ASSIGNMENT 1

COSC2625 BUILDING IT SYSTEMS 2018

KING KONG AND FRIENDS 2.0

KURIOUS KINGKONG

12.08.2018

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MEET OUR TEAM

"King Kong and Friends is made up of RMIT students with diverse culture, characters and personalities, which can maximise our outputs with creativity and various perspectives. We have teamed up together to translate dreams into reality.

Kyongsub Kong
Leader
/ Programmer
s3634359

Email to:
s3634359@student.rmit
.edu.au

Kyongsub Kong is from Seoul, South Korea. He came to Melbourne in 2017 to study Information Technology at RMIT. He has an experience working as a computer maintenance in Korea.

Kyong is a well-organised member and good at managing the whole process of a project. Moreover, not only can Kyong lead the whole project, but also he can care about the details.

English is a big weaker point for Kyong because it is his second language. Also, Kyong has problems with design work such as layout, colouring and drawing.

As a leader of KingKong and Friends 2.0, Kyong is expected to derive members' strengths and potential, as well as bring members together.

Ming Jie Guan
UI Designer
s3723009

Email to:
s3723009@student.rmit
.edu.au

Ming Guan was born in Putian, China however moved to Melbourne when he was 11 months old. He has been interested in IT ever since his parents bought a computer when he was young.

Ming can complete set work when he is given it and on time. He enjoys designing things such as websites and programs.

Ming's weakest area is in programming which he finds a bit confusing however he hopes his group members can support him in this area.

Ming hopes to design the interface of the project and support others while doing so.

Ty Ty Chau
Programmer
/ Graphic Designer
s3668469

Email to:
s3668469@student.rmit
.edu.au

Ty Ty Chau was born in Vietnam, and arrived to Melbourne in 2010. He interested in the Information Technology field because he finds coding and design as well as develop a program or specifically, a game is very interesting.

Ty self-taught some of the language himself back in high school. He is capable of design a webpage using a combination of PHP, HTML and CSS. He is also familiar with Java and Java Scripts.

Ty's weak point is motivation and time management and is a need to work on it as for this project, time management is a need to make the project a success.

The role of Ty is expecting to perform in is the game design and development progress.

Matthew McCarthy
Graphic Designer
s3718180

Email to:
s3718180@student.rmit
.edu.au

Matthew was born in Australia and has lived in Victoria his whole life. He is interested in the IT field as at a young age he was exposed to some minor aspects in relation to the IT field and has since been interested.

Matthew is good at getting work done before the due date, and has also done some minor work with HTML/CSS previously. He is also able to assist in any graphical design.

Matthew's weakest point would be motivation and programming. Although he can do a bit of programming he is not the most confident in doing so.

Matthew hopes to be able to help out with the interface and design while also assisting others in doing all of their work.

Huanghao Li
Programmer
/ Video Maker
s3669467

Email to:
s3669467@student.rmit.
edu.au

Huanghao Li is from WuHan, China. He arrived in Melbourne in 2017 and studied information technology. Although he is a newcomer in the field of information technology, his enthusiasm for information technology is strong because he believes this will be the main trend in the future.

Huanghao is good at logical reasoning and writing. He has a high interest in website design and hopes to use network design as the main development direction.

English as a second language takes more time to improve, and at the same time, it requires more practice for the use of various tools. There are many things that newcomers need to learn.

Huanghao wants to play a role in designing the interface and doing what he is best at in the summary and writing part.

PROJECT DESCRIPTION

1. **Project Name**

   Kurious Kong

2. **Contain enough details so that anyone with reasonable technical capability can unambiguously visualise the proposed product.**

   Our project goal is to develop an education app for young children. The product's goal is to make the learning process more interesting for them. We intend on developing a game that contains a few mini-games, each has its own topic and it uses education as a means of progression. Once the player has cultivated enough points through completing challenges and quizzes within the mini-games, they can spend those points for cosmetics items. As stated, the main goal is to help kids to understand the topics better and that they could apply the knowledge in their class and hope to become the best within their class, maybe even school.

