Module Code & Module Title

C605NT Final Year Project

Assessment Weightage & Type

25% Interim Report

Year and Semester

2021-22 Autumn

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Assignment Due Date: 2021 December 15

Assignment Submission Date: 2021 December 15

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Title: Conan: The Wonder Kid

I confirm that I understand my coursework needs to be submitted online via Google Classroom under the relevant module page before the deadline in order for my assignment to be accepted and marked. I am fully aware that late submissions will be treated as non-submission and a mark of zero will be awarded

Abstract

Almost all youngsters play video games, and children who play too many video games become distracted from their studies. It's not like video games are the cause of the problem; even when there were no video games, youngsters would always procrastinate by watching television or engaging in other enjoyable activities. This project of an educational game is introduced to overcome this problem. Conan: The Wonder Kid is the title of this educational game. As part of its educational component, this game features Newton's law of motion and basic physics. This educational game is appropriate for children in grades 6 and up. This project is for every solo game creator because it is a solo game development project.

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Chapter 1

1. Introduction

1.1. Project Description

Game is a structured form of play that is usually played for fun or entertainment and is sometimes used as an educational tool. Games differ from work, which is usually paid, and art, which is often an expression of aesthetic or ideological elements (Ansari, 2011). According to Accenture, the total value of the gaming industry has surpassed the combined markets for movies, music, and movies. The report, which is based on data collected by 4,000 gamers in four of the largest gaming markets, explores how the industry is shaping up and how it will continue to grow.

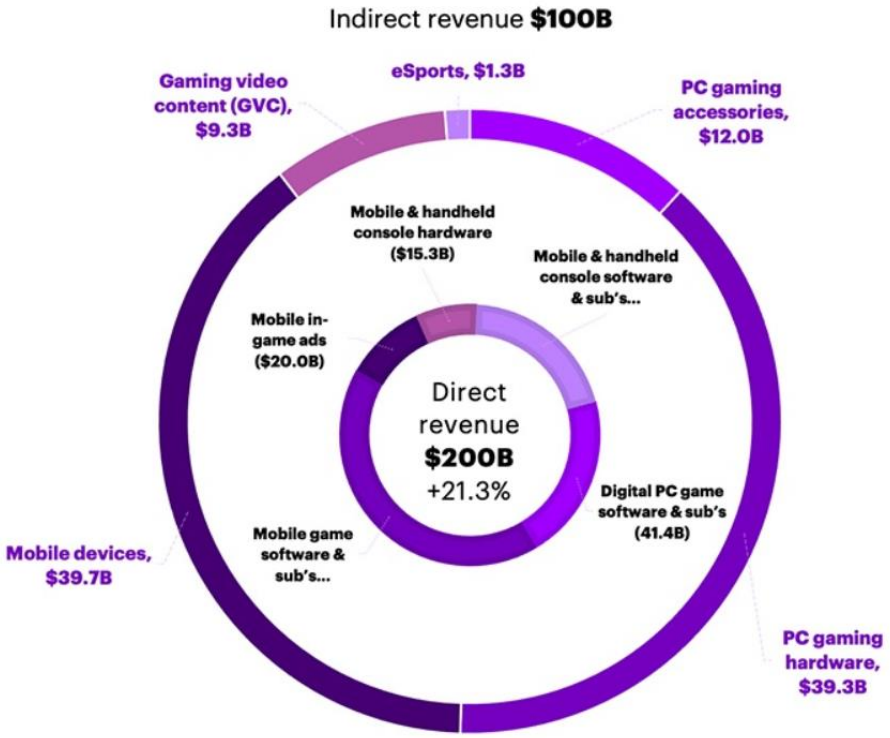


Figure 1: Current scenario of the game marketing

The gaming industry has expanded by half a billion gamers in the previous three years, reaching 2.7 billion individuals globally. According to the estimate, more than 400 million additional

gamers are expected by the end of 2023. The demographics of these arrivals are changing as well: 60% are women, 30% are under the age of 25, and one-third are non-white. Long-term gamers, on the other hand, are 61% male, 79 percent above the age of 25, and 76% Caucasian (Market Report Analysis, 2020).

The social side of gaming is becoming an increasingly important aspect of gamers' overall experiences as the gaming community grows. 84 percent of respondents believe video games help them connect with others who share their interests, and three-quarters acknowledge that gaming platforms now account for more of their social contacts. The data for the study came from an online poll of 4,000 people who spend at least four hours a week playing video games. China, Japan, the United States, and the United Kingdom are evenly represented in the sample. Over a dozen in-depth interviews with gaming executives from Activision Blizzard, EA, Everton, Niantic, Razer, Square Enix, Samsung, Splash Damage, and Tencent were also done (Wiley, 2020).

Educational games are either educational games designed specifically for the aim of education or entertainment games with educational value. Educational games are designed to help people learn new concepts, gain domain knowledge, and improve their problem-solving skills. Almost half of all youngsters spend more than 10 hours each day online, and by the age of twenty, they will have logged more than 30,000 hours of gaming time. Rather than trying to distract children from the technology that is such an integral part of their lives, many educators have learned to embrace high-tech methods of education, such as educational video games, game-based learning, and "blended learning" (the process of combining both technology and more traditional methods of teaching). According to a 2013 research, games can help students boost their grades by two grades. Co-op is the way to go. Children's results increase by two standard deviations when they play together, according to research on motivation.

1.2.Problem Statement

The Covid-19 epidemic made a huge impact on the educational system, with institutions across the country essentially crumbling overnight. Schools and colleges use a unique educational approach in which students are unable to physically attend classes and must instead attend sessions online, creating a new challenge. The majority of survey participants reported internet problems and lacked the ability to use and handle technology-related concerns, according to the findings.

During online classes, there are a variety of issues that might develop. As communication between students in schools and universities became more challenging, efforts were undertaken to devise ways for resolving basic issues that developed during online education.

Due to the epidemic, parents were having problems watching their children, assisting them with their online studies, providing a learning environment for their children, and so on. During the epidemic, children were often busy with other things and slacked off during online courses, and they were fascinated with online gaming and video games.

Many gaming companies are now investing millions of dollars on game development. Many gaming businesses invest millions of dollars in in-game graphics, coding, marketing, and other areas, which is almost impossible in Nepal. Young people are likewise shelling out large sums of money to play these games. Even if game firms invest a large sum of money in developing such games, players in Nepal will not purchase or spend money on them. They will just play a crack game with other foreign firms. It is quite tough to produce and fund such a large game in Nepal.

1.3.Project As Solution

We can completely resolve the current problem by developing a children's educational game. As we all know, games are quite popular among children; hence, including education into games allows children to learn while having fun. There is a lot of worthless content in games, but if we replace it with education, we can teach kids about educational concerns using the gaming content. Playing educational games may benefit children in a variety of ways, including improving hand-eye coordination, problem-solving, and strategic thinking abilities, as well as helping children build their memory. It can also aid children with attention disorders. Traditional learning is outperformed by games, especially those with simulation components, by 23%. Games are powerful motivators, according to an outstanding 2011 research, but they work best when learning is the pleasurable part, not just a side note. In the current situation, when parents worry that their children are distracted by games and are obtaining poorer marks in school, and where children just want to have fun while playing games, education games would undoubtedly be the most effective solution.

Solo game creation is the most effective technique to address and lessen the risk of game development where corporations must spend a large amount of money to generate games. Players will not have to spend as much money on design and visuals while developing a solo game; instead, they may use the available resources to create a free game. The number of downloads and the commercials played in-game are two ways for developers to make money. As a result, we will be able to build games in Nepal, and Nepalese gamers will be able to enjoy games created by Nepalese creators.

1.4.Aims and Objective

The project's major goal is to assist all parents and educators who are having difficulty educating their children and students, as well as to assist younger children in learning in their preferred manner. Only a few companies manufacture games in Nepal's present IT industry, and with this project, we can tackle two problems: the cost of producing games and the difficulty of youngsters studying in school.

Some objectives of this project are given below:

- To develop an educational game using unity C#, which enhanced the skills and knowledge in programming and game development.
- To understand how the game object works.
- To increase the thinking skills and creativity in game designing.
- To learn the implementation of the unity engine.
- To understand the working mechanism of the unity engine and the implementation of physics in-game objects.
- To be creative enough to put educational topics inside a fun game.
- To document the details of the creation and implementation of this game.

1.5.Structure of the report

1.5.1. Background

The project elaboration and literature evaluation are principally illustrated in the report's background. The project's elaboration offers a full explanation of the project's technical features, such as hardware and software needs. In the literature review, a full overview of the survey results and end-user interviews is offered, as well as a quick comparison of similar systems.

1.5.2. Development

The methodology used in this project is clearly explained in this part, as is the purpose of choosing this methodology. In addition, the stages involved in the chosen methodology are briefly described, along with a work breakdown structure and Gantt chart.

1.5.3. Project Progress

This part includes a progress chart that shows how far I have come so far, as well as a quick explanation of the work I have done so far based on the steps of the approach I have selected.

1.5.4. Further Work

This part explains the tasks that must be accomplished in the next stages of the technique, giving a detailed description of the tasks that must be completed to finish the future stages.

Chapter 2

2. Background

2.1. Project Elaboration

The project is being introduced to address a contemporary issue that every parent, teacher, and student is facing. This project will assist young children in learning educational topics in a fun and interesting manner, and their parents and teachers will not have to worry about their children's procrastination habits. In the case of Nepal, a solo game will solve the financial problem while simultaneously providing opportunity for skilled game developers to create their own solo games, so addressing the problem of unemployment. In this circumstance, the educational game will be revolutionary.

2.2. About the end user

To begin with, this educational game is designed for children in grades 6 and up, however teachers and parents are more interested in the educational game than the children themselves. The educational games that are being produced on the internet are appreciated by not only children and teenagers, but also by parents and teachers. I looked through the educational game review area and articles and discovered that parents and teachers are more likely to play or test the games before their children and students. The majority of the time, teachers and parents will provide feedback on educational games. Some of the educational games were also very interesting and fun to children and youngster.

2.3.Understanding the solution

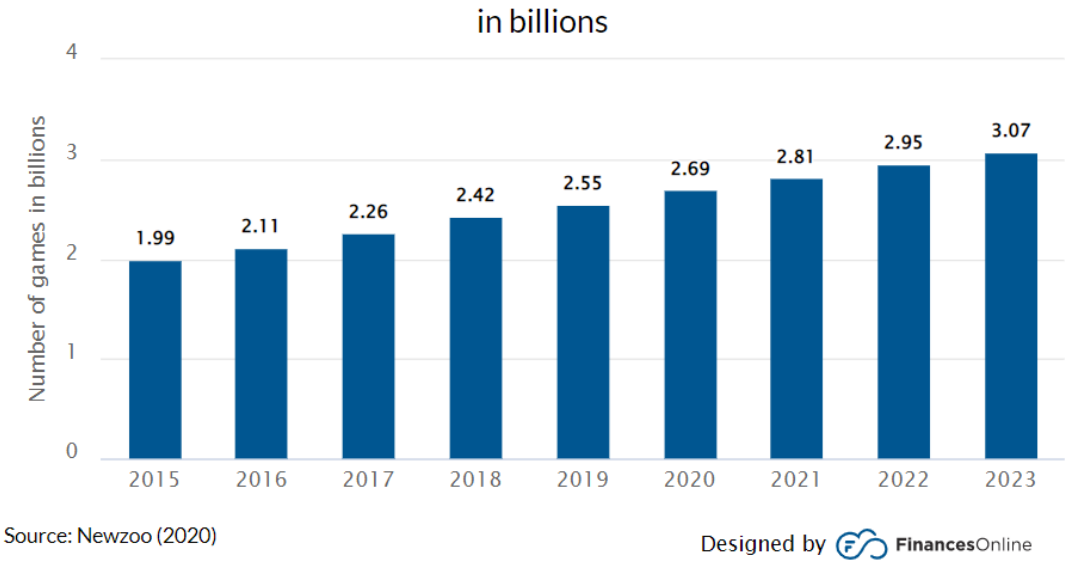


Figure 2: Number of active video gamers worldwide

Every year, the number of people who play video games are growing rapidly. Nearly one-third of all youngsters play video games. Many young people are influenced by both offline and online video games, which has a negative impact on their education. Addiction to video games causes children to lose concentration on their schoolwork. This condition is extremely difficult for children, and their parents and teachers are quite concerned. In order to level up or get stronger in the game, players will go to any length. If we include education into the game and have them complete educational chores in a pleasant fashion that will help them become stronger in the game or level up, they will undoubtedly complete those assignments and learn a great deal. Even if no education is included in the game, there are numerous things that players may learn from particular types of games. By keeping the player occupied, the game helps to prevent addiction to other harmful habits while also reducing anxiety. An educational game is an excellent method to address this issue. Youngsters may use their procrastination tendencies in an educational game to help them study while still having fun.

