
SOFTWARE REQUIREMENTS SPECIFICATION

for

Game Zone

Version 1.0

**Prepared by,
Amit Thakkar (201901038)
Jigar Makwana (201901428)
Parth Prajapati (201901429)
Arpit Gohil (201901471)**

DA-IICT

October 9, 2021

Contents

1	Introduction	4
1.1	Purpose	4
1.2	Document Convention	4
1.3	Intended Audience and Reading Suggestions	4
1.4	Product Scope	5
1.5	Description	5
2	Fact-Finding Phase	8
2.1	Background Readings	8
2.1.1	Description of Readings	8
2.1.2	References	14
2.2	List of Requirements Gathered from Background Readings	15
2.3	Interviews	16
2.3.1	Interview 1	16
2.3.2	Interview 1 Summary	17
2.3.3	Interview 2	18
2.3.4	Interview 2 Summary	19
2.3.5	Interview 3	20
2.3.6	Interview 3 Summary	21
2.3.7	List of Requirements from Interviews	21
2.4	Questionnaire	22
2.4.1	Questions	22
2.4.2	Graphs of Received Responses	24
2.4.3	Results	27
2.5	Observations	28
3	Fact-Finding Chart	29
4	List of Requirements	30
5	User classes and characteristics	31
5.1	Manager/Owner	31
5.2	Player	31
5.3	Employee	31
6	Operating Environment	32
6.1	Hardware Requirements	32
6.2	Software Requirements	32
6.3	Connectivity Requirements	32

6.4	External Interfaces Requirements	32
6.4.1	Hardware Interfaces	32
6.4.2	Software Interfaces	32
7	Product Functions	33
8	Privileges	35
9	Assumptions	36
10	Business Constraints	37

1 Introduction

1.1 Purpose

This Game zone management system's SRS main objective is to provide a base for the foundation of the project. It gives us a view of "how the system works?" And "what are the users expectations?". It gives the detailed description of functional and non-functional requirements proposed by the customer.

This Game Zone Management System is designed with the hope of making all the day to day work of Game Zone automated such that one can easily manage all tasks of the game zone. The purpose of the Game Zone management system is to give the best environment for Game Developers, Organizers and online gamers as well as offline by maximizing the profit, minimizing the workload and getting improvement in performance of management.

1.2 Document Convention

The document is prepared using Microsoft Word 2019 and has used the font type 'Arial'. The fixed font size that has been used to type this document is 13pt with 1.5 line spacing. It has used the bold property to set the headings of the document. All pages except the cover page are numbered, the numbers appear on the lower right hand corner of the page. Every image and data table are numbered and referred to in the main text.

1.3 Intended Audience and Reading Suggestions

Engineers who can review project capabilities and easily understand where their efforts need to be identified to improve or add other features to it (create and write an application - set future development guidelines). Project evaluators can use this document as their basis testing strategy as some bugs are easy to find using requirements documents. In this way the testing becomes more well organized.

The document is intended for all the players, game developers Designers, Maintainers and for any person who wants to develop their game zone.

The audience going to play games online is assumed to have basic knowledge of accessing a website, surfing and knowing about its controls. Please prefer a rule book before playing a game, also read carefully the terms and conditions and take care of money transactions. This involves an element of financial risk and may be addictive. Please play responsibly at your own risk.

1.4 Product Scope

Today, Games are one of the most used modes for Entertainment same like TV, movies, Music. The culture of gaming never existed in India. It is now that we see that a potential market for games has emerged. This is because of the new generation which is not only acquainted but also equipped with digital media. Once the gaming Industry develops in India, it will grow to be one of the best markets in the world. It is also said that the gaming industry has generated great opportunities for game developers. It is growing in various platforms like mobile, PC, Game Zone etc. Our application is also based on the management of Game Cafe and Online gaming platforms.

This Game Zone Management System is designed with the hope of making all the day to day work of Game Zone automated such that one can easily manage all tasks of the game zone. This application helps the owner of the game zone to store details of all its games like name, type, Information, price of game, game duration, modes etc, the details of players like ID, game records, payment records, achievements etc and owner can also track all these details in real time with game history. It can also have multiplayer features, so that you can also enjoy various online multiplayer games in a team.

By adding some more features one can develop his own automated offline Game Zone in which Most of the work will be done by the application, so it reduces the workload and also satisfies the players and owner by its excellent performance.

One can also use our application to develop a Game store, which only takes the records of games and customers. We can also modify applications to focus on Single Game like, It also can be used in future to develop online gaming platforms like Battleground Mobile India(BGMI), Counter Strike, Dream11 using Artificial Intelligence, Machine learning, web development with application.

This application also can be upgraded in future by adding AI, ML to use in the International or National gaming tournaments like Indian Premier League (IPL), FIFA, Olympic, Kaun Banega crorepati (KBC) etc. One can also modify the features of an application to use it to easily manage small or big gaming tournaments in college, school or society in less time and less cost.

It can also help to decide the winner of a game by storing real time information of game history. It also takes care of eligibility of the player, timing duration, payment details etc. We can also upgrade this application to reduce player's traffic in the game to improve system performance. In online gaming platforms, it can also provide data security, more storage capacity, easy development, data abstraction like features.

1.5 Description

The project will be an SQL database which will be created in a modern database management system. This will allow it use the most modern features in DBMS. This will allow us to access the database through the provided GUI, pgadmin for postgres, or the CLI (command line interface), psql for postgres. So, the data can be conveniently modified or inserted into using these interfaces.

