

CHAPTER 1

INTRODUCTION

1.1 INTRODUCTION

Techpocket is an augmented reality game which helps you to spend your time with your friends and family in a technology rich way. In the current scenario a game which grabs so much love and attention of teenagers is Block tower. This game really helps to spend time with your loved ones and you can enjoy the experience of one of the most interesting technologies called augmented reality(AR) by playing Block tower in a new way. Most of the time our generation used to spend maximum time on phones and other technological devices, and the relationship between families and friends are not that harsh as a few years before. So I'm trying to work on this to fill the space between families by using the same platform(technological devices).

1.2 PROBLEM MOTIVATION

Most of the time our generation used to spend maximum time on phones and other technological devices, and the relationship between families and friends are not that harsh as a few years before. So I'm trying to work on this to remove spaces from friends and family by using the same platform(technological devices).

1.3 PROBLEM STATEMENT

The main problem statement for this project is to build an iOS and iPad application that can help you spend your time with your friends and family in a technology rich way.

1.4 ORGANISATION OF REPORT

The report for the project is structured in the form of chapters, wherein each chapter aims to describe in detail a certain aspect of the project. The chapters are broadly divided into 4 parts - (i) Introduction (ii) Implementation & Analysis (iii) Conclusion (iv) Future Goals.

CHAPTER 2

REVIEW OF LITERATURE

Our Application is one of a kind. We have tried to develop a software which helps to play the Block tower game in a new way. Presently, we know that the Block tower is played only physically and one of the professionals needs to make it manually. If any block is missing, then it consumes a lot of time to adjust the tower. Techpocket manages this issue also as it automatically makes a new tower after the dismissal.

Block tower game available on the internet can be used to play, but these games are a normal game just help in manually designing tower by checking

constraints for the user like whether block is already removed or not so user need to think for the allotment of blocks which doesn't solve the main problem of consuming valuable time of the player.

Our application solves this problem by making the allotments itself. It works completely by itself using our self designed algorithm and automatically generates a tower for the user. User needs to give information about how many players are going to play this game. Rest is taken care of by our application.

CHAPTER 3

IMPLEMENTATION & ANALYSIS

The following chapter focuses on the implementation of the project. The requirements and workflow have been explained in the following sections.

3.1.1 REQUIREMENTS TO BUILD

The following are the software and hardware requirements for the project.

Software:

- **Programming Language: Swift** - Swift a programming language developed by Apple and Swift is used to develop apps for iOS, macOS, watchOS, and other apple ecosystems.
- **Libraries/Frameworks:**

1. ARKit - **ARKit** framework used for creating unparalleled augmented reality experiences for the apple ecosystem.
 2. Core Animation- **Core Animation** gives smooth animations without slowing down or bulky your app.
 3. **SceneKit**- **SceneKit** is a high-performance rendering engine for 3D assets.
 4. SnapKit- SnapKit is a library used to make Auto Layout in UIKit easily.
- IDE: XCode
 - Softwares:- GitHub, Draw.io

Hardware:

- Operating System: MacOS
- RAM: 8 GB

3.1.2 DEVICE SUPPORT

- iPad, iPhone

3.2 GOALS AND OBJECTIVES

- Players take turns to push a block from a tower so the block is removed from tower and make points, creating an increasingly unstable structure as the game progresses.

This receives hard as the game is going on till a participant reasons the tower to crash, that means the closing participant to have effectively located a block on the pinnacle wins.

- Augmented reality is an interactive experience of the real-world. We can experience this by playing this Tower block game.
- We are moving faster with technology. In this race we miss the relationship bonds, memories because of this virtual world but this game helps you in community bonding.

3.3 WORKING

Techpocket is majorly divided into four parts - Dashboard, Game, Score and Save&Reset.

Dashboard is a first screen of the Techpocket and it contains a maximum of information about the game like last game codable, new game button and a beautiful first screen Explicit animation. If a user taps on the new game a new coustized sheet opens to get information about how many players are going to engage with this game. At max 4 players can play at the same time.

After selection of number of players an AR alert awake and alert about Argumented Reality, how it works and what are prerequisites to play this game like in techpocket user need a plan so Argumented Reality Block of techpocket stand on that plan and user experience one of the best AR Block tower game.



Figure3.1 : Alert



Figure3.2 : Start of Game

You can feel the block tower in front of you through your iPhone or iPad and remove blocks you have to push the block which you want to remove.

Because it is one of the best libraries to experience augmented reality, Apple developed ARKit for apple developers so they can give users the best experience of augmented reality. ARkit is so beautifully coded that you can even feel the pressure difference of removing top blocks and bottom blocks.



Figure3.3 : Game Screen

Game is not completed if the points or score are not mentioned into it so I write a customise label to display the score of individual player while playing the game. Points are earned through decision making, based on users' ability to think critically and remove blocks without dismissing the whole block. Points can be used to replay the last shot again. Users can earn bonus point by removing blocks from the last row.