2.4.Review of similar systems

2.4.1. Colors & Shapes Game - Fun Learning Games for Kids

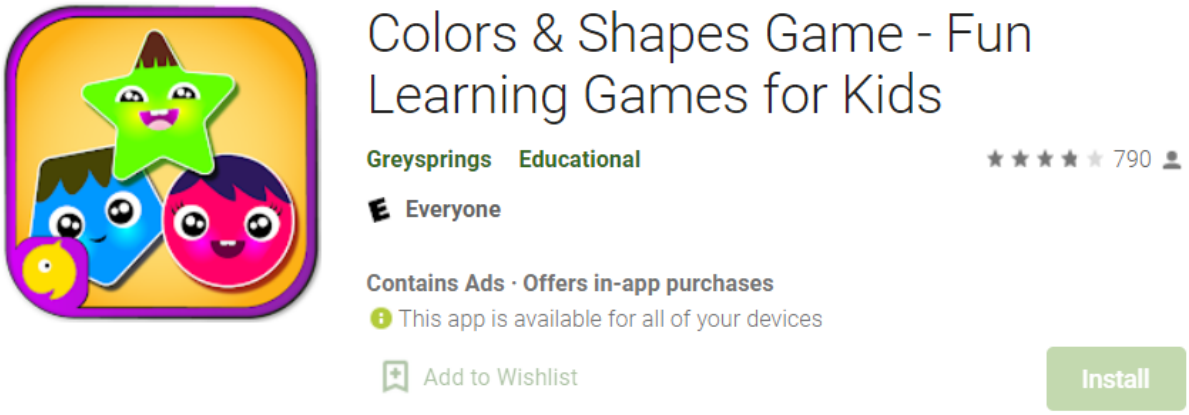


Figure 3: Colors & Shapes Game- Fun Learning Games for Kids

Colors & Shapes Game is an education games for kindergarteners (age 2-6) years. This game includes educational games activities to teach kindergarteners about shapes & colors using vegetable/fruit and other real life household objects. Kids Learn Shapes & Colors is a fun and educational software that children will enjoy. The game's experience is enthralling to children since there is no winning or losing. The activities are meant to help kids learn shapes and colors while also expanding their early learning and discovering new sounds. Kindergarten children enjoy cartoon coloring pages, thus free coloring books are creative games for them which is included inside this game (Grey Springs, 2021).

✨Learning Shapes & Colors Games for Kids✨

📍 Attractive and enticing designs and pictures for learning shapes and colors for preschool children
📍 Engaging kids learning activities for toddlers for early childhood education about Shapes and colours
📍 An interactive and engaging way, meant for early learning for kids
📍 Colors for kids is a great learning game for children
📍 The tracing of geometric shapes for toddlers enhances hand eye co-ordination and motoring skills. It not only enhances the hand eye co-ordination but also prepare the child for writing, without even knowing the she is being trained for writing
📍 So Many free coloring pages for kids to enjoy unlimited fun
📍 Painting using pencils and crayons to color the Geometric shapes for toddlers and so many coloring pictures and sheets
📍 Learning Shapes and colors for toddlers has been presented in the form of fun learning activities like Dragging the monster for space jump, feeding hungry frog, Balloon pop quiz, Odd one out, Honey bee etc.
📍 Many interactive activities to teach about different geometric shapes like Circle,Square,Triangle,Heart,Diamond,Star,Semicircle,Oval,Rectangle,Pentagon,Hexagon etc.
📍 In the activity Robot factory, Kindergarteners learn about shapes and their usage.
📍 Hidden object Games- Scratch and reveal different colorful Geometric shapes.

Figure 4: Specialties of Colors and Shapes games

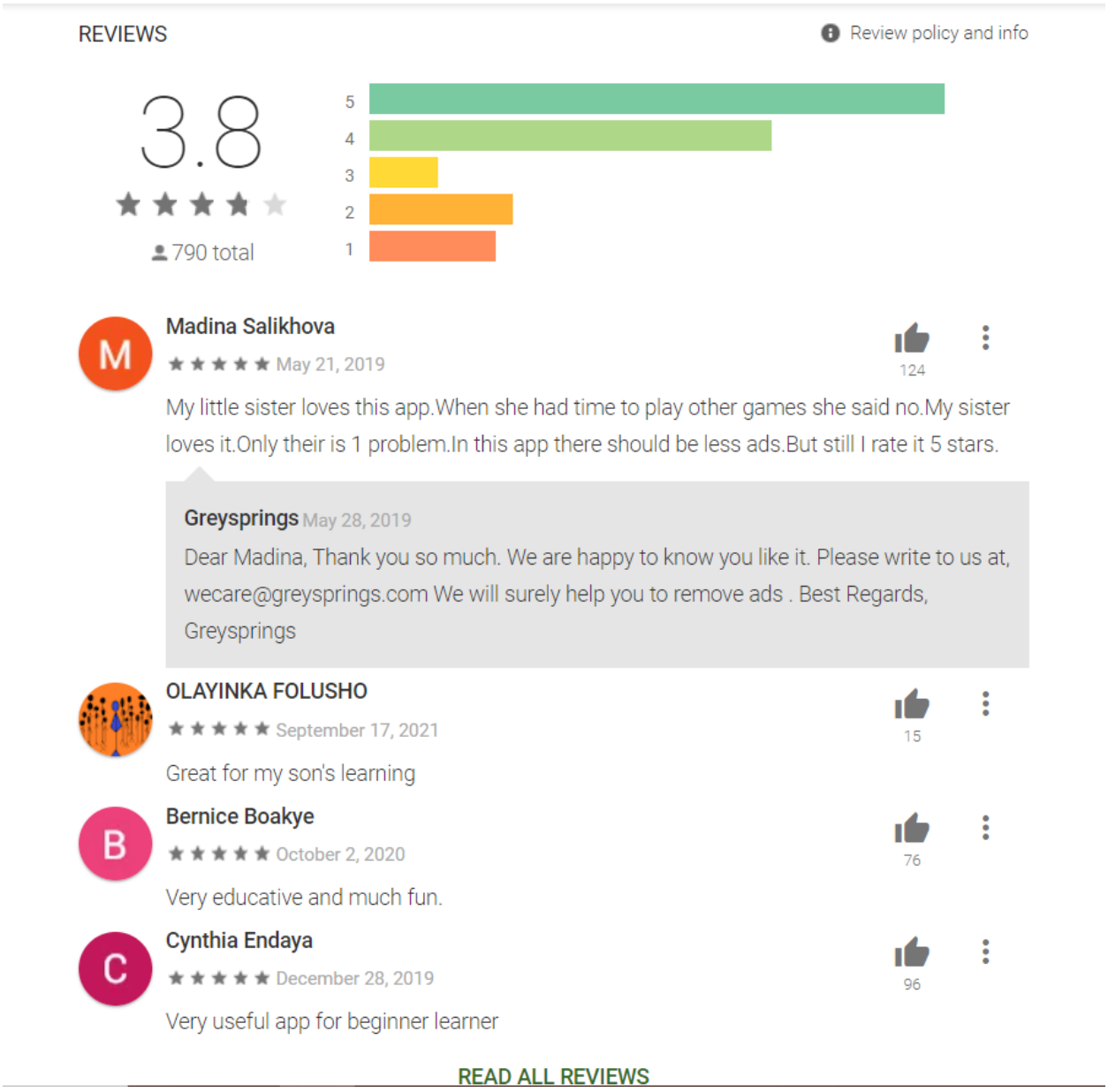


Figure 5: Some reviews on Colors and Shapes games

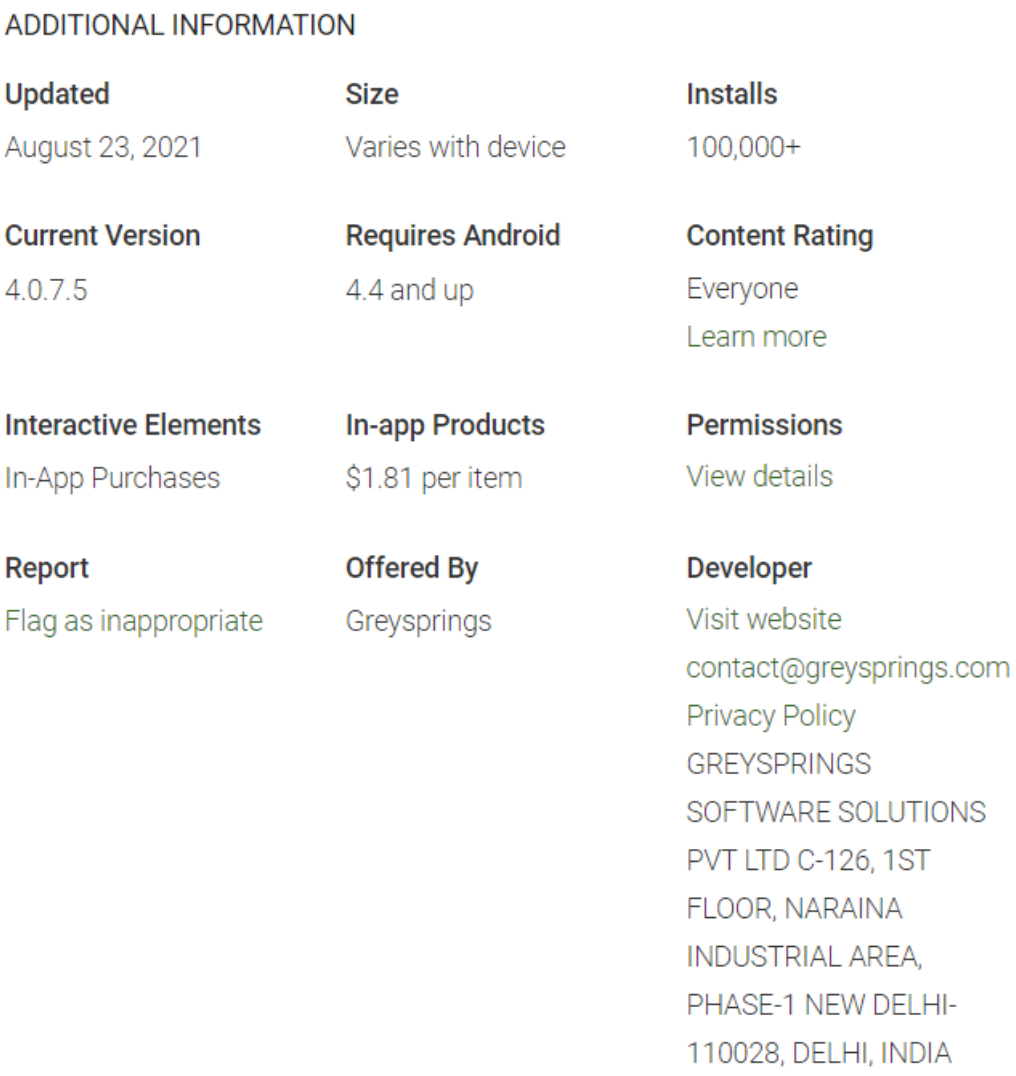


Figure 6: Additional Information on Colors and Shapes Games

2.4.2. Masha and the Bear: Water game

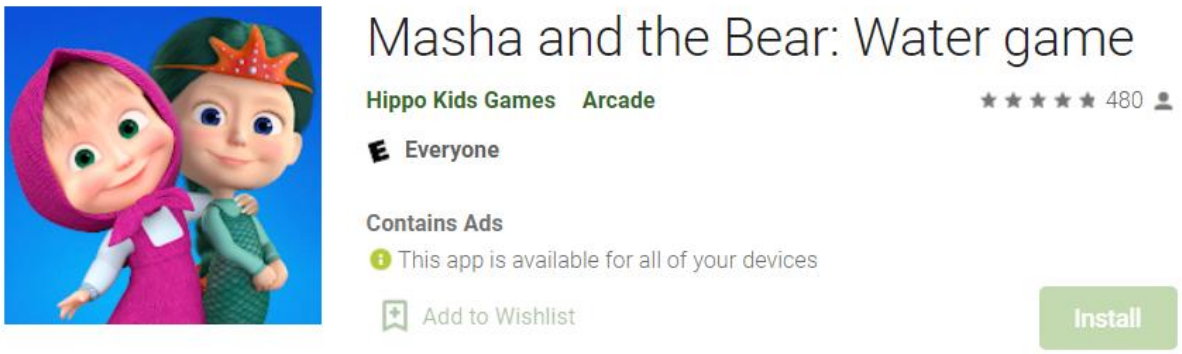


Figure 7: Masha and the Bear: Water game

Masha and the Bear: Water Game is an educational game for kids whose age is 3-7. This is an easy educational game that will help player to learn colors, find the same items and make various puzzles. The characters from children's favorite cartoons are use in this game to make it more fun and interesting for children (Hippo Kids Games, 2021).