The project will have the following features for GameZone management system:

- **High Storage Capability :-** This feature is provided by postgres database system for storing Player's information, Game details, Employee's details, Game records, Payment records, leaderboard, waiting list, Account details etc. Postgres helps us to safely store, access and scale most complicated data workloads with security.
- **Managing List of Players :-** The database application will store all details of players who open their account in GameZone. The database will store the personal details of players like name, age, height, weight, contact number, address, team Id/name. (If it exists) etc. Players are allowed to view details of Games, Other Player's profile, Team's profile and their own account details and payment records. Which details of Players should be provided in a profile handled by Database Administrator or any Employee. Players can modify their details and close the account on some terms and conditions. Players are not allowed to modify other Player's personal details and account related details.
- **Content Management (Games) :-** The database application will store the details of Games like Game Id, Game's Name, Type, the mode of playing (Online/Offline), Multiplayer or Solo, Price of game, Rewards, Age constraint (if any), Height constraint (If any), weight constraint (If any) etc. Players can retrieve the details of Games. Games are managed by employees or Manager(Owner). Employee or Owner can add new game, can modify the details of game. Rules of Game are provided in Gamezone website or in gamezone as catalogue. Players are advised to read rules carefully and check term and conditions and constraints.
- **Manager :-** Here, We are assuming the manager, owner of gamezone are the same. The database application will store the details of manager like name, age, contact number, email address etc. Manager has rights to decide the salary of Employee, he can grant or revoke privileges given to employees. He can insert, manage and delete the details of players, games, game records etc.
- **Employee :-** The database application will store the details of Employees like name, contact details, age, salary, task etc. He can manage the data allowed to handle him by manager. The only administrator or manager can modify, delete or insert the details of Employees.
- **Account :-** When Player visits GameZone, he will be asked to open his account in the GameZone system. For that he has to pay some money and upload some required documents and details as per decided by the owner. After this process, one debit card will be provided to the player by gamezone. Using this debit card player can make payments and get prize money. So the Number of debit card will be stored in Account class. Account class contains details of Player ID (referenced from Player class), Account ID (Autogenerated), Debit card no. (Provided by Gamezone), Current Balance in account, Date of joining the gamezone etc. The players and Manager are allowed to see their own account's details.
- **Transaction :-** The database application will store all payment records details like Player id (Who makes payment), Game ID (For which game), Date and Time of Payment, Paid Amount etc. It will be managed by Employee or Manager of Gamezone. Others are not allowed to see payment details without permission of the manager. Players are allowed to see their own Payment records.

- Game history :- The database application will store the real time game history which includes the details like who is playing which game means Player Id and Game ID, Player's score, the player's current rank, the amount that player won or lost, the Date and Time etc. Players are allowed to see their own game history details. Employees and Manager are allowed to see the details, but are not allowed to make any change. The details will be directly inserted through game interfaces.
- Team :- The database application will store the details of Team like Team ID(provided by database), name, Game ID, Team rank on leaderboard, No of games won etc. So Players are allowed to make a team, and play multiplayer games. Players are allowed to view their own team's profile and team member's profile. Only Manager or Employee can modify this table.
- LeaderBoard :- The database application will store the details of player's rank in leaderboard, it also includes player id, game id, scores, and amount won using game history table. Players, Manager and Employee all are allowed to retrieve information on the leaderboard. But they are not allowed to make any changes.
- Queue :- the database application will store the details of player who are currently playing a particular game and also store the number of players that are playing a particular game currently. It maintains the max number players are allowed to play at a time. If the number of the players that are playing currently reach beyond capacity then they are added to the Waiting list table. It has the information about a player's status like Online or offline or in the waiting list. Using status we can manage the performance of the game by maintaining players through waiting lists. Only manager are allowed to manage the details of the queue.
- Waiting List :- The database application stores the details of players who are waiting to play a particular game. The players are arranged according to their corresponding game session time. The application will allow new players to enter according to the game which they want to play when there is any vacancy in the corresponding game. System will automatically remove his record from the waiting list and add it into the queue.

2 Fact-Finding Phase

2.1 Background Readings

2.1.1 Description of Readings

Play-Fab

PlayFab is a Backend as a Service platform focused on games that is owned by Microsoft. It is one of the most amazing backend solutions which can help developers to create, manage, launch and grow effective cloud-connected gaming applications.

- It is a service platform which is developed for live games with player accounts, virtual goods and real-money ecommerce, leaderboards and in-game chatting, analytics and more.
- It has a good integration with Game developing software like Unity, Cocos etc.
- PlayFab is a user-friendly service that has good storage implementation for user data (Player, Owner, Employee), inventory and game characters. It stores the cloud data, leaderboards, has a ability to connect various services and has a good system for creating store and domestic currencies.
- PlayFab also has a system of triggers and events to automate operations on the backend part. PlayFab's backend services reduce the barriers to launch for game developers, offering both large and small studios cost-effective development solutions that scale with their games and help them engage, retain and monetize players.
- PlayFab enables developers to use the intelligent cloud to build and operate games, analyze gaming data and improve overall gaming experiences.
- Using PlayFab
 - you can remove the challenges of building, managing, and running servers at scale with a complete back-end solution.
 - you get instantly scale dedicated multiplayer servers that deliver low latency and high reliability for real-time game play.
 - You can get multiple forms of built-in authentication to track players across devices.
 - You can quickly create leaderboards to more deeply engage players,
 - You can accelerate growth with economy services that let you create and track virtual currencies, manage stores of items, and process payments.
- If we talk about the features provided by PlayFab,

- First it provides the multiplayer services which includes Player authentication, Player data management (game state and information sharing across players), Matchmaking (Finding the opponent).
- It also provides dedicated multiplayer servers which deliver low latency and real time game play for any platform.
- It provides security by encryption, 24/7 monitoring and protection from Distributed Denial of Service (DDoS) attacks.
- It also provides cost management according to demand, Text-voice chat during game, Features required for tournaments and leaderboards, Scheduling - to reset leaderboards on a schedule so that players also can see past results, Reward management based on Decided reward and Player's rank.
- It also has a game manager portal through which you can build, configure and operate your game.
- It gives us daily reports about Owner's profit/loss and the player's profit/loss.
- Customization
- Powerful Achievement management System
- Efficient communication between players
- Real-time segmentation
- Content(Games) Management
- It also provides monetization, target player segments with personalized store offers and support payments with Xbox, Steam, Google, PayPal and more, Mint promotional coupons and virtual currencies with support for setting initial balances and optional auto-recharge. and also take care of Fraud prevention on payments.
- Testing of System- It has a feature that tests the system on a random group of players and analyzes the performance of the system.
- It has a feature of real time analytics and data management with good efficiency and consistency.