3. **Identify the type of project/stream this is: for example, a 2D Platformer, a Visual Novel or something else.**

   The game type is 2D platformer

4. **Contain a detailed description of the functionality of the product (that is, what the product will do), and enough information to give the assessor a "good feel" of the expected product experience.**

   We aim to successfully develop a product that bring children knowledge as well as entertainment. The application will have three and maybe four categories (yet to be completely decided) upon launching the app. Each category is labelled with the topic of its own, there are two maths related and one to two literacy related. For maths, it will have "Addition" and "Multiplication" and for literacy, "Spelling" and perhaps Picture to Speech (yet to plan this one out).

   The game itself will have difficulties, these can be unlocked once the player reaches a certain level. Levels can be increase by completing questions. For an example, if you complete 10 questions without any mistakes, you gain some experience, and once you

have earned the required experience to level up then you'll be able to do harder questions.

If everything goes well, the team is planning to extend the functionality of the app. What we meant by extending is that to add more function to it, the ones we have come up so far are login system, whereas the user can register and login, they can save their progress this way and no need to start all over again on a new device. Some type of in game currency that the player obtained upon completing weekly challenges and if we have online mode, where players can challenge each other, the winner will gain some of the currency as well. The currency then can be used to purchase cosmetic items. To ensure we have enough funding to keep the game going, there will be some kind of premium currency, those can be obtained through microtransaction, it can then be used to buy exclusive cosmetics items. Another is that maybe some kind of energy bar system, to prevent kids gets too addicted to the game, not that they would but as a safety measure, for an example there will be 5 energies, each time the player starts a challenge and fail, then it'll consumes an energy, if the player successfully complete the challenges then the energy won't be consumed.

PROJECT MOTIVATION

Our group originally had a trouble deciding on a project idea, however after sharing common interests in developing a game rather than an application we decided to create a game. The idea of creating an educational game came from our group member Ty as he believes educating children would create a useful project idea. The group as a whole have thrown in some project ideas, but this idea was our choice in the end as we believed it would educate others with the game and educate ourselves during the development of the game.

DEMONSTRABLE OUTCOMES

Minimum Viable Features

1. **Feature**

Implementation of a point system where users are awarded points for correctly answering a question. Users' can use this feature to compete with others adding a competitive feature to the game.

Description of Validation Test

The game shows visual feedback of the points being earned by correctly which all adds up every time a question is answered correctly and the total points will be shown when its game over.

2. **Feature**

Adding a difficulty setting so that users can choose the difficulty of the game to meet their needs either to challenge themselves or to just practice.

Description of Validation Test

The game will feature the 'easy' and 'hard' difficulties which will be shown to the user when they choose which game mode they want to play, this will be implemented successfully when the game becomes easier to play and answer when on 'easy' mode and harder when on 'hard' mode.

3. **Feature**

The first game mode involves randomly generated addition and subtraction equations that users need to answer.

Description of Validation Test

On ‘easy’ difficulty the equations will always be adding and subtracting 1 digit numbers, while on the ‘hard difficulty, the game will generate harder 2 digit numbers which the users need to answer.

4. Feature

The second game mode involves multiplying randomly generated equations that users need to answer.

Description of Validation Test

On ‘easy’ difficulty the equations will involve numbers between 0-7 however on the ‘hard’ difficulty, the game will generate numbers between 0-13.

5. Feature

The third game involves finding a spelling mistake in a generated word and correcting it.

Description of Validation Test

On ‘easy’ difficulty, only words with 2-5 letters will be generated while on ‘hard’ difficulty, words with 4-8 letters will be generated.

Extended Features

1. Feature

The addition of profile customisation where avatars can be customised with clothing and hats which are purchasable with points.

Description of Validation Test

Implementation of a store section where users can buy clothing and hats with their points earned through the game, purchased items can then be equipped to the users’ avatar.

2. Feature

An account creation feature where users can create an account which they can store their account data with.

Description of Validation Test

Users are able to back-up their account data on an account protected by email and password so they can transfer data across devices.

3. Feature

A login page for users open the game prompting them to log in to retrieve saved data or continue as guest where data is erased if the game is deleted.

Description of Validation Test

The first launch of the game will prompt the user to log in or as a guest. If the user chooses either option, the login page won't be shown again.