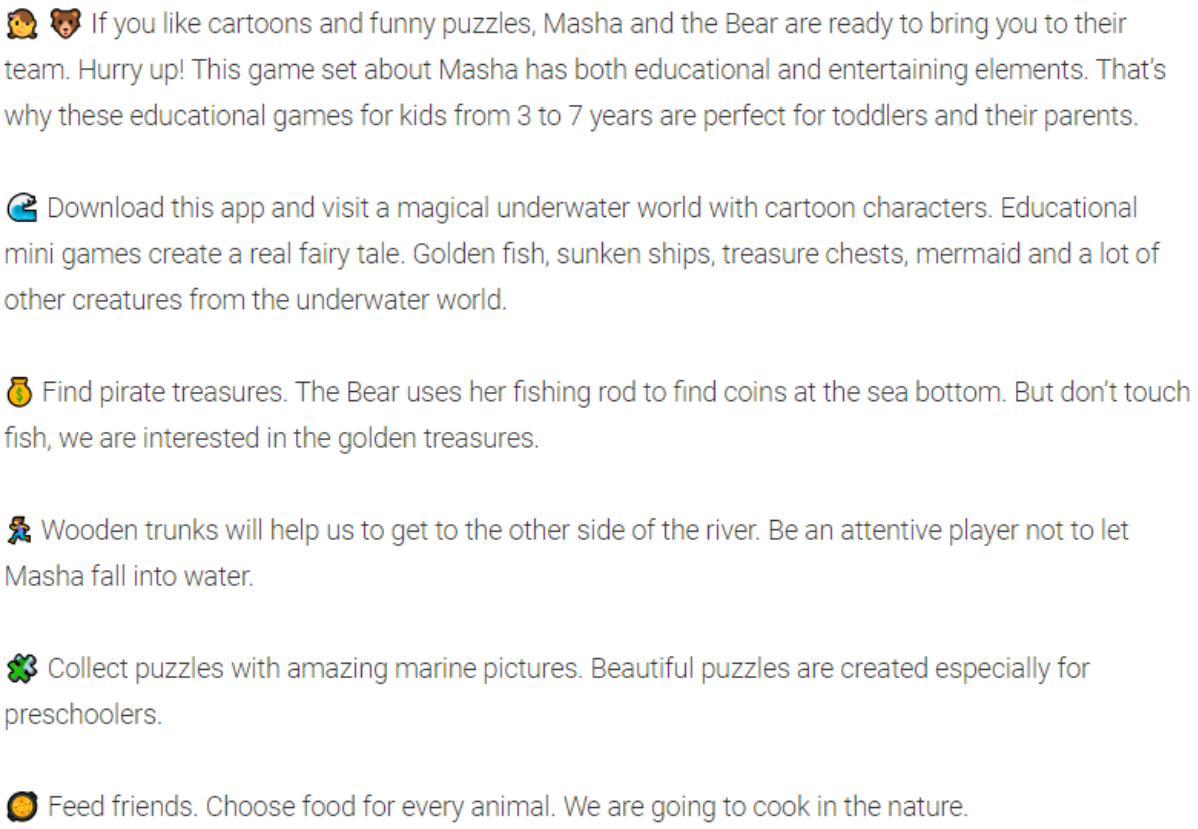


Figure 8: Specialty of Masha and The Bear: Water Game

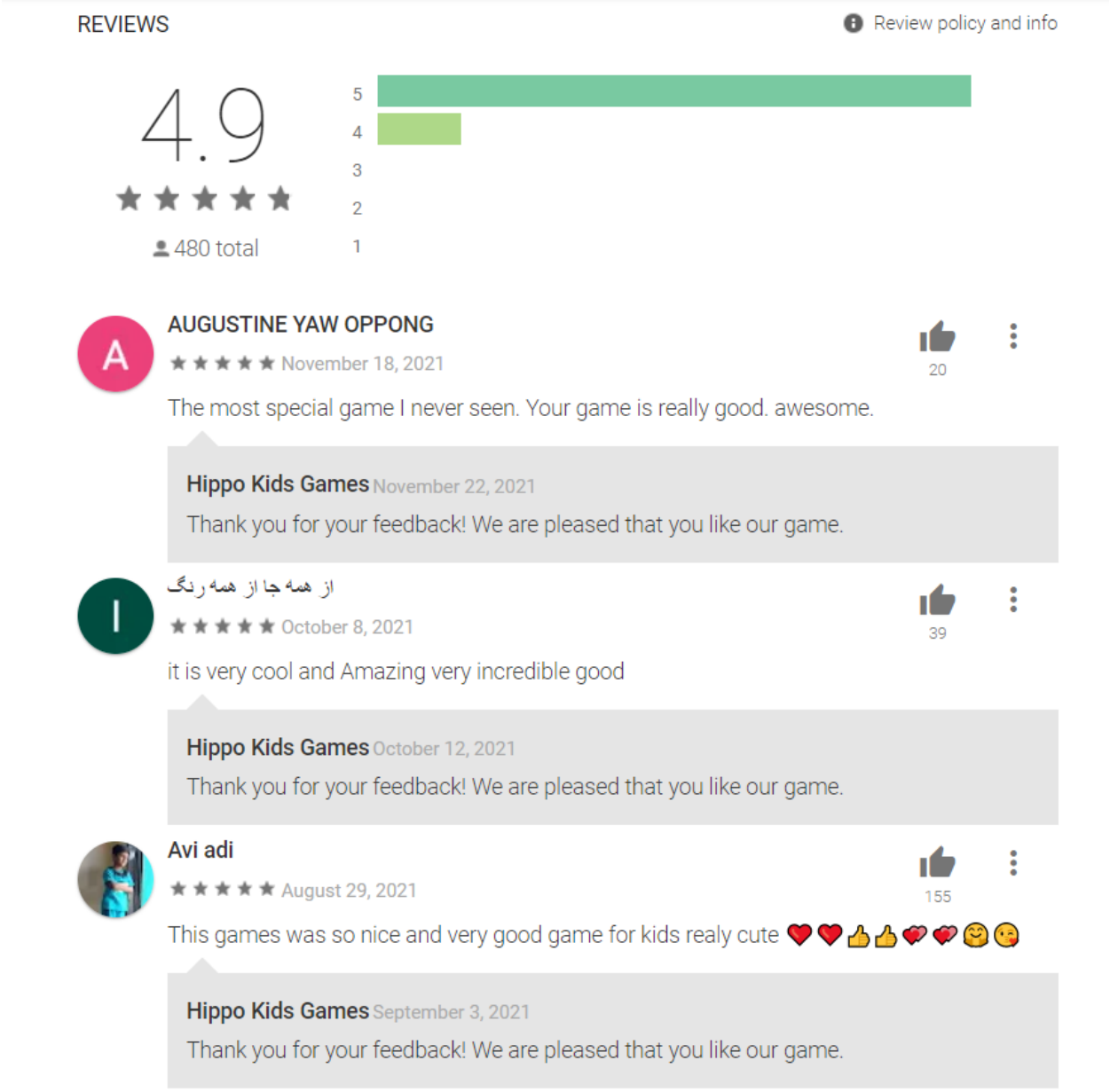


Figure 9: Some Reviews for Masha and the Bear: Water game

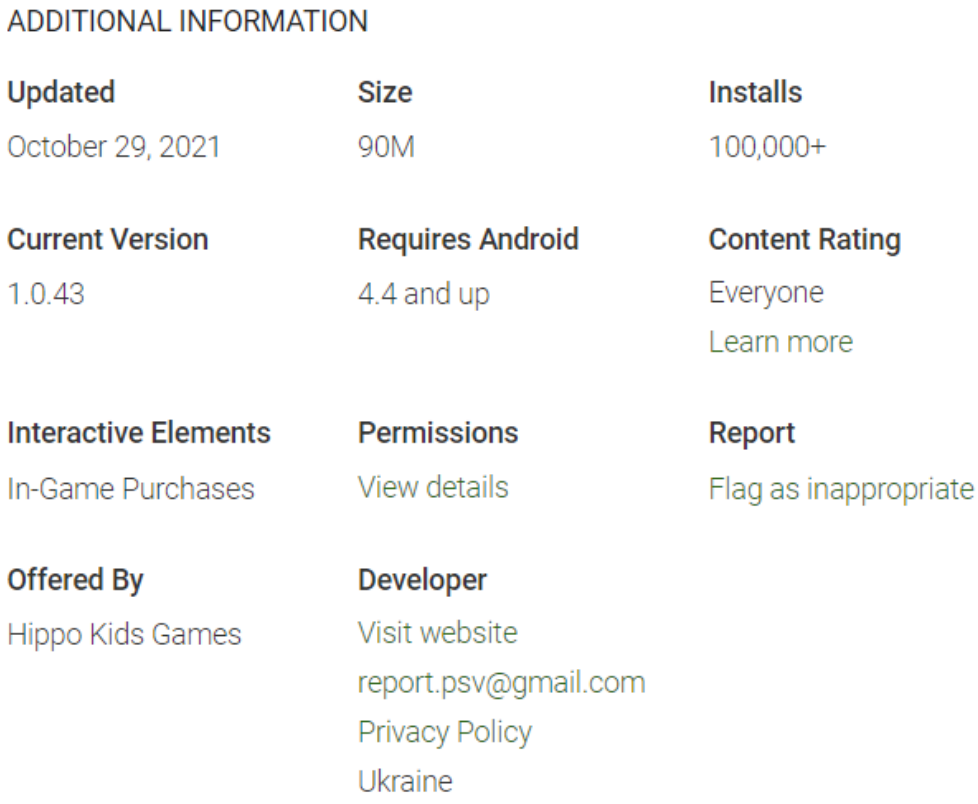
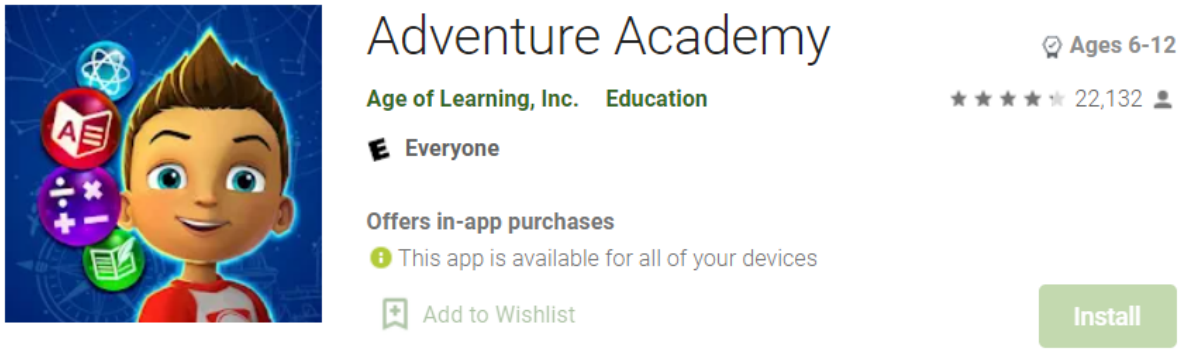


Figure 10: Additional features of Masha and the Bear: Water Game

2.4.3. Adventure Academy



Adventure Academy is an educational adventure game which is playable by the age group 6-12. In Adventure Academy, players will travel around the academy and solve the problems of math, science, grammar, etc. to level up. This game will increase the player knowledge about academy studies and also help them to increase their problem-solving skills. Not only kids but also the early teenagers are also suggested to play game (Age of Learning, 2021).