So, these are the features of PlayFab.

Casino Management System

We all are familiar with Casino. We have ever visited a casino or seen in any movie or web-series. The functionality and purpose of Casino and Gamezone (Project topic) are very similar. Let's see some requirements of the Casino management System, explained by Steve Karoul , a recognized casino consultant with 35 year of hand-on experience of the best Casino in the United States.

A Casino Management System (CMS) serves as a focal point for the day to day processing and recording of operational transactions throughout the facility. Realistically, It's very difficult to find a one single vendor who offers all of the software that any casino needs to operate and manage their facility. There is a need for a central management system which can interact and collect meaningful information from the many operational systems commonly found in today's modern casino facilities. Here there are some basic applications that should integrate with Casino

Management Software like Slot Accounting/Monitoring, Slot Ticketing, Cashless Gaming, eGames Platforms, RFID Table Monitoring, Live Point of Sale Systems, Promotional Kiosks, Surveillance and Security, Responsible Gaming, Online Internet Gaming, Third Party Check Cashing, General Ledger, and Data Warehousing etc.

- Security - The sensitive data like player's personal information and data relevant to determine game outcomes, communication between players and employees must be protected from unauthorized access at all times.
- Critical software integrity- We should ensure that the Gaming management system does not execute compromised critical software, for that system must verify the integrity of its critical software prior. The system interface devices deployed at the gaming site to communicate directly between the gaming devices. and the integrity of critical software must be safeguarded during its execution.
- Authentication- the management system must required to having authentication system, which can authenticate their Players and employee. And also take care of that they can only see the details that are allowed to them.
- Access Control - The database should include authorization, so that the casino management system must limit access to only authorized personnel for various functions. All user accounts on the System must be handled by a single individual. The System should have feature of identification and authorization.
- Records and Reporting - The System must be able to record all activities related to the player details, game details, game history, payment transactions, updating leaderboard etc.
- Slot accounting and Slot monitoring - The Slot accounting system must accurately receive, maintain and store each connected gaming device's accounting meters. The Slot monitoring system must be capable of receiving, recording, and alerting the operator in real time of all events and error condition that may impact game integrity, security etc.
- Cashless Wagering- It must accurately issue, record, maintain, validate and redeem only valid cashless wagering instruments. It must accurately identify cashable or non-cashable transactions, the player's account such as deposit funds and promotional funds and also store details of transactions. The cashless Wagering system which includes wagering accounts, must record, maintain, communicate and process all transactions associated with player's account and balance securely and accurately.
- Testing of system - It required to test the system on a decided time period to maintain performance of the system.

Sports Management System

This Sports Management System project used to manage the activities of Sports and Games. It stores many sports and games database in a single software. This software stores records of Football, Cricket, Hockey, Volleyball, Badminton, Basketball. This project can be used for college and mainly this software stores student details and selection details. Even this stores tournament details and

multiple college student details.

The goal of the Sports Management System (SMS) is to ensure that it handles the practices of multiple sports at a time. It also oversees student placement programs at the college and state levels. Users can waste less time as compared to manual paperwork on an automatic device. The device will take care of all the service operations in a fast way.

In the Sports Management System (SMS), there are 2 users, i.e. the controller and the employee. Admin supplies the employee with the username and password. It also can add or change the employee's username and password. Using this username and password to log in to the device. The first procedure is to register a pupil. Here, the employee enters all the specifics of the players, including the sport they want to compete in. Both of this information will be stored in the folder.

Next is the tournament qualification. Depending on the sport, the date of the tournament and the venue are stored in the database for further clarification. There are five different sports out there. The method also carries out the screening process at the college level and the competition at the state level. At the college level, both players are eligible to participate. Whereas at the state level, the best players will be picked from the college level list, which will also be saved in the database. Here is the modules of sports management system are listed :

- Login Registration : Multiple users can login to this system. There are two types of users, i.e; Admin and Employee. Admin has full authority of the software and Employee has limited authority. Only administrators can add new employee details.
- Student Registration : Students are competitors in the Sports Management System. This module allows user to add student details by entering College name, Student name, Date of birth, Age, Gender and Competing sports and games. Using the given information it will see the games criteria like minimum age, gender preferences, disability of players etc. Tournament : This module stores every single detail related to the tournament like tournament schedule details with Tournament sports, scheduled date and Tournament Venue.
- Game : This will show Football, Cricket, Hockey, Volleyball, Badminton, Basketball Players details, Tournament details and Photo gallery. Several players will be highlighted and the upcoming competitions will also be listed according to the same sport. The system also allows a special authority to submit pictures to the system for a specific sport for nice memories and evidence.
- Selection Procedure : The system also carries out the selection procedure at the college level and the competition at the state level. At the college level, both players are eligible to participate. Whereas at the state level, the best players will be picked from the college level list, which will also be saved in the database.
- Logout : This module helps the user to check in to the program. Further operations cannot be carried out until the user exits.

Sports management system is not only rewarding but it also helps the programmer to quickly organize the sports events and lists in short interval of time. It will be able to check anything related to sports at any time. Paper work and manual work is reduced through this system. The system is user friendly and easy to use.

Poki Playground Management

Poki has the best free online games selection and offers the most fun experience to play alone or with friends. Poki offers instant play to all Poki's games without downloads, login, popups or other distractions. Their games are playable on desktop, tablet and mobile so anyone can enjoy them at school, at home or on the road.

All features on the Poki Site are available without the need for registration by Users. No personal data (such as email addresses and phone numbers) are requested from users. Poki may collect certain electronic data (such as the User's IP address, cookies or device ID).