PROJECT JUSTIFICATION (HAROLD)

a) Workload

We are a group of 5 people. This means that we have 200 hours for the whole project. Our goal is to build an education software for children. Our work is divided into game design, interface design, sound produce and programming. Kyong and Ty will be responsible for programming issues, and Ming will be responsible for the interface design part. the game design will be given to Ty and Matthew. Huanghao will be working on making sounds for the project.

Programming needs some basic draft images to be built, as well as prototypes. Therefore, for the first 3 weeks, we will spend on drawing images and prototyping. In addition to this, making sound is considered as a big issue to us, so we will spend on learning the software that we use for sound. In the middle of the project, we will work on programming together. Since we haven't programmed a whole program before, we are expected to create a simple program with basic functions and draft images by the end of the project.

We will try to complete the project in a multi-party manner within the allowed time, and we will take the form of meeting to summarise our progress outside of class. In this way, each section has enough time to do its best.

b) Beyond Current Capabilities

This time our program will be a program which is suitable for children's education. Based on the IT knowledge we have now, we are only able to implement basic programs in Java. Thus, it is expected to try to create a practical program with basic programming language by using Unity and the like. In the aspect of design, we have experienced mobile UI last semester. We are planning to improve our UI skills and make more professional prototypes. Graphic design will be very simple and cartoony. Even though we have a group member who has an ability to draw cartoon well, 8 weeks are not have enough for professional pictures. Lastly, producing sound is unfamiliar to us. However, music and sound effect are necessary in the mini games, we will make an effort to create some simple sound effects and background music.

c) Risks

1. Low team motivation

Example: Since the project does not aim to make money, every group member’s enthusiasm might wane one day.

Mitigation: To encourage us to keep working on the project. We would set up a very detailed schedule for each week, so that we don’t miss out work out and keep us on track.

2. Sound mismatch

Example: While users are playing the game, sound effect might be delayed or have some problems. This can distract users.

Mitigation: To protect users from distractions from a sound mismatch, we would offer users a mute mode for both background and effect sounds, so that they can enjoy the game without distractions until it is fixed.

3. Learning curve delays

Example: the timetable says that our project will be finalised in week 12. However, the members who are responsible for programming don't have any previous experience with Unity. the process of programming might take longer than expected

Mitigation: To avoid this issue, instead of leaving a couple of members finishing all the programming work, we need to collaborate together to solve any problems with programming. This will help us to finish the project on time.

RESOURCES & TOOLS

The tools that we are currently thinking to use are:

- Unity Personal Edition:

The version we currently have is 2018.2.2f1, it is also free to download and use, however there is a subscription for more functionalities, but we can just use the free one. The program is specialise to design and develop games, from android, iPhone, tablets to windows and mac, 2D and 3D, all sort. We also thinking to use this program to develop our game. Android Studio is another alternative that we have mentioned above.

- Microsoft Visual Studio Community 2017:

The version we currently have is 15.7.6. It is free to download, as well as upon installing Unity, VS 2017 will also be installed in the process. The program is mainly used for coding. We will be using this to write code for Unity. Brackets and Notepad++ are another alternative.

- Brackets:

The version we currently have is Release 1.13 Build 1.13.0 -1696. It is absolutely free to download and I highly recommend to use over visual studio. Brackets is source code editor. We will be using this to develop our webpage and perhaps some part of the game as well. Alternatives are Visual Studio and Notepad++.

- Krita:

The version we currently have is 4.1.1. It is free to download and use, no subscription needed as you'll get full features right from the get go. Krita is a software that specialised in graphical design and sketches. We will be using this for designing our UI, background, and characters if we have any.

- GIMP:

The version we currently have is 2.10.4. It is free to download and use. GIMP is also a graphical editor software. Which we will be using this to finalise our sketches.

- Audacity:

The version we currently have is 2.2.2. It is free to download and use. The software specialised in audio recording and editing. We will be using this for our project's sounds. Alternative is probably GarageBand on mac.

- Proto.io:

The version we have is 6.2.30. The software is a subscription type starting with $24/month. The software allows the user to create prototypes of their product. We will be using this to prototype our product on an android view.

- Adobe Photoshop:

The version we have is 19.1.16. The software is a subscription type starting with $41.40/month. It allows the user to edit photos in a more professionally ways. We will be using this to create photos for the Proto.io.

The resources are:

- Google Drive:

Our group will be using Google Drive / Doc for written information, it is free and anyone who have a Google account will be able to have access to it.