Key Features:

Discover and play thousands of learning activities to help boost key skills and abilities across many subjects, including math, language arts, reading, science, social studies, and more

Share amazing experiences with your best friends in a safe and secure environment

Play simultaneously with up to three other scholars within the same account on your individual smartphone, tablet, or computer

Crafted by teachers and early learning education experts with a curriculum-first approach

Complete quests and learning challenges with your friends to level up and advance your character's abilities

Great for homeschoolers and learning on the go

As you continue your journey through Adventure Academy, you can also earn amazing rewards for your accomplishments. Hundreds of clothing items, hair styles, and looks give a seemingly unlimited number of choices to customize your character. Also, you can earn your own 3D virtual home within the game that you can decorate with items you earn from completing learning activities.

Trusted by teachers and designed by early learning education experts, Adventure Academy provides a safe learning environment for students. Parents can monitor progress, control the level of interaction through filtered chat, or block in-game communication entirely.

Figure 11: Key Features of the Adventure Academy

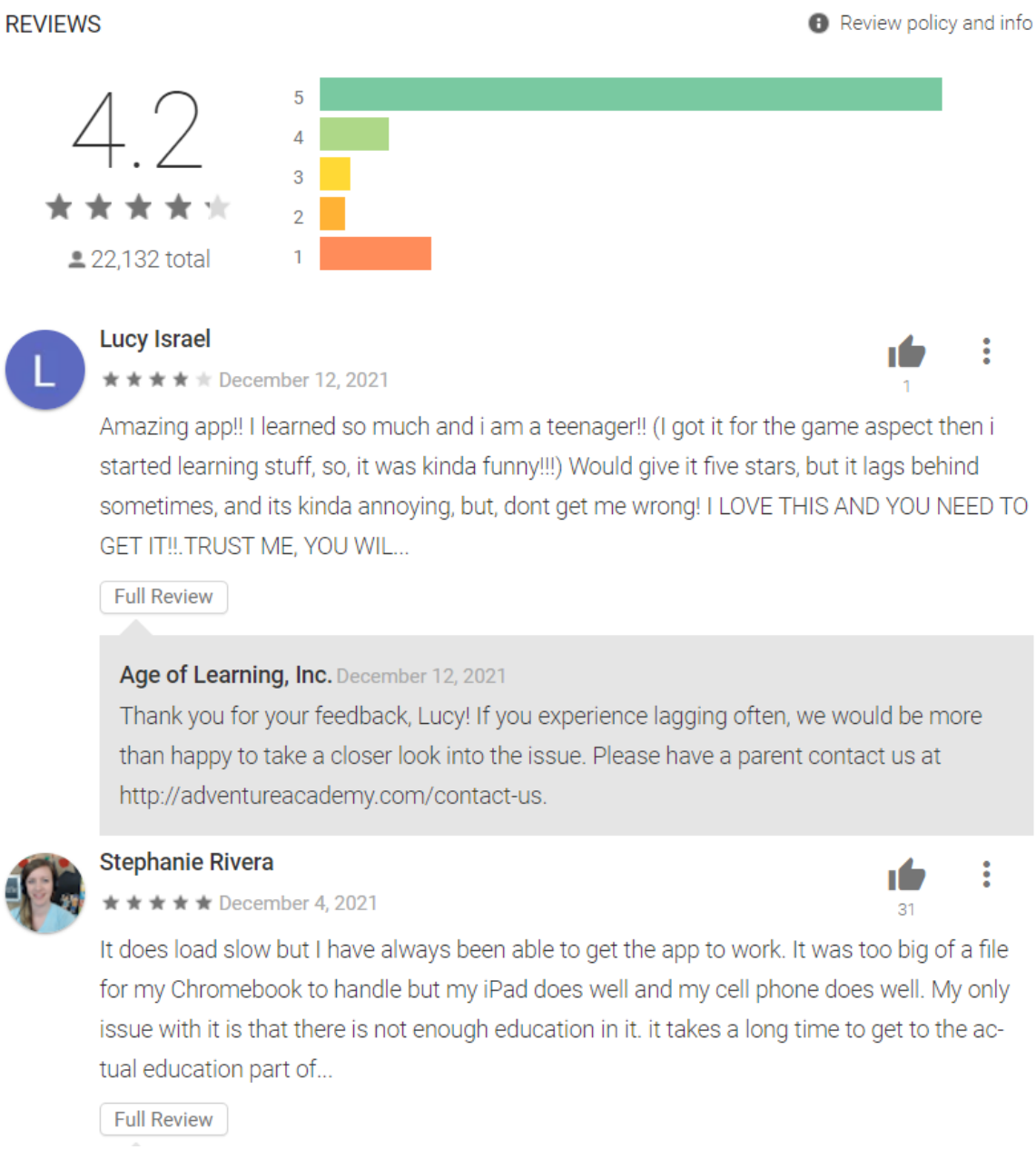


Figure 12: Reviews for Adventure Academy

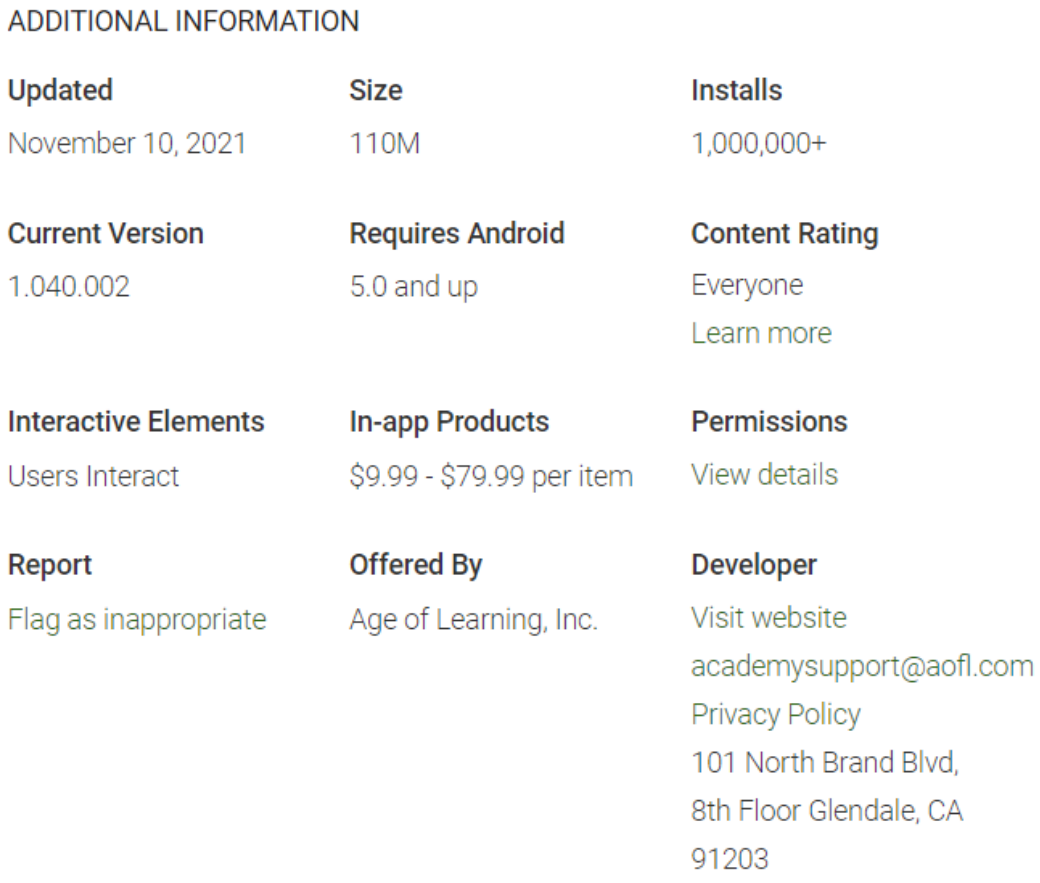


Figure 13: Additional Information for Adventure Academy

2.5.Critical Analysis

All three games are educational games aimed at various age groups. They were all posted to the Play Store. Many people enjoy these games, and many of them have received great reviews. All of these games are developed by various companies and have different game ideas. Each one of these games has different educational component to it. All of the games are designed with the age range of children in consideration. Below is a comparison of the features of these games with my game:

Comparison List				
Features	My Game	Colors and Shapes Games	Masha and the Bear	Adventure Academy
2D or 3D	2D	2D	2D	2D
For Age group	13 and above	2-6 years	3-7	8-12
Education About	Newton's law of motion and Physics	Colors and Shapes	Colors and Items	Math, Science and Grammar
Mobile Application	Yes	Yes	Yes	Yes
Windows	Yes	No	No	No
Solo game	Yes	No	No	No

Table 1: Comparison List Table

2.6.Review of technical aspects

Since the project's goal is to create an educational game, it requires lots of software. The following is a list of the software that will be used in this project:

1. **Visual Studio 2019**

Microsoft Visual Studio is an integrated development environment (IDE) developed by Microsoft for several forms of software development, including computer programs, websites, web applications, online services, and mobile apps. Completion tools, compilers, and other capabilities are included to make the software development process easier. Visual Studio is used to write code for my system.

2. **Adobe Illustrator 2021**

Adobe Illustrator is a vector-based design and drawing application for professionals. Illustrator may be used to create everything from single design components to whole compositions when used as part of a wider design workflow. Illustrator is used by designers to make posters, symbols, logos, patterns, and icons, among other things. Adobe Illustrator is used to design game objects and game characters.

3. **Unity**

Unity is a robust cross-platform IDE for developers and a 3D/2D game engine. Unity can provide many of the most crucial built-in elements that make a game work as a game engine. Physics, 3D rendering, and collision detection are all examples of this. Unity technologies created a cross-platform game engine that is mostly used to create video games and simulations for computers, consoles, and mobile devices. Unity is used to develop this education game

Chapter 3

3. Development/ Methodology

A game is a type of software application that is designed to give amusement. When it comes to starting and creating games, merely following the software development life cycle (SDLC) isn't enough, because game developers encounter several obstacles during the production process. (Examples of difficulties include graphics, visuals, sounds, animations, physics, collisions, AI, gestures, and user inputs, among others). A new approach known as GDLC (Game Development Life Cycle) will be introduced to solve the difficulty that every game creator faces. To develop strong software architecture for your game on all platforms, GDLC relies on common streamlined engineering concepts (Pressman, 2009). The game development process is extremely complicated and building a product for numerous platforms will always necessitate a collaborative multi-skilled/talented team. Game producers, game/art directors, a technical team, game designers, a game artwork team, a game quality team, a game programming team, a game testing team, and a game marketing (post-Production) team are all involved in the process (T.Fullerton, 2008).

To develop a successful game, any new gaming project should follow all the stages outlined in this image:

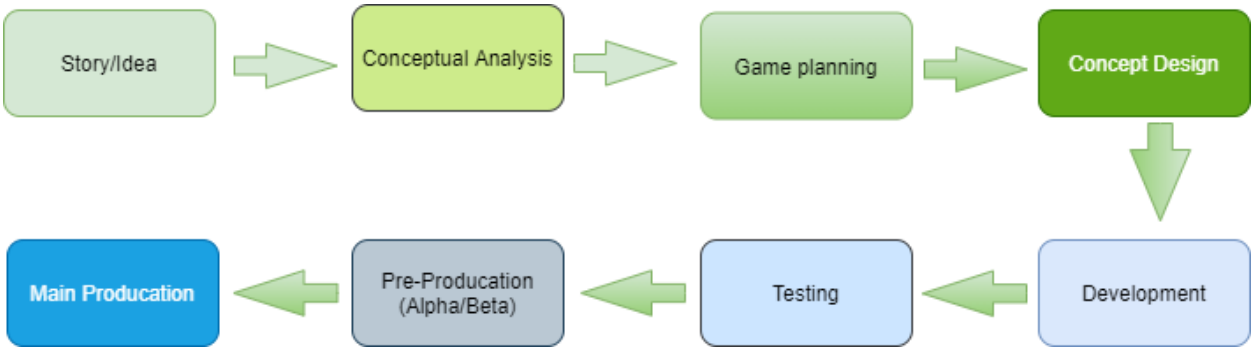


Figure 14: GDLC Chart

3.1. Story/Idea

The creators decide on the sort of game they want to make in the first stage, such as the target audience or players, the type of game, the hero, the protagonist of the game, the game's theme, and so on. The actual game concept and need of our project is the story/idea. All of this should be stated in the project/requirement document. Ideas are merely snatches of information from your game. It's the game's genuine prototype, which includes all of the concepts. Game Concept/Game Story refers to a collection of concepts.