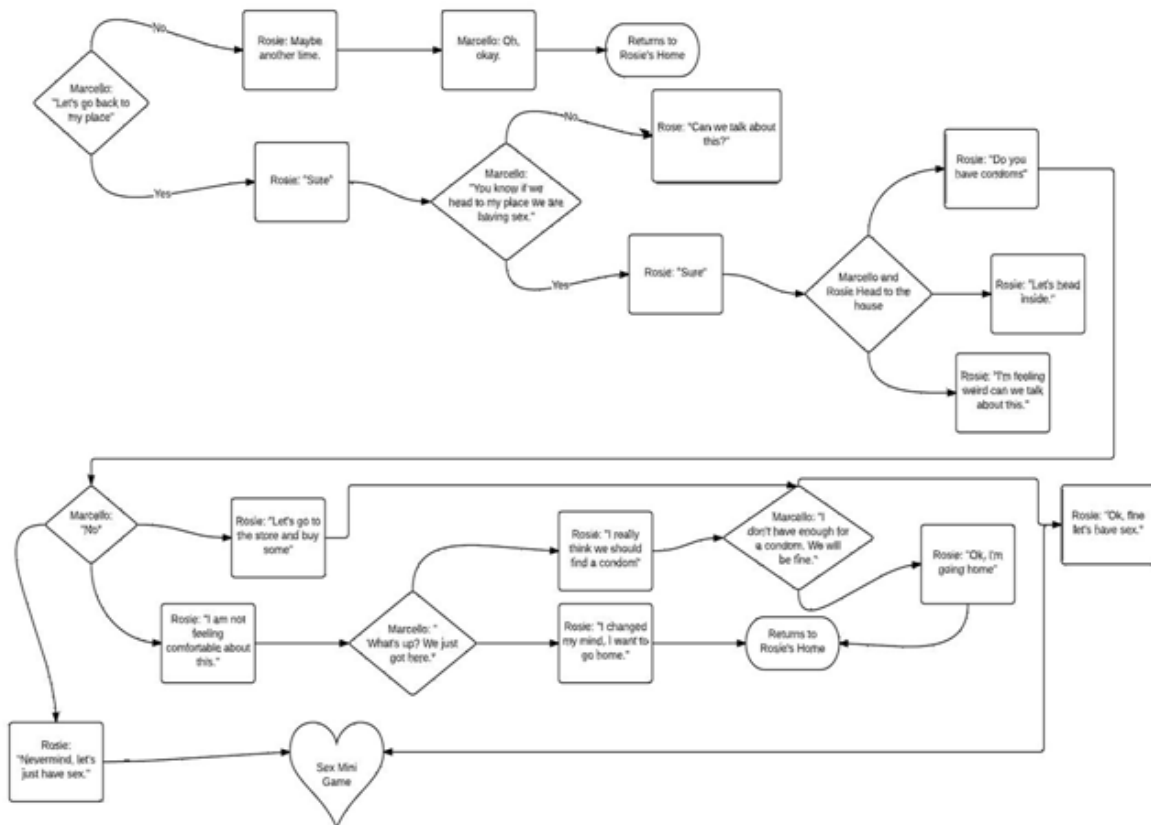


Figure3.4 : ER Diagram

3.4 BENEFITS

Improves Strategic Thinking- ‘Strategy’ is part of triumphing at Block tower, as a participant desires to pick out a selected block a good way to now no longer best maintain the tower from falling however additionally make his or her opponent’s subsequent circulate extra difficult. Strategic questioning is a crucial device for fulfillment in lifestyles, each individually and professionally, in particular for teens and adults. Improves Manual Dexterity(skill)- Manual dexterity entails the usage of the palms to carry out a complex motion fast and skillfully. This recreation is awesome for adults who need to enhance their guide dexterity. It may also assist younger kids to broaden this vital lifestyle skill.

Improves Hand-Eye Coordination- Hand-eye coordination entails the

coordinated management of hand actions with eye actions. Jenga is a recreation primarily based totally totally round coordination, wherein gamers take turns doing away with and changing timber blocks (one at a time) from a tower.

Improves Social Skills and Communication- It gives a possibility to attach and socialize with every other human being, supporting to ‘ruin the ice,’ broaden like-minded friendships or even relieve anxiety or awkwardness in social situations.

Passing the Time- Playing Block Tower is an exquisite manner to byskip the time. Perhaps you're expecting a taxi to reach or an aircraft to land. Why no longer have interaction in an amusing sport of Block tower? All you want is a small, flat floor to play! It is an amusing manner to fill a couple of minutes among elegance or painting tasks as well.

Improves Problem-Solving Skills- Block tower is an exquisite sport for growing and enhancing critical thinking. Each participant should examine the tower, determine its structural integrity, after which eliminate a block without the tower crumbling.

CONCLUSION

TechPocket is an Argumented Reality based game designed with faboulus engineering and for a great purpose. In the current scenario, the younger generation is quite busy with mobile phones and other technical gadgets all day, so the gap between family members and friends is increasing day by day. So this amazing technology rich Techpocket game helps youg generation to engage with their family members and friends and at the same time they are

interacting with future generation technology. By playing one of the most widely played games in the world Block Tower in Argumented Reality.

It offers a possibility to attach and socialize with some other human being, assisting to ‘wreck the ice,’ expand like-minded friendships or even relieve anxiety or awkwardness in social conditions and gambling Techpocket is a wonderful way to byskip the time. Perhaps you're looking forward to a taxi to reach or an aircraft to land. Why no longer interact in a laugh recreation of Techpocket? All you want is a small, flat floor to play in! It is a laugh to fill a couple of minutes among magnificence or painting tasks as well.

FUTURE GOALS

The application already has everything we intended to implement. But there is always some scope of improvement. I have two future goals for this application. First, we will add more constraints to the algorithm which will make it more robust and will help handle more edge cases. Second, I will focus on improving the user interface to make it a more serene experience for the user. Both of these additions will help take the application to a whole new level.