- YouTube:

YouTube is free and you can browse video as guest. It is a website to browse for all sort of videos. We use this as one of the options to make in-depth research about our project, as well as learn how to use the software we mentioned above more efficiently.

- Google:

Google is basically free to use, there is an alternation option, it is Bing. It is a search engine for any browser. We use Google to research on techniques that aren't available on YouTube.

Collaborative Workspaces

The workspaces we will use to collaborate are Trello, Google Drive, GitHub and Facebook Messenger. Everyone on our group knows how to access all of these websites however as a group we are all more comfortable using Google Drive rather than GitHub.

We already have a Trello board, GitHub repo and Google Drive that we are all able to access.

Communication Expectations

For communication, we have already set up a group chat on Facebook that we all use to communicate with each other when we are not in person. We expect everyone in the group to be able to respond to these messages in a suitable amount of time (within 24 hours unless it has been mentioned beforehand that someone will not be able to reply within the time), and if that expectation has not been met we will seek out that person individually by other means, such as directly messaging the person on Facebook or emailing their student email directly.

If needed at any point we should be able to meet up in person at the city, whether it be for lunch or just to work together if someone needs help in person. Our plan is to gather together once a week on week day in the RMIT library.

Decision-making Process

As a group it doesn't seem like we'll be having many conflicting ideas, but if the time comes where there are conflicts, then the easiest solution would be to have a vote (which should work easily since we have an odd number of members) but if there comes a time where all 5 of us have different ideas, we're going to roll a 5-sided die.

For decisions that we have already made, we simply discussed with each other what we want to do.

PROJECT TIMETABLE

	Title	Start	Due	Hours	Lead by
Week 3	Personal profile	5/8	7/8	15	ALL
	Project name	31/7	7/8	10	ALL
Week 4	Decision making	7/8	10/8	2	Matthew
	Communication expectations	7/8	10/8	2	Matthew
	Collaborative workspaces	7/8	10/8	1	Matthew
	Resources and tools	7/8	10/8	4	Ty
	Project description	7/8	10/8	1	Ty
	Demonstrable outcomes	7/8	10/8	3	Ming
	Motivation	7/8	10/8	2	Ming
	Project justification	7/8	10/8	5	Huanghao
	Project timetable	7/8	10/8	3	Kyong
	Report	7/8	11/8	2	Kyong
Week 5	Low-Fidelity Paper Prototype for App	13/8	19/8	10	Matt / Ming
	Paper Draft of Game Background and Characters	13/8	19/8	10	Ty / Kyong
	Searching Educational Referable Game Ideas	13/8	19/8	5	Harold
Week 6	Improve Paper Prototype (Adding colour / functions)	20/8	26/8	10	Kyong / Ming
	Draw Background with Krita and GIMP	20/8	26/8	10	Ty / Matt
	Learn how to use Audacity	20/8	26/8	5	Harold
Week 7	Draw high-fidelity prototype with Photoshop	3/9	9/9	10	Kyong / Ming
	Draw characters with Krita and GIMP	3/9	9/9	10	Ty / Matt
	Learn how to use Audacity	3/9	9/9	5	Harold
Week 8	Start coding with Unity with draft images	10/9	16/9	5	Kyong
	Draw other images that need in the app	10/9	16/9	10	Ty / Matt
	Making Side Effect Sound with Audacity	10/9	16/9	5	Harold
	Draw high-fidelity prototype with Photoshop	10/9	16/9	5	Ming
Week 9	Link prototypes with Proto.io	17/9	23/9	10	Matt / Ming

	Develop codes with Unity	17/9	23/9	10	Ty / Kyong
	Making Background Sound with Audacity	17/9	23/9	5	Harold
Week 10	Discussion how to improve the prototype	24/9	26/9	5	All
	Improve the prototype	26/9	30/9	8	Matt / Ming
	Develop codes	24/9	30/9	10	Ty / Kyong / Harold
	Improve sound effect	24/9	30/9	2	Harold
Week 11	Finalise the high-fidelity prototype	1/10	7/10	10	Matt / Ming
	Finalise the basic functional app with sound	1/10	7/10	15	Ty / Kyong / Harold
Week 12	Working on the final report of the project	8/10	14/10	25	All