Poki has the best features I think because you can play free games without downloading them. Also, you don't have to register yourself just play when you want to play and It has multiplayer games. Where two players or more players can play a game.

There is also a different section of games :

- Action games
- Adventure games
- Racing games
- Funny games
- Puzzle games

They have 30 people who manage these platform games as they are not accessing player data but they use an IP address to market their platforms. They also have a privacy policy that children who are more than 13 years only can play on the Poki platform.

Battleground Mobile India

Battlegrounds Mobile India is a player versus player shooter game in which up to one hundred players fight in a battle royale, a type of large-scale last man standing deathmatch where players fight to remain the last alive. Players can choose to enter the match solo, duo, or with a small team of up to four people. The last person or team alive wins the match. It is designed to get the adrenaline rushing- BGMI is an intense game, which is so fast paced and suspenseful that it takes the player to another level of excitement, it keeps you under suspense till the last enemy is shot down. Hence it is difficult to lose your concentration even for a second. BGMI is a team game, so you can play it with your friends and discuss strategies, plan other things during the game to take the enemy down.

There are so many features in the game. Some of the best features are listed below :

- Amazing graphics and Sound Effects : The players get to experience realistic gameplay effects with either weapons, or vehicles. And, the high-quality audio and 3D sound effects, make the gameplay more immersive and intense.
- Different modes : There are so many modes in game like Classic, Arcade, Arena, VS AI, Evo ground etc. In classic mode there are many maps like Erangel, Miramar, Sanhok, Vikendi,

Karakin, Livik etc. In the arcade there are three types: Quick match (same as classic but less player and small map) , Sniper training, and War. In Arena, There is team Deathmatch, Arena Training, Gun game, Assault, Domination. Promotes fair play : BGMI has anti-cheat mechanisms which quickly catch any players trying to win from cheating or illegal techniques. This promotes a sense of unity and fair play among the players.

- Team work : The players can play with their friends by connecting through facebook or by making friends in game. It works on the principle of Team Work and Team Building. As a part of the team, you are aware of the team tactics, strategy and enemy movement. It becomes easier to survive and kill if surrounded by the enemies and can help you get ammo, med kits, etc. You can talk to your teammates and you make them aware of the next move.
- Voice and text messaging : BGMI is a multi player game, apart from sending chats to friends, you can even send voice chats to other players.
- Always come up with a new idea : The game developers always modernize when things start to get boring. For example, they have added new events like flora menace, mission ignition, anniversary etc, new weaponry like MG3-machine gun, MK12 shot gun, P90 submachine gun etc, and new maps like livik, karakin, vikendi , hanger with diverse weather and day/night options, new characters like Andy – the magician, carlo – bounty hunter etc,
- Age restriction : To be able to play Battlegrounds Mobile India, someone who is under 18 by law, will need to get express consent from parents or guardians. According to Krafon, Battlegrounds Mobile will need you to provide one of your parents' or guardians' mobile number "to confirm that you are legally eligible to play the game." The player whose age is less than 18 can play at most 3 hrs in a day.
- Realistic : BGMI has feature to play in FPP (First person perspective) and TPP (Third person perspective). It supports the UHD – Extreme graphics which makes the game so realistic.

There is an in-game currency called UC through which players can buy royal pass, purchase outfits, gun skins, crate opening, get new characters, design the guns etc. It will be harmful for people who are so addicted to this game. But the overall gaming experience is so immersive and smooth and the reason for its management system behind the game.

The game takes the information from users like nickname, email id, phone number, gender, age, country of residency, etc. to manage the whole system behind the game. The data used for making characters in game, register for E-sports events, for surveys etc. It takes some data automatically like device information (IP address, device id, device model, network type, OS version, Screen resolution, time zone setting etc.) This information is used to enhance the gaming experience. From this information the game will know that its device is good enough to play the game. It takes data of our gameplay to check whether any user is breaking any rules and regulations while playing games. Generally it is used to improve the NPCs (non – player character) game play such that it looks like real players. It takes crash reports and system activity details to solve any error or problem while playing a game. Some information is also taken from the third parties app, like when a user registers him/her self then he / she gives their gmail ID, facebook ID, twitter ID . It also takes the information about the users' purchases and transaction history.

The game stores the information about the player's statistics like how many matches the player has won or losses, what is the highest damage he/she has ever made, the number of headshots, finish/ death ratio(F/D ration) which defines the total number of players he/she has finished divided by the total match he/she has played(doesn't matter the won matches or loss matches). It also takes the information of achievements of the players and also stores the controls setting, sensitivity to the cloud.

They use the information to solve technical problems and improve the quality of service, to identify the individual players to provide game service. Technical protection against usage of unauthorized programs, to prevent inappropriate game play that could harm other players, to search player statistics and provision of leaderboard, to provide customer service by collecting and responding to inquiries etc.

Shott Game Zone

Shott is a gamezone which is located in two cities in India: Ahmedabad and Surat. In gamezone, there are games for everybody like for children, it has games that can help them enhance their gross and fine motor skills, for youngsters and families it has games that can be played with friends, cousins, siblings, parents, uncles or aunts in a group. It also has a Restaurant and Café. Everybody can indulge in the gaming atmosphere at Shott game zone and can spend a great time together to create more memories.

When we register for an Account, they ask for our contact information, including items such as name, company name, address, email address, and telephone number. They Store our data in their database. They use our information to improve and expand their website, develop new services, features and functionality based on user requirements, communicate with customers to provide updates and other information regarding their offers and all.

They follow a standard procedure of utilizing log files. These files log visitors when they visit websites. The information accumulated by log files include internet protocol (IP) addresses, browser type, Internet Accommodation Provider (ISP), date and time stamp, and referring/exit pages. These are not linked to any information that is personally identifiable. They utilize this information for analyzing trends, administering the site, tracking users' kineticism on the website, and amassing demographic information.