3.2. Conceptual analysis

According to the story or concept, a thorough analysis of the need is required. Before beginning game production, a feasibility study should be completed. As a result, we'll need to look at a few areas.

- Actual Requirements
- Pricing
- Technical Capabilities
- Organizational, Cultural or Legal Issues and Solutions
- Skills and Scope of the project

3.3. Game planning

Following the collection of all needs and data from studies, game development planning is required. The game's project plan or blueprint must be created. On paper or a chart, write down all of the features, tasks, and ideas.

- Make a task list (graphics, animations, sounds, etc.)
- Scheduling and estimating the duration of each task
- Create a document/chart depicting the workflow
- Determine the workflow as well as the test cases and test strategies

3.4. Concept Designing

The term "concept design" refers to the creation of a design prototype for a certain demand, idea, or story. It is also known as "game design." The core of each game/product is the design. Game Design demonstrates mastery of the trade-in bringing a concept to life. Any game's most inventive, creative, and complicated process. It is required to create decent and high-quality games. It necessitates critical interactive thinking, comprehension, implementation, execution, behavior, and user interface design. Before beginning production, the game designer must produce a document known as the "Game Design Document (GDD)" (Chandler, 2010).

Game Design Elements:

- UI Interface
- Game Data
- Player Data & Characteristics
- Level Design
- Gameplay & Mechanism
- 3D/2D Game Arena
- Game Objects/Powers/Properties
- Sound Music

3.5.Development

Following the completion of the GDD, it is now time to begin developing the actual game concept/idea as described in the Game Design. The programming for the development should begin with the selection of the Game Engine and its supporting modules/plug-ins/frameworks/platforms. The lead programmer is responsible for the game's development progress and quality; the lead programmer should create a checklist of pending, working, and finished tasks based on the developer's tasks. The work of each programmer/developer must be submitted to the main programmer.

The Developer should be knowledgeable about the coding system and its vocabulary.

This part includes:

- Abstraction
- Modularity
- Pattern of Design
- The architecture of Software and Games
- Structure and Style of Coding
- OOP skills
- Robust programming
- Use fewer resources & generate more output
- Feel end-user experience

3.6.Testing

The most crucial aspect of the GDLC is testing. In any game/concept development architecture, testing and game design are equally important. Testing is more than just playing a game at work or in the arena. It's about the real end-user experience with our product. It is a repeated and interactive process of receiving the same screen flow input and anticipating the user's response in terms of game quality.

While doing QA testing, it must work on two papers, one under the Bugs Tracker Report and the other under the Testing Report.

1. Documents for Test Cases
2. Documents for Test Plans

Every testing procedure must include certain papers and file systems:

- Defect/Bug
- Reproduce
- Module
- Frequency
- Bug Log Number
- Status/Occurrence
- Screenshots
- Platforms
- Date Time

3.7.Pre-Production (Alpha/Beta Release)

The Alpha/Beta Release is a wonderful approach to learn about user experience and acceptance of our product. If we made any problems after completing the testing phase, we may discover them using pre-production techniques before moving on with the main production. We need to produce a report for the Alpha/Beta Release's output; if the rework is required, complete it for our product and ready it for Main Production/Main Release.

3.8. Main production

We need to prepare a short movie that looks like a trailer for our game and take some appealing screenshots during the creation stage. Finally, correctly deploy the game, press publish, and make it available in the relevant shops! We prepare a release note, privacy rules, and terms and conditions of use for our product, and include them in a well-organized main marketing document.

Chapter 4

4. Progress

4.1. Progress till date

By this date, I have successfully finished the Story/Idea part of my project. I described the game story first and then about the characters in the game. The game description and the character description are also finished along this part. I'm currently working on the UI design of the game world and creating the game loop and game mechanics.

The Wireframe of the outer design is also completed. Refers to the wireframes in the Appendix

4.2.Progress table

Task	Status	% Complete
Research	Complete	100%
Survey	Complete	100%
Proposal	Complete	100%
Project Plan	Complete	100%
Requirement Gathering	Complete	100%
Story/Idea	Complete	100%
Game Design	In Progress	20%
Initial Prototype Development	In Progress	10 %
Prototype Refinement	In Progress	0%
Testing	In Progress	0%
Main Production	In Progress	5%
Document and User Manual	In Progress	0%

Table 2: Progress Table

Chapter 5

5. Further Work

According to the Gantt chart and Milestones tasks, there is still more work to be done in the future of the project and they are:

- Conceptual Analysis
- Game Planning
- Game Design and Development
- Testing
- Beta Release
- Feedback from users
- Update and Upgrade completion
- Report for the final product

6. Conclusion

In the context of Nepal, creating an educational game is very important, it can solve the problem of teachers as well as parents. Video games are a type of media that is frequently linked to detrimental health effects. Games, on the other hand, may be a useful source of stress release as well as a catalyst for mental health improvement and the development of social skills when played in moderation and with mindfulness. Video games are a relatively new kind of entertainment in their own right. They engage and immerse you in a way that traditional board games and other types of entertainment do not. The player actively adds to the degree of enjoyment he or she derives from this medium, making him or her more involved and eager to participate in the video game's aspects. Gaming's impacts are also influenced by the quantity of time spent playing. Excessive playing can be harmful, but gaming in moderation can be healthy, enjoyable, and educational. By including education inside the game, we can reduce the risk of loss of time and also utilize the time of youngsters who play games to procrastinate.

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8. Appendices

Appendix A: Survey Result

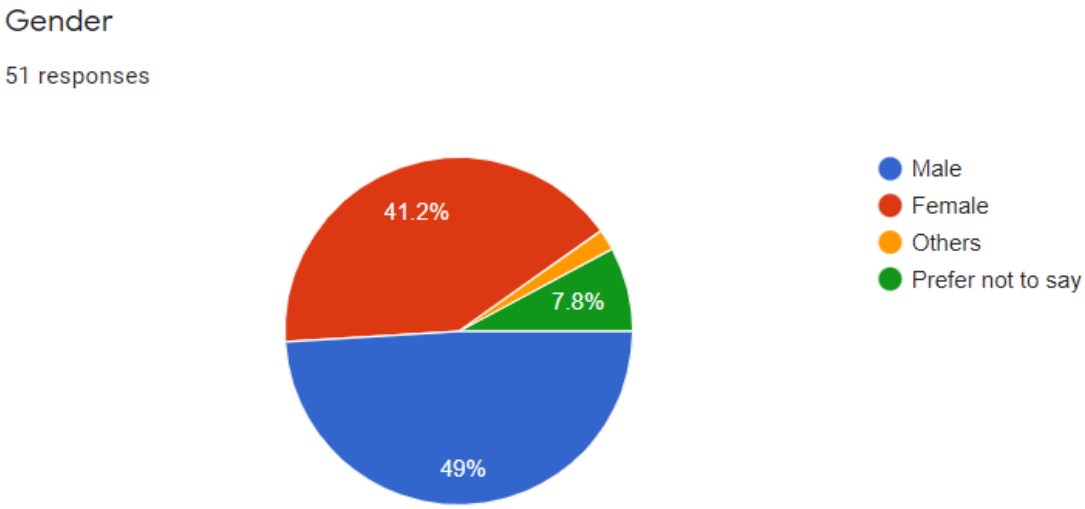

Figure 15: Survey Result 1

This survey shows the gender of people who took part in the survey.

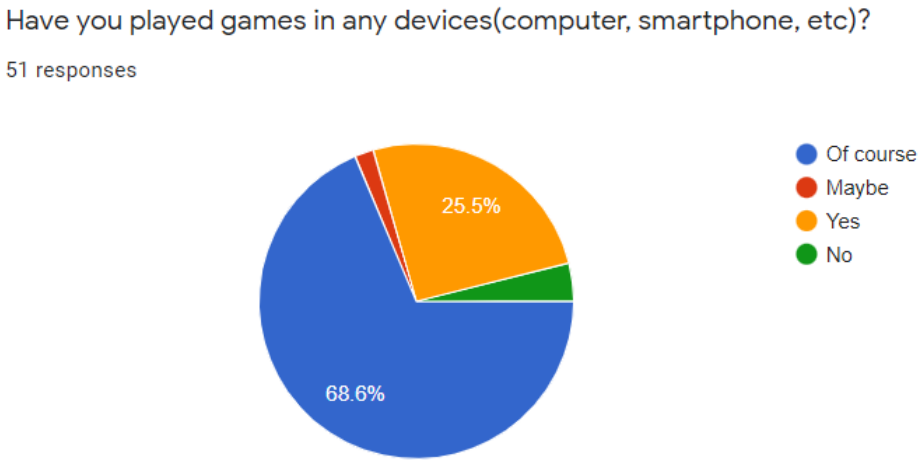

Figure 16: Survey Result 2

This survey shows if people who took part in this survey plays games.

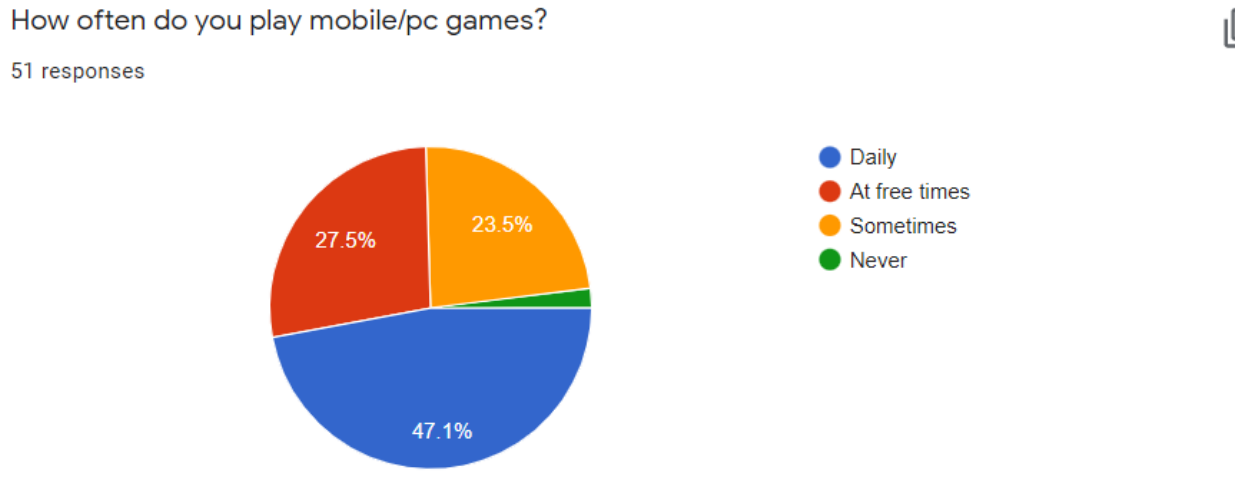

Figure 17: Survey Result 3

This survey shows how often the people who took part in this survey plays the game.

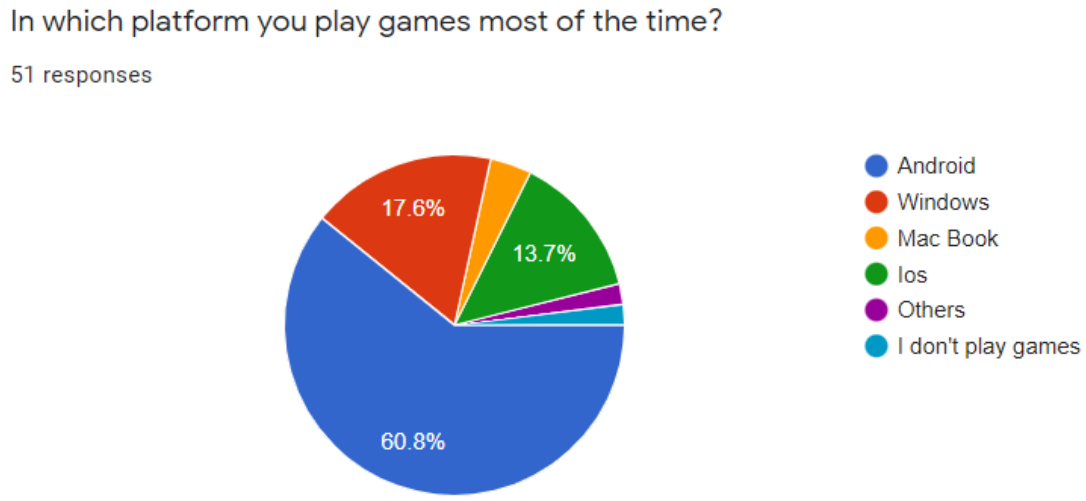

Figure 18: Survey Result 4

This survey shows the platform in which people who took part in this survey plays game in.

