a teacher. Ideally the story would continue in sequel games and we’d be able to make it into a lasting IP. The game would have background music and narration, as well as visuals to accompany the story to help keep kids engaged.

The game would be released as an application for Andriod, iOS, Windows, and Mac so that as many people would be able to access it as possible. We’d be aiming to receive an education grant so that we could continue work on the game until we’re ready to release and sell the game. We would sell the game in packages to schools so they could receive as many copies as they need, and we’d also be selling it individually. With the release of this game teachers and parents would have a tool to make children want to learn more about maths.

**Motivation:**

With the quarantine in effect more and more parents are finding themselves with their kids attending online school, and it can be difficult to get them to sit down and study without them immediately getting on YouTube or a video game. The idea behind this project is that we want kids to have fun while they’re learning, so that they stay interested and want to learn. Parents and teachers will have much less to worry about if they know the children are interested in learning and it will hopefully make their jobs easier. This project would show future employers that we know how to work as a team, how work on video games, we can use a variety of tools and tech, and we know how to plan a project.

Not sure what to write about how it fits in with current IT trends yet.

(Deb- Edugaming and learning through playing online games is according to StuDocuBlog ‘the latest trend in the educational world and is making one monumental comeback. Game-based learning is education packaged within a neat game. It’s a specially designed game that educates the player within a storyline and interactive content.’(StuDocublog 13/02/2020)

Reference : Reviewed 24th of may 2020, *5 online learning trends that are changing the learning landscape* <<https://blog.studocu.com/en/lifestyle/5-online-learning-trends/>>

**Landscape:**

There are a variety of other educational games online including ones focused on maths, but none of them focus on a story as a way to teach. Most of these games are hosted on websites full of other games which means it’s difficult to make sure children are only playing educational games. They’re also designed to be repeatable, a lot of them being games where if you get too many questions wrong you lose and start again, which can get boring very quickly. Our game would be designed to tell a great story and teach kids math along the way.

**Aims:**

The aim of our project is to create a story-based educational game than will keep children interested and make them want to keep learning. Most educational games are repetitive and become boring after a short time, our goal is to make our game appealing to kids so that they want to keep playing, and by playing more they’ll be learning. Since they will want to be learning they won’t go off task, so parents and teachers won’t have it so hard when trying to keep their kids focused.

First we will need to decide on a story for the game, as our way to keep kids interested in playing our game is to have a story that would make them want to continue. We’ll need to get together and brainstorm the whole story, then we will have someone write up a rough draft so we can work out anything that might be wrong with the story or might not appeal to kids enough. After we’ve sorted out any problems the whole story will need to be written.

Second will be choosing the style of game and the gameplay, even with a great story if the core gameplay isn’t fun there isn’t much that separates our project from a visual novel. We’ll need to decide on a way to make gameplay both fun and educational while also keeping with the general theme of the story. We’ll need to create a prototype of the game so that we can test for any bugs that pop up, and then decide if we like the gameplay or want to change it to something else.

Third we will need to work on the animations and art we want to put into the game, the story would become boring quickly without some artwork to go along with it. This will be heavily based off of the story, at a basic level we could include drawings of scenes during the story but if we have enough time, we could include cutscenes for important parts of the story. The artwork isn’t too hard to come up with as a lot of the scenes will already be described in the story, but we’ll need to make sure the character artwork looks interesting to keep kids engaged.

Next we would need to find and decide on what variety of math problems we would put into the game, we’ll need to research what kids from age 6-10 are learning in school and create different sets of problems to implement into the gameplay. With different sets of math problems, we could create different levels of difficulty so that our game could be useful for students at different levels of learning. It’s important that we research well so that we don’t make the game too easy or too hard, so students will be challenged enough that they’re learning, but not so much that they want to quit.

With the main core of the game in the works now we would need to start work on music and possibly voice acting. A simple background track would add a lot to the gameplay and story, we’d need to decide what types of music we want at certain points of the story and then either create it ourselves or find some music online that is royalty free or we like enough to buy it. If we have enough time and resources, we could look into voice acting for each character or maybe just a narrator.

At this point we’d have a working prototype which we could put together and test it for bugs, and then we could get kids to try it out. We’d need to find a way to have some kids try the game so that we know what we’re doing right and what we’re doing wrong. We would try to organise a children’s focus group to get them to test the game, doing so would give us the feedback we need and potentially find more problems with the game that we didn’t think about or notice prior.

After the testing we’d be moving into the final stages of the project, the game would need to be finalised, all the other goals would need to be complete and any problems that occurred during development would need to be fixed. Now we would need to make sure the game will work on platforms other than windows, such as iOS, Android, and Mac so that we could launch the game on as many devices as possible.

**Plans and Progress:**

**Roles:**

For our project there will be many roles needed to be filled, but with our limited team size we’ll need to be juggling what we’re doing quite a bit. Some people may be taking on multiple roles while others focus solely on one thing if they have experience in that area. It’s likely that we’ll need to outsource some of our work too, as there are some skills that we need but don’t have on the team. Most games in development have lead developers but our small group will be working very closely and consulting each other on our choices.