In Shott gamezone there are games like Go-Karting, Bowling, 360 Cricket, Laser wars, Kids City etc. There we can experience indoor and outdoor adventure fun games, virtual reality games and arcade games. They also give some cashback offers and combo of two games. They also give some prizes and rewards for completing some tasks of games.

2.1.2 References

- <https://docs.microsoft.com/en-us/gaming/playfab/what-is-playfab>
- <https://www.euroasiacasino.com/understanding-the-basics-about-casino-management-systems-cms/>

- <https://www.agco.ca/lottery-and-gaming/igaming-operators-and-gaming-related-suppliers>
- <https://www.freestudentprojects.com/studentprojectreport/projectreport/sports-management-system/>
- <https://poki.com/>
- <https://www.battlegroundsmobileindia.com/privacy>
- <https://www.quora.com/Why-is-PlayerUnknown%E2%80%99s-Battlegrounds-so-popular>
- <https://www.shott.in/ahmedabadsbr/>

2.2 List of Requirements Gathered from Background Readings

- To help the developers to create, manage, launch and grow effective cloud-connected gaming applications.
- There are real money games so they strictly need to maintain data so players don't lose their money.
- To easily manage Player, Owner, Employee data and also the game leaderboards.
- To help the developers to improve overall gaming experience.
- GMS can help to instantly scale dedicated multiplayer servers that deliver low latency and high reliability for real-time gameplay.
- With the use of a gamezone management system you can quickly create leaderboards.
- GMS can help to accelerate growth with economy services that let Developers create and track virtual currencies, manage stores of items, and process payments.
- Design a system such that anyone from anywhere can play games and also if a group of friends are not at the same place still all can play together just they need an internet.
- Reward management based on Decided reward and Player's rank.
- To easily manage Multiple games at the same time.
- To manage when people booking their slots for games like slots are not free then it will show that slots are full or avoid two people to book the same slot.
- If a player wants to update his/her information then it will not affect anyone else's data.
- Different views like one view for the player and another view for the admin who is managing the game.
- To manage tournaments who won, their past matches, points etc.
- GMS can help to easily check eligibility criteria.

2.3 Interviews

2.3.1 Interview 1

DBMS Project: Role Play Interview Plan

System : Game Zone Management System

Project Reference : DBMS/S5/T1

Interviewee : Smit Savan

Designation: Game Developer

Interviewer :

1. Amit Thakkar (Actual)
Designation: Student at DAIICT
2. Jigar Makwana (Actual)
Designation: Student at DAIICT
3. Parth Prajapati (Actual)
Designation: Student at DAIICT
4. Arpit Gohil (Actual)
Designation: Student at DAIICT

Date: 7 October 2021

Time: 15:00

Duration: 45min

Place: Google Meet

Purpose of the interview

Preliminary meeting to identify problems and requirements regarding Game Zone Management System

Agenda

- Problems with existing Game Zone System
- Strategy to Attract Players
- Gaming Payment Solutions
- Managing both Gaming modes online and offline simultaneously
- More about Multiplayer Mode
- Problems with security and any other concerns
- Follow-up actions

Documents to be brought to the interview

- Rough plan of Game Management System
- Documents relating to Gaming payment solutions

2.3.2 Interview 1 Summary

DBMS Project: Role Play Interview Plan

System : Game Zone Management System

Project Reference : DBMS/S5/T1

Interviewee : Smit Savan

Designation: Game Developer

Interviewer :

1. Amit Thakkar (Actual)
Designation: Student at DAIICT
2. Jigar Makwana (Actual)
Designation: Student at DAIICT
3. Parth Prajapati (Actual)
Designation: Student at DAIICT
4. Arpit Gohil (Actual)
Designation: Student at DAIICT

Date: 7 October 2021

Time: 15:00

Duration: 45min

Place: Google Meet

Summary of Interview

- Lack of awareness in people about Game Zone
- Poor implementation of payment security and privacy policy
- Lack of multiplayer support in games because of it is hard to implement
- Need an improvement in the performance of existing system
- Handling the power failures and system crashes to recover the data
- Poor designing of websites and lack of optimization
- Need of synchronized and secure system

2.3.3 Interview 2

DBMS Project: Role Play Interview Plan

System : Game Zone Management System

Project Reference : DBMS/S5/T1

Interviewee : Charitya Dedhi

Designation: Owner of Casino

Interviewer :

1. Amit Thakkar (Actual)
Designation: Student at DAIICT
2. Jigar Makwana (Actual)
Designation: Student at DAIICT
3. Parth Prajapati (Actual)
Designation: Student at DAIICT
4. Arpit Gohil (Actual)
Designation: Student at DAIICT

Date: 7 October 2021

Time: 16:00

Duration: 45min

Place: Google Meet

Purpose of the interview

Preliminary meeting to identify problems and requirements regarding Business Constraints

Agenda

- Problems with existing Game Zone System
- Problems with existing Game Zone System
- Need of Centralized Management System
- Initial ideas for Business
- Software and Hardware requirements
- Business Constraints
- Follow-up actions

Documents to be brought to the interview

- Rough Building plan of Game Zone
- Current System Manual

2.3.4 Interview 2 Summary

DBMS Project: Role Play Interview Plan

System : Game Zone Management System

Project Reference : DBMS/S5/T1

Interviewee : Charitya Dedhi

Designation: Owner of Casino

Interviewer :

1. Amit Thakkar (Actual)
Designation: Student at DAIICT
2. Jigar Makwana (Actual)
Designation: Student at DAIICT
3. Parth Prajapati (Actual)
Designation: Student at DAIICT
4. Arpit Gohil (Actual)
Designation: Student at DAIICT

Date: 7 October 2021

Time: 16:00

Duration: 45min

Place: Google Meet

Summary of Interview

- Preliminary meeting to identify problems and requirements regarding the gamezone.
- According to the situation, how we can enhance the profit.
- Financial position of owner.
- How much he will be able to invest for the gamezone.
- How should we marketize our gamezone? What way should we use like youtube ads, TV ads or posters etc.