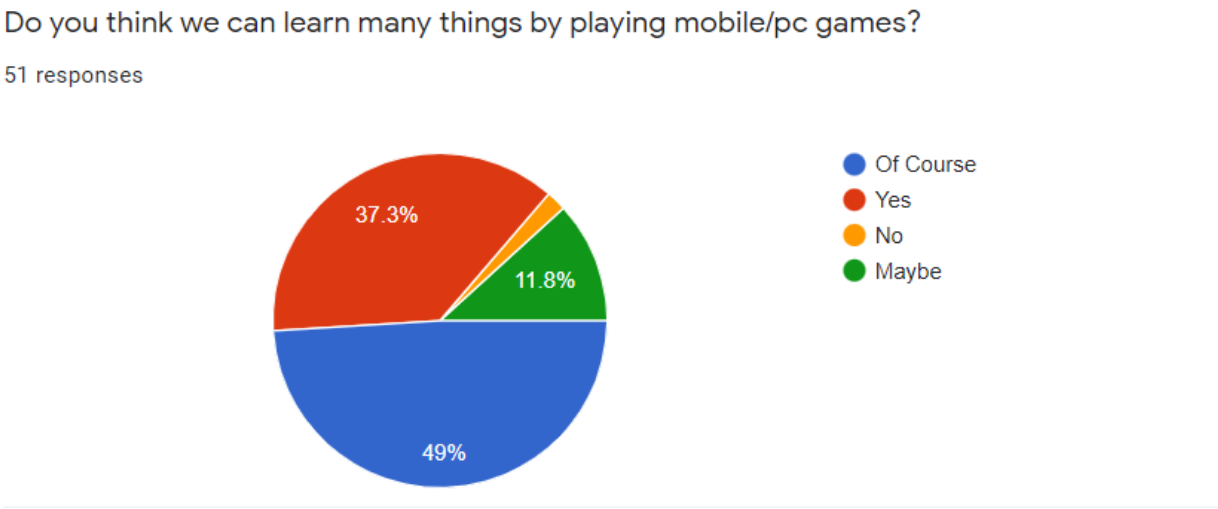

Figure 19: Survey Result 5

People giving their opinion about mobile/pc games

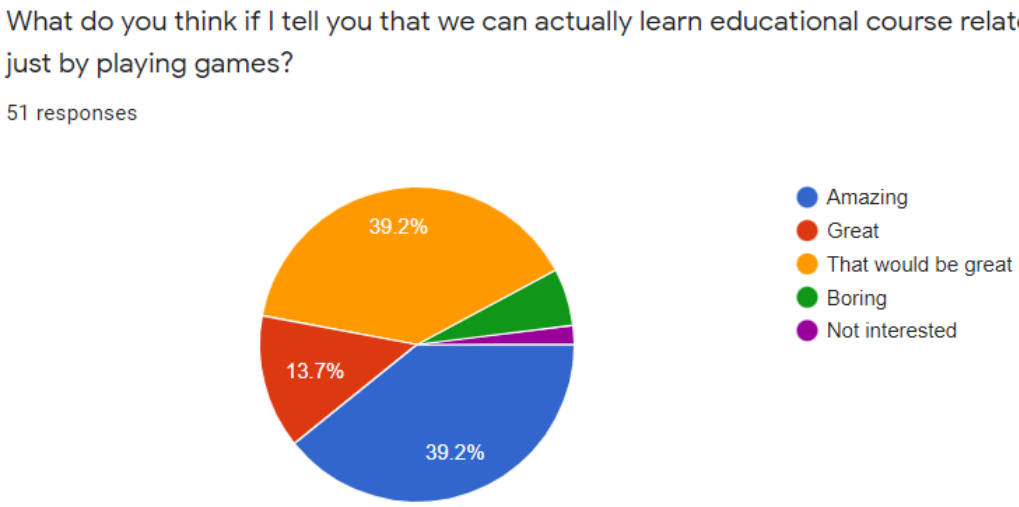

Figure 20: Survey Result 6

People responses to educational game.

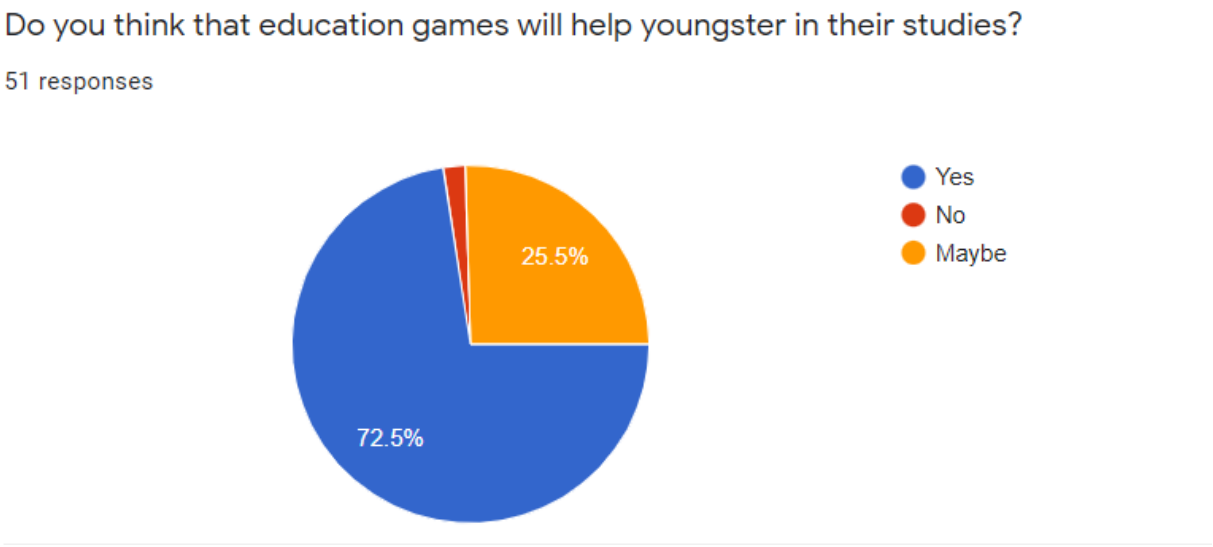

Figure 21: Survey Result 7

People giving their opinion if education game will help youngster in their studies.

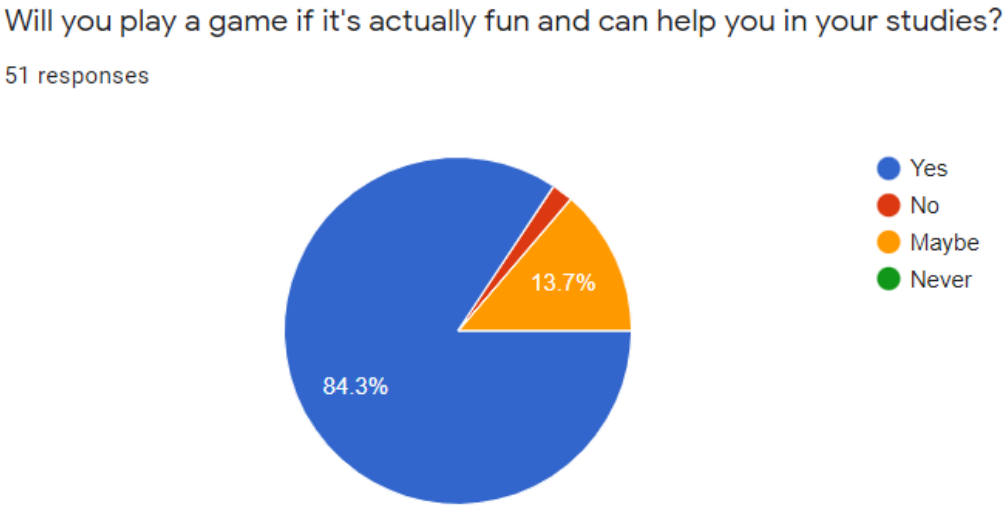

Figure 22: Survey Result 8

Result of asking people if they want to play game if it will help then in their studies.

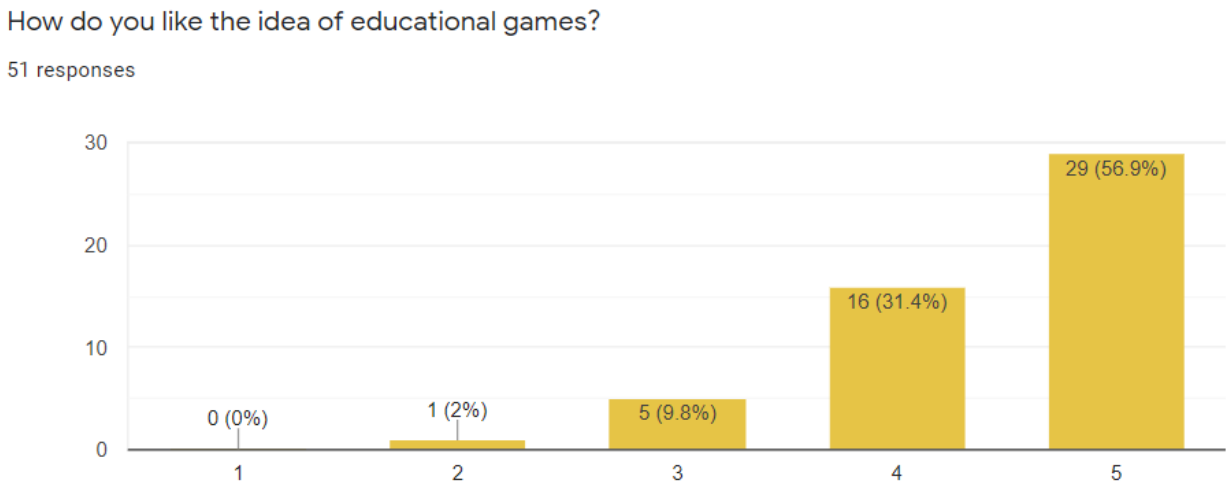

Figure 23: Survey Result 9

People rating the idea of educational games.