Writer – We need someone to write the story for our game, this could be done with input from the other members of the team.

Programmer – We’ll need a programmer to code the game, multiple people could work on the code along with input and testing from the team.

Artist – We’ll need an artist to draw any scenes we want to show in the game, this is a role that could be outsourced if we can’t get it done within the group.

Sound engineer – This person would be responsible for the music and sounds put into the game, they would need to design the sounds themselves or buy them online.

**Scope & Limits:**

Within the scope of this project we expect to deliver an early alpha build of our game. Most of the features will be included, a level or two of the game, the base of the story, some drawings of the story, and some basic background music. However, we don’t believe we can deliver a fully polished and tested game in time. With the time limit we’ll need to leave out some features that we would have liked to include. Voice acting and cutscenes will likely be left out of the game as we simply don’t have enough time to put them in. We will also need to skip the children’s focus group test, as it’s around the point we’re delivering that we would like to start testing.

**Tools & Technologies:**

Github – We’ll be using Github to share our files, we’ve all used Github before and are familiar with how it works.

Microsoft Teams – This will be our primary method of communication, we’ve all used teams before and are familiar with how it works. Teams requires access to Microsoft Office.

Microsoft Word – We’ll be using word to write our story, we’ve all used word before. Word requires access to Microsoft Office.

Unity – We’d be using Unity to create the game, which only requires a licence if our product makes over $100,000 a year.

**Testing:**

While creating the game we’ll constantly be testing it to make sure there are no bugs and that everything is working smoothly. Early on in the build we can have close friends/family help us test the game if they want to, to get an outside perspective. When we’re at a point where we feel the core of the game is ready, we’ll organise a children’s focus group consisting of children aged 6-10 so that we can get the people the game is made for to try it and see if they enjoy it. We could create this group by advertising that we’re making a game and are willing to pay if parents will let their kids try it out for an hour or so, we’d ideally get about 6 kids to help us test the game. Based on the feedback from that we’ll learn what children in that age bracket enjoy or dislike about our game.

**Timeframe:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Week** | **Caden** | **Debborah** | **Niki** | **Sam** |
| **1** | Short break after last assignment. | Short break after last assignment. | Short break after last assignment. | Short break after last assignment. |
| **2** | Spent a week waiting for a team member who left the course. | Spent a week waiting for a team member who left the course. | Spent a week waiting for a team member who left the course. | Spent a week waiting for a team member who left the course. |
| **3** | Decided on project idea and set roles. | Decided on project idea and set roles. | Decided on project idea and set roles. Wrote storyboard for presentation. | Decided on project idea and set roles. |
| **4** | Started working on presentation, wrote career plan. | Started skills and jobs section of the report, wrote career plan. | Wrote career plan and the reflection on the career plans. | Wrote career plan. |
| **5** | Working on presentation. | Finished the skills and jobs section of report. | Started on website design and artefacts. | Began work on project plan. |
| **6** | Finished presentation. | Helped finish project plan. | Finished website and artefacts to deliver. | Finished project plan. |
| **7** | Working on game design. | Researching math problems for different grades. | Working on game design. | Started writing the story. |
| **8** | Started coding the game. | Started finding art style for the game. | Started coding the game. | Finished the story. |
| **9** | Coding and testing the game. | Deciding which scenes from the story should be drawn. | Coding and testing the game. | Deciding which scenes from the story should be drawn. |
| **10** | Coding and testing the game. | Finding/drawing animations for the game characters. | Coding and testing the game. | Finding/creating sound effects for the game. |
| **11** | Finished an early alpha build of the game then started testing. | Helped implement art into alpha build of the game and started testing. | Finished an early alpha build of the game then started testing. | Helped implement music into alpha build of the game and started testing. |
| **12** | Testing the game and bug fixing. | Testing the game. | Testing the game and bug fixing. Compiled our thoughts and feedback from the alpha build. | Testing the game. |
| **13** | Changing/adding onto the game based on testing feedback. | Finding/drawing pictures to use in the game. | Changing/adding onto the game based on testing feedback. | Finding music to use in the game. |
| **14** | Adding more levels into the game. | Helped add more background art into the game. | Polishing the first few levels as much as possible. | Helped add background music into the game. |
| **15** | Last minute beta testing and bug fixing before delivery. | Last minute beta testing before delivery. | Last minute beta testin and bug fixing before delivery. | Last minute beta testing before delivery. |

**Risks:**

A major risk for our project is that we might not be able to assemble a focus group to help us test our game. Our game is focused towards young children which means it can be hard to decide whether they’ll like the game or not without proper testing. While we have some experience programming there is always the risk that it will be tougher to figure out an aspect of the coding language than we imagined, which could lead to big delays with game development.

**Group processes and communications:**

Our group communicates using Microsoft Teams, we use text chat almost daily as well as holding a group meeting in voice chat once a week. We have each other’s email addresses so we can email them directly in case anything goes wrong. Early in the project we had a group member who was previously very active go silent on us, we lost a week waiting for him and it turned out he left the course. In the future if a team member stops responding we’ll be sure to send an email quicker or try to work around the absence in other ways until they’re back.