2.3.5 Interview 3

DBMS Project: Role Play Interview Plan

System : Game Zone Management System

Project Reference : DBMS/S5/T1

Interviewee : Ronak Jethava

Designation: Member of Game Zone

Interviewer :

1. Amit Thakkar (Actual)
Designation: Student at DAIICT
2. Jigar Makwana (Actual)
Designation: Student at DAIICT
3. Parth Prajapati (Actual)
Designation: Student at DAIICT
4. Arpit Gohil (Actual)
Designation: Student at DAIICT

Date: 7 October 2021

Time: 17:00

Duration: 45min

Place: Google Meet

Purpose of the interview

Preliminary meeting to identify problem regarding existing Game Zone system and Demands of Players

Agenda

- Problems with existing Game Zone System
- Problems with existing Game Zone System
- Ideas to Improve the performance of existing system
- Follow-up actions

2.3.6 Interview 3 Summary

DBMS Project: Role Play Interview Plan

System : Game Zone Management System

Project Reference : DBMS/S5/T1

Interviewee : Ronak Jethava

Designation: Member of Game Zone

Interviewer :

1. Amit Thakkar (Actual)
Designation: Student at DAIICT
2. Jigar Makwana (Actual)
Designation: Student at DAIICT
3. Parth Prajapati (Actual)
Designation: Student at DAIICT
4. Arpit Gohil (Actual)
Designation: Student at DAIICT

Date: 7 October 2021

Time: 17:00

Duration: 45min

Place: Google Meet

Summary of Interview

- Preliminary meeting to identify problems regarding the existing Game management system and to know about the player's requirements from the Game management system.
- His experience and how we can enhance their fun through games.
- An overview of the gamezone from a member perspective.

2.3.7 List of Requirements from Interviews

- Solutions of existing problems in Game Zone system
- Use social media platforms for marketing of product.
- Accept all type of payment methods like G-pay, PhonePay, Paytm etc.
- Need to increase the membership price for more profit.
- Offer great customer service.
- Give exciting offers to increase the member
- Try to add/Update new games for more fun
- Remove bugs and glitches from games for better experience.
- Replace the under rated games from the system.

2.4 Questionnaire

2.4.1 Questions

1. Select your Age - group

- a) < 13
- b) 13 - 18
- c) 18 - 25
- d) > 25

2. Height

3. Weight

4. Have you ever visited a Game Zone ?

- a) Yes
- b) No

5. Which game mode do you like ?

- a) Online
- b) Offline

6. What are your favourite game genres ? (You can select multiple answers)

- a) Adventure
- b) Racing
- c) Puzzle
- d) Action
- e) Arcade

7. How frequent do you visit the Game Zone ?

- a) Once in a week
- b) Once in a month
- c) Once in 3 months
- d) Once in 6 months
- e) Once in a year

8. How much are you willing to pay for a game ?

- a) < 100
- b) < 200
- c) < 500

- d) < 1000
- e) Any price if game is worth it

9. What are your favourite gaming platforms ? (You can select multiple answers)

- a) Mobile
- b) PS5
- c) Xbox
- d) PC

10. Which type of game do you like to play ? (You can select multiple answers)

- a) Solo
- b) Multiplayer

11. Why do you play games ?

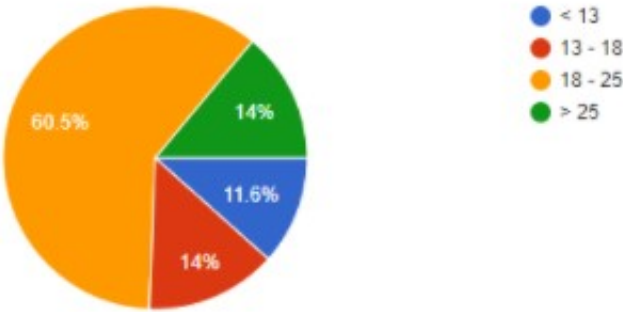
- a) Have Fun
- b) Stress relief
- c) Win Prize

12. Anything you want to say about the Game Zone

2.4.2 Graphs of Received Responses

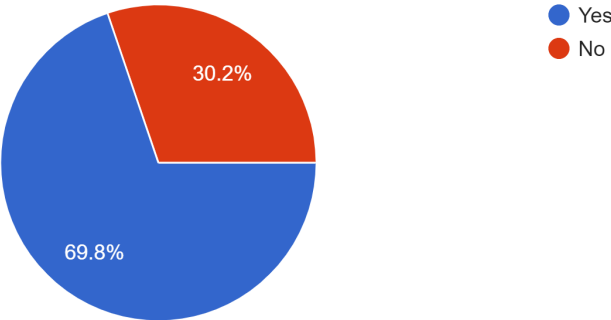
Select your Age - group

43 responses



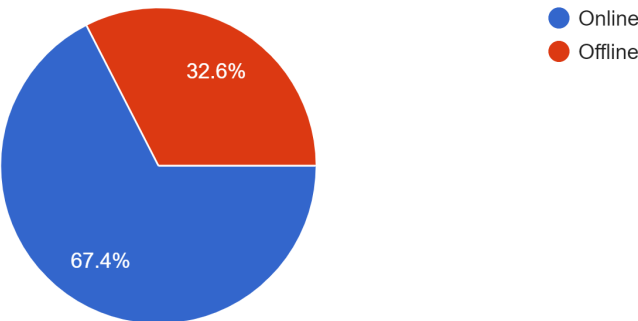
Have you ever visited a GAME ZONE?