Appendix B

2.1 Work Breakdown Structure

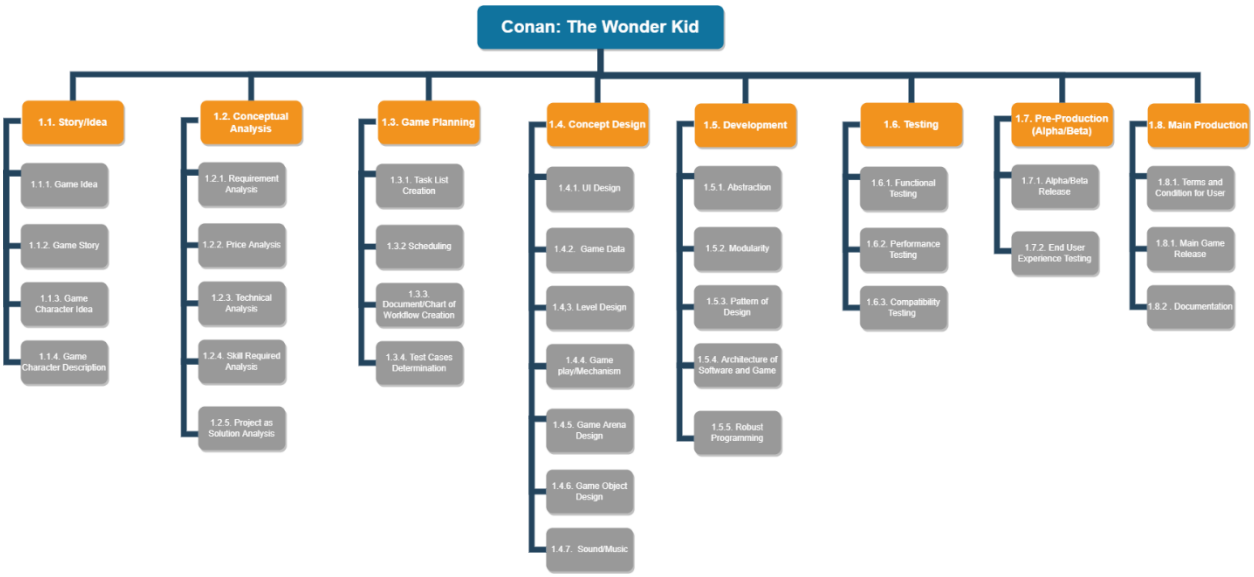

Figure 24: Work Breakdown Structure

2.2 Gantt Chart

	Conan: The Wonder Kid	Duration	Start	ETA
	Project Completion	130 days	25.11.21	06.04.22
1.	Story/Idea	10 days	25.11.21	05.12.21
1.1	Game Idea	3 days	25.11.21	27.11.21
1.2.	Game Story	3 days	28.11.21	30.11.21
1.3.	Game Character Idea	2 days	01.12.21	02.12.21
1.4.	Game Character Description	2 days	03.12.21	05.12.21
2.	Conceptual Analysis	15 Days	6.12.21	20.12.21
2.1.	Requirement Analysis	3 days	6.12.21	8.12.21
2.2.	Price Analysis	3 days	9.12.21	11.12.21
2.3.	Technical Analysis	3 days	12.12.21	14.12.21
2.4.	Skill Required Analysis	3 days	15.12.21	17.12.21
2.5.	Solution Analysis	3 days	18.12.21	20.12.21
3.	Game Planning	5 days	21.12.21	25.12.21
3.1.	Task List Creation	1 day	21.12.21	21.12.21
3.2.	Scheduling	1 day	22.12.21	22.12.21
3.3.	Document/Chart of Workflow Creation	2 days	23.12.21	24.12.21
3.4.	Test Cases Determination	3 days	23.12.21	25.12.21
4.	Concept Designing	19 days	28.12.21	15.01.22
4.1.	UI Design	15 days	28.12.21	11.01,22
4.2.	Game Data	5 days	28.12.21	01.01.22
4.3.	Level Design	10 days	28.12.21	06.02.22
4.4.	Game play/Mechanics	12 days	28.01.22	08.01.22
4.5.	Game Arena Design	15 days	28.01.21	11.01.22
4.6.	Game Object Design	10 days	28.12.21	06.01.22
4.7.	Sound/Music	6 days	11.01.22	15.01.22
5.	Development	31 days	16.01.22	15.02.22
5.1.	Abstraction	31 days	16.01.22	15.02.22
5.2.	Modularity	15 days	16.01.22	30.01.22
5.3.	Pattern of Design	10 days	16.01.22	25.01.22
5.4.	Architecture of Software and Game	20 days	16.01.22	04..02.22
5.5.	Robust Programming	16 days	31.02.22	15.02.22
6.	Testing	10 days	16.02.22	25.02.22
6.1.	Functional Testing	3 days	16.02.22	18.02.22
6.2.	Performance Testing	5 days	16.02.22	20.02.22
6.3.	Compatibility Testing	7 days	19.02.22	25.02.22
7.	Pre-Production(Alpha/Beta Release)	13 days	26.02.22	10.03.22
7.1.	Alpha/Beta Release	13 days	26.02.22	10.03.22
7.2.	End-User Testing	13 days	26.02.22	10.03.22
8.	Main Production	27 days	11.03.22	06.04.22
8.1	Main Game Release	6 days	11.03.22	16.03.22
8.1	Report and Documentation	21 days	17.03.22	06.04.22

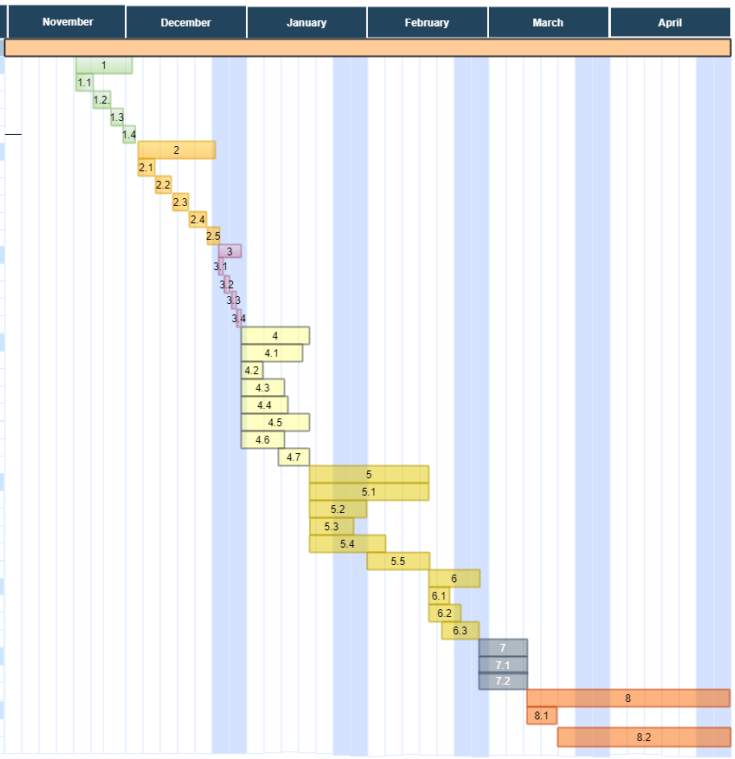

Figure 25: Gantt Chart

Appendix C

Wireframes

Wireframes are useful for a variety of things, including connecting the site's information architecture to its visual design by displaying routes between pages. Clarify how specific types of information should be shown on the user interface in a consistent manner. Determine the interface's intended functionality. The wireframe of my game is given below:

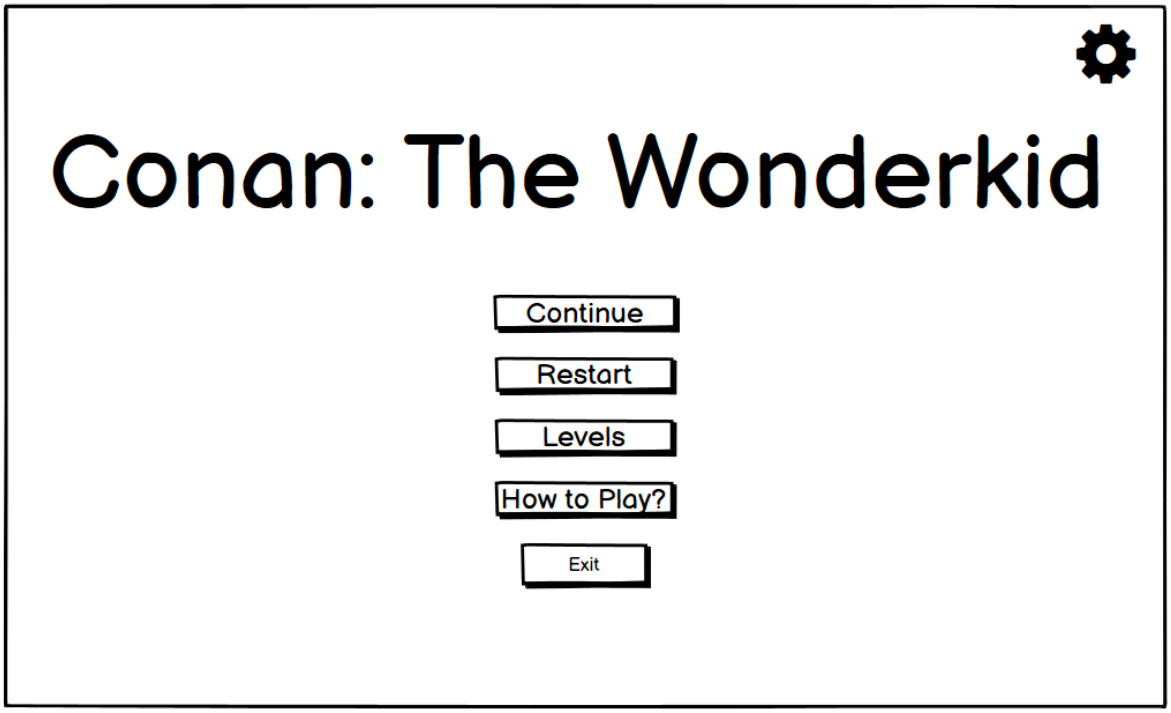

Figure 26: Wireframe of the Start

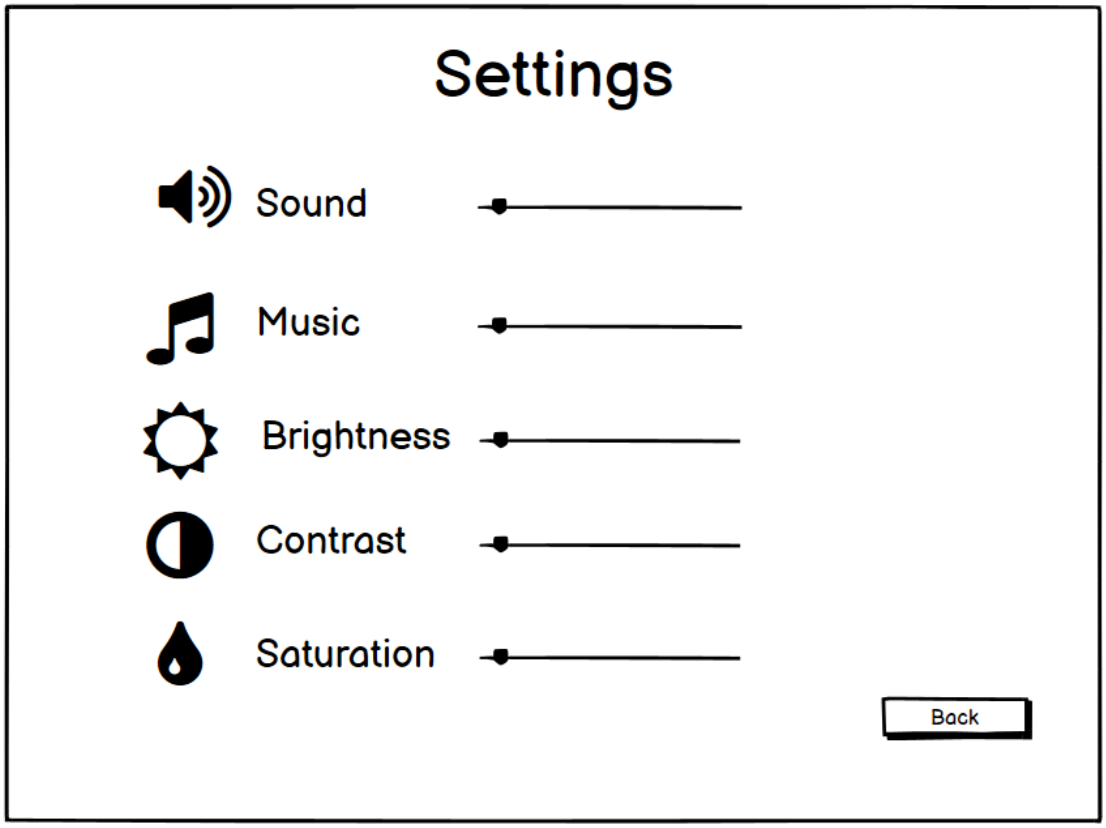

Figure 27: Wireframe of settings

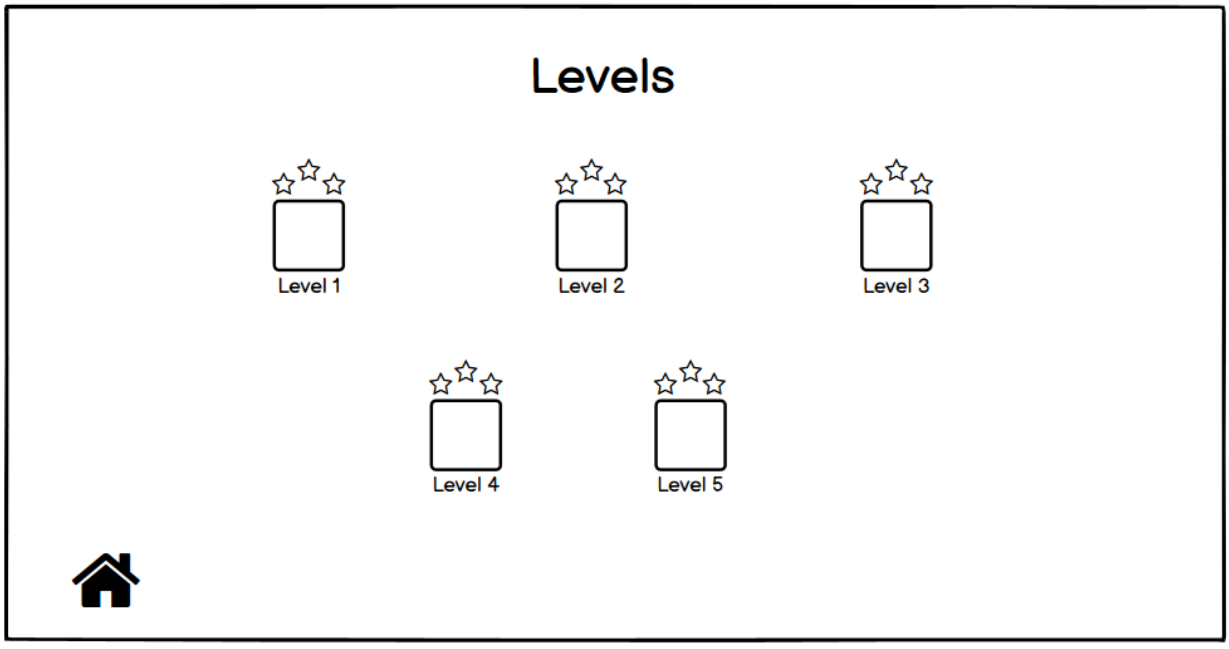

Figure 28: Wireframe for level Selection

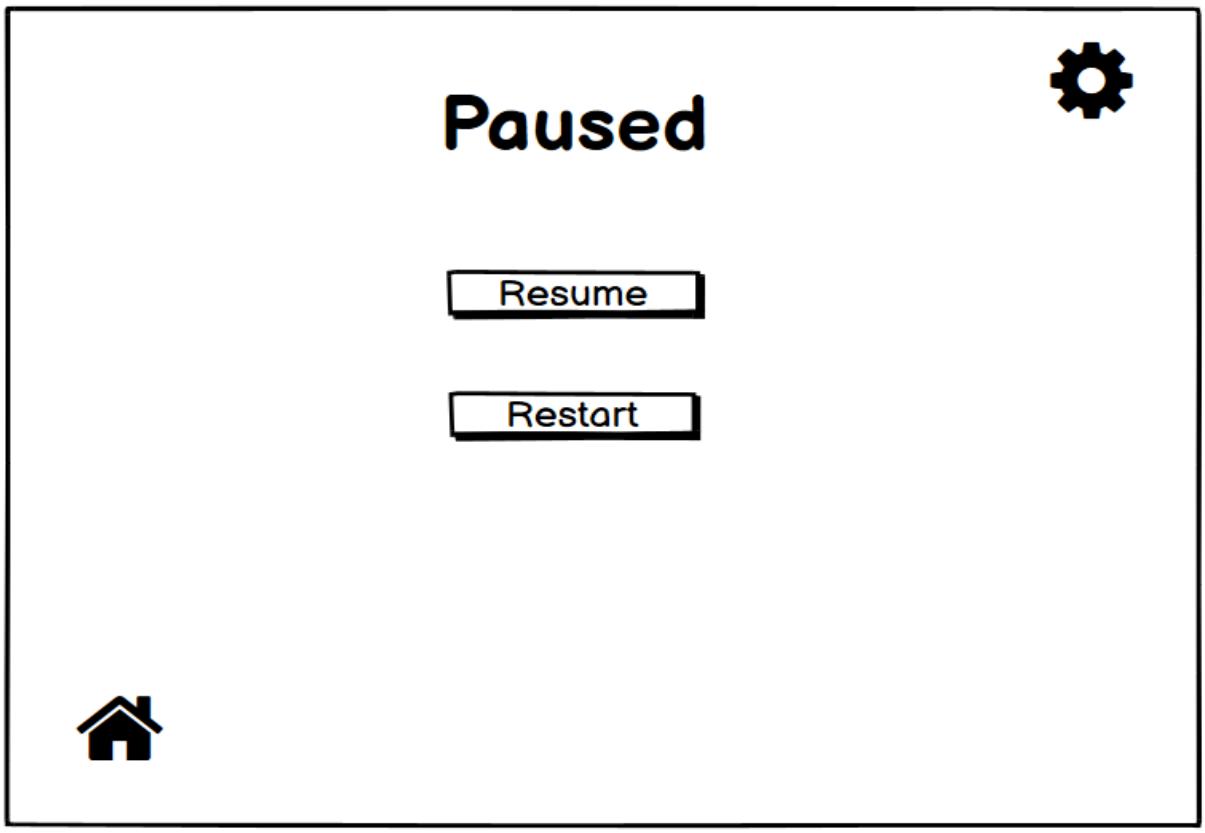

Figure 29: Wireframe for pause section

Appendix D

SRS Report

1. Introduction

A software requirements specification (SRS) is a document that describes the software system that will be produced. It lays out functional and non-functional requirements, as well as a set of use cases that define how the product must interact with users.

1.1. Purpose

Educational games are those that are meant to help individuals learn about certain subjects, broaden concepts, reinforce development, understand a historical event or culture, or educate them in learning a skill while they are playing.

1.2. Scope

The purpose of “Conan: the wonder kid” is to make enjoyable as well as educational game for the kids in grade 6 to above. In this game, kids can learn about the Newton’s law of motion and physics. Education game like this is perfect solution for the current situation where parents wants their children to study and children wants to play game.

1.3. Overview

This document is intended to explain all of the details about the overall system description, as well as the functional, non-functional, and system description. This article is divided into three sections: the first section has a quick introduction to the system; the second section contains a detailed description of the system; and the third section contains a list of references. The second section covers an overview of the system, as well as product perspectives, functionalities, user characteristics, constraints, assumptions, and dependencies, as well as requirement apportionment.

Specific needs, data and behavioral model description of the system, functional and non-functional criteria, and so on are all included in the final section.

2. Overall Description

2.1. Productive Perspective

This product is an education game which is suitable for kids that are in grade 6 and above. It is an education game related to physics.

2.1.1. System Interfaces

The system interface is a two-dimensional instructional game. This educational game was created with Unity. All of the physical materials in the game objects are inserted using the Unity engine. Unity is used for over 60% of the development process. For game and character design, I used Adobe Illustrator. To write code, Visual Studio is used.

2.1.2. User Interfaces

Users are most likely to play game through hardware (from windows or android).

2.1.3. Hardware Interfaces

Hardware that can be used are windows and android.

2.1.4. Software Interfaces

Unity

Name: Unity

Specification: For game development

Version: Unity 2019.4.29f1 (64-bit)

Source: https://unity3d.com/get-unity/download/archive

Visual Studio

Name: Visual Studio

Specification: For coding

Version: Visual Studio 2019

Source: https://visualstudio.microsoft.com/downloads/

Adobe Illustrator

Name Adobe Illustrator

Specification: For Designing game object and game characters

Version: Adobe Illustrator 2021

Source: https://igetintopc.com/adobe-illustrator-2021-free-download/

3. Specification Requirements

3.1. User Interface Requirements

Unity and Visual Studio

3.2. Hardware Interface Requirements

Windows 7 and above or android 8 and above

3.3. Use Case Diagram

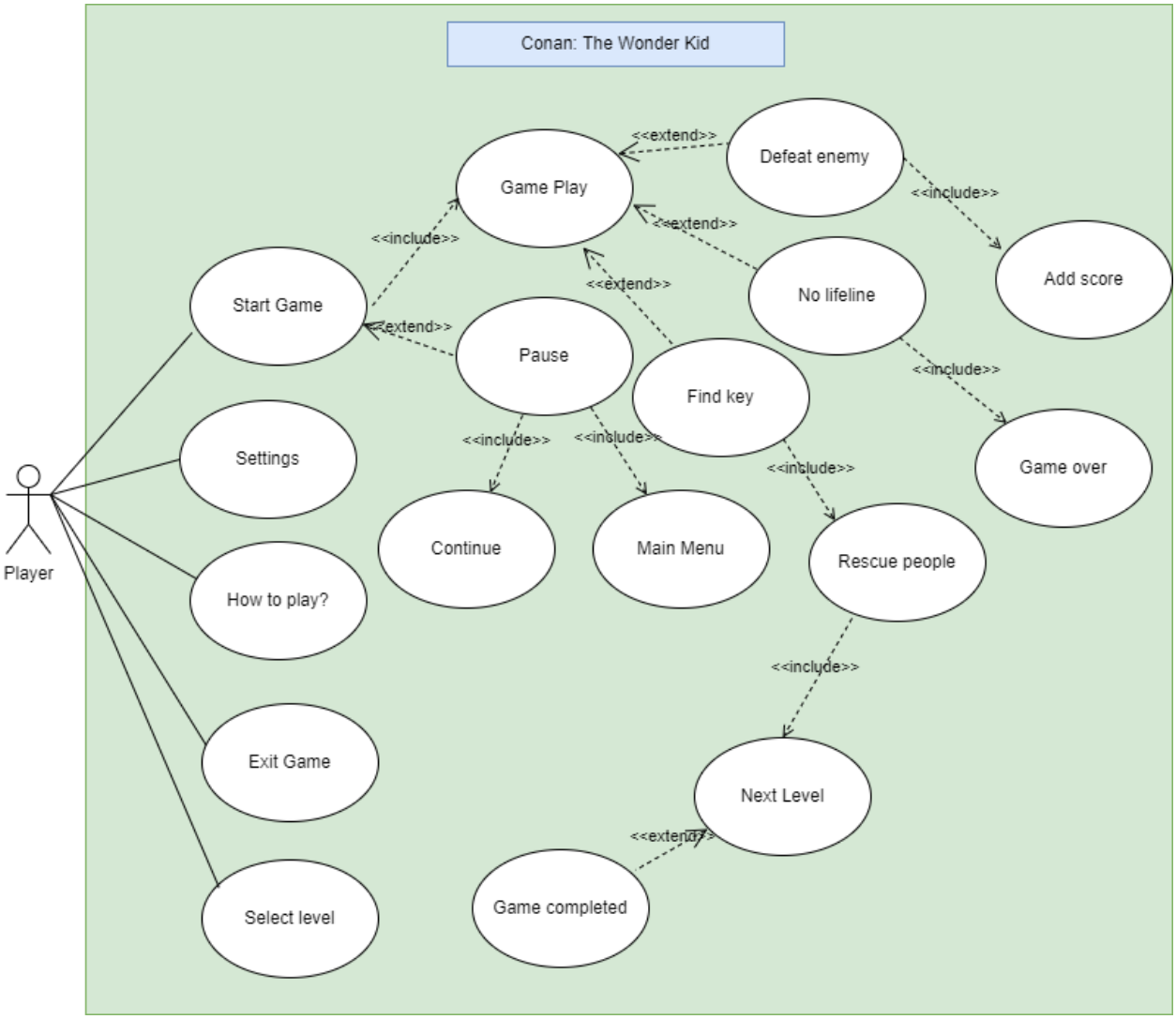

Figure 30: Use Case Diagram of player and the system

4. Software System Attributes

4.1. Reliability

- There should be no system failures.
- Game must be appropriate for grade 6 and above kid.
- The game sound must not be disturbing.
- Violence should not be used in the game.

4.2. Availability

- The game must be playable in every window 7 and above as well as android 8 and above.
- The high score of players must be stored.
- Once the player unlocks the level then it must be playable as long as the game cache is not cleared.

4.3. Security

- The game must not contain any illegal information.
- Game must not be disturbing to the children.

4.4. Maintainability

- Gameplay must be described in “how to play?” section.
- Tutorial video of game must be available.

4.5. Portability

- As the game is designed for Android devices and computers, it will operate on any of the most recent Android versions and as well as windows versions.