43 responses



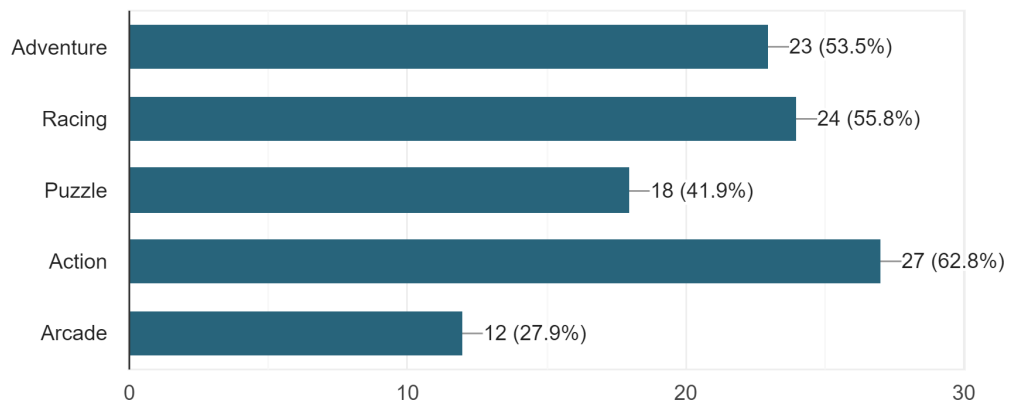
Which game mode do you like?

43 responses



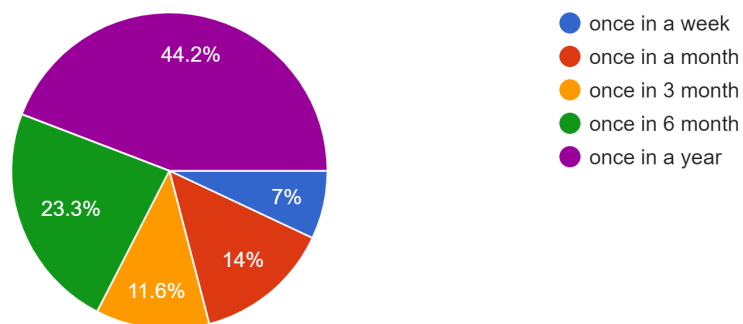
What are your favourite game genres?

43 responses



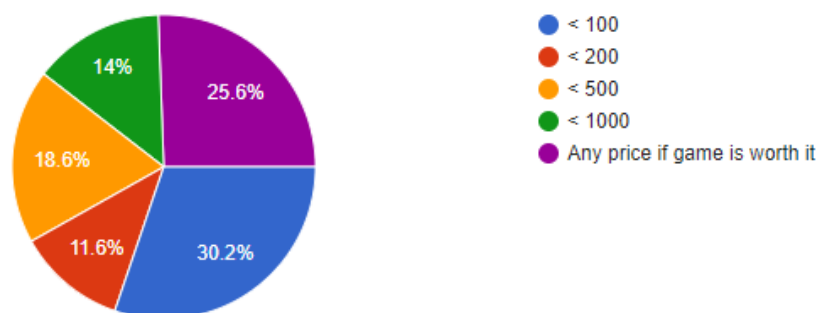
How frequent do you visit the GAMEZONE?

43 responses



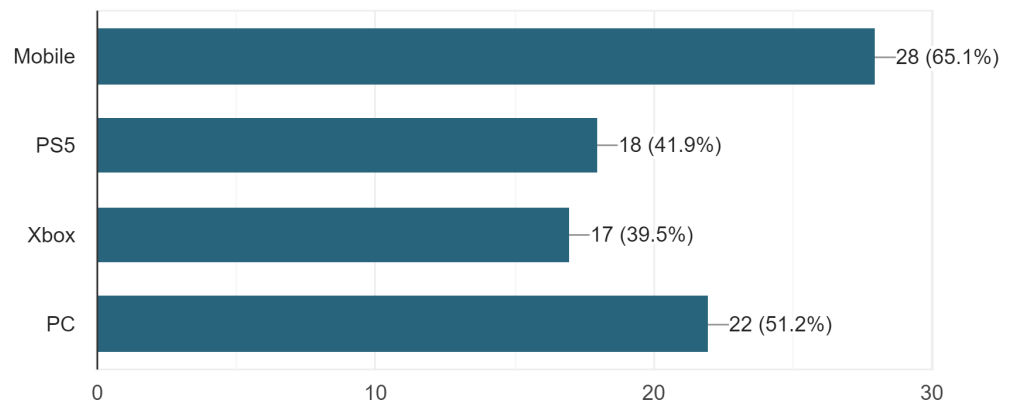
How much are you willing to pay for game?

43 responses



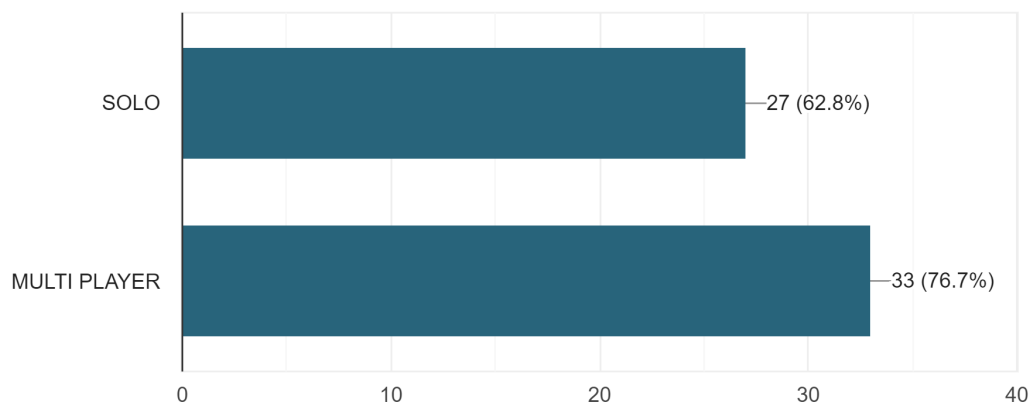
What are your favourite gaming platforms?

43 responses



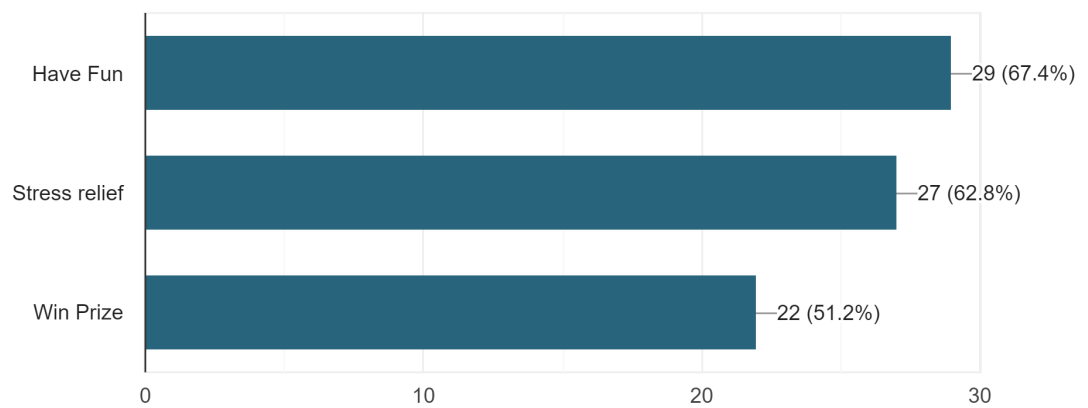
Which type of game you like to play?

43 responses



Why do you play games?

43 responses



2.4.3 Results

From the Game Zone Management System Survey we have observed following :

- The majority of people whose age is between 18 to 25 are playing games very frequently. The age below 13 and above 25, there are a few people who have interest in playing games.
- Majority of the population has visited the Game Zone. That means most people are aware of the Game zone.
- Most people are playing online games. Because it can play from anywhere, you can connect with other players and communicate with them, unlimited players are playing so there are a lot of competitions and more challenges whereas in offline gaming there are fewer challenges.
- Nowadays the action has become entertainment for everyone. In movies, TV series, sports, games etc. Most people like to play action games. After the action games, people like adventures and racing games.
- Most people visit the Game Zone once a year. Because everyone has gaming platforms like Mobile, PCs. So people avoid going to Game Zone and play games with their mobile and PCs. That is why Mobile and PC have become the most used gaming platforms nowadays.
- Majority of people are playing multiplayer games because these games can be played with friends with voice and text messaging.
- Most people play games for fun and to remove the stress and tensions.

2.5 Observations

DBMS Project: Role Play Interview Plan

System : Game Zone Management System

Project Reference : DBMS/S5/T1

Observed by :

1. Amit Thakkar (Actual)
Designation: Student at DAIICT
2. Jigar Makwana (Actual)
Designation: Student at DAIICT
3. Parth Prajapati (Actual)
Designation: Student at DAIICT
4. Arpit Gohil (Actual)
Designation: Student at DAIICT

Date: 7 October 2021

Time: 15:00

Duration: 45min

Place: Google Meet

Observations :

- Lack of awareness in people about Game Zone
- Improper planning and data management
- Need an improvement in the performance of existing system
- Need of investors and Developers to enhance the security of system
- Need to meet the user's requirements
- Need to optimize the outdated websites and its designing
- Need to add new features in offline mode of gaming because of least number of offline players.
- Proper managing of waiting users.

3 Fact-Finding Chart

Objective	Technique	Subject	Time Commitment
To understand the working of Game Zone Management system	Background Reading	Articles, Websites, Videos	2 days
To establish business objectives and agree on likely scope of new system	Interview	Business development executive	1 hour
To identify the problems in the current system and to establish the additional requirements	Interview	Game developer	1 hour
To understand the perspective of players about system concerns and requirements	Questionnaire	College Students	2 days
To determine the features of the system	Questionnaire	College Students	2 days
To follow up development of database and website	Observation	Game Developers	1 hour

4 List of Requirements

- High storage capability to store the all data.
- Player Authentication techniques to track the players across devices
- Requirement of Economical services so that owner can create and track virtual currencies, manage stores of items an process payments.
- data security, encrption, 24/7 monitoring and protection from cyber attacks.
- Powerful Content Management System, Achievement management System, Reward Management.
- Secure Payment System, that also provide monetization with personalized offers and support payments on many payment applications. Mint promotional coupons and virtual currencies with support for setting initial balance and optional auto-recharge.
- Good access control and authorization that limit access to only authorized personnel for various functions.
- Slot accounting and Slot monitoring
- Testing of system to know needed improvements in system and ensure about working of system
- Remove bugs and glitches from games for better experience.
- Optimize the game graphics such that low end device can support.
- Give exciting updates on given periods so people can enjoy to play games.
- The games must have Anti cheat mechanism so the game play will be fair for everyone.
- Eligibility criteria should be followed in each games.
- Data recovery management in case of system crashes or power failures.

5 User classes and characteristics

There are mainly 3 type of Users that can use our application:

5.1 Manger/Owner

Manager/ Owner/ Administrative - Manager can retrieve, modify and manage the information of their employees, players, games. He decides the salary of employees, price of games, availability for playing games, capacity, duration of playing etc. He can give employees the permission of retrieval, modification and deletion in the database. This application provides many features to help him manage all tasks efficiently.

5.2 Player

Player - Players can open their account in our gamezone, can enjoy various types of solo, duo or multiplayer games and win exciting rewards. Players can see their own profile, their team's profile and team member's profile and also modify some allowed details. Players are allowed to view other player's details on some conditions. Players also can retrieve the details of the game and also can play the game on some conditions. Players are allowed to do cash payments, payment records will be saved in the database and players are allowed to retrieve information of the payment records. Players can view the leaderboard. All games have age, height, weight constraints, So all players who satisfy these constraints can play games. We have distributed the players based on their characteristics.

- Play for Stress Relaxing
- Play for fun
- Play to win money

5.3 Employee

Employee - Manager / Owner of Gamezone can employ the persons to manage some important tasks. Employees have rights to retrieve information of players, games, game history and also can perform modification on allowed game details. They are employed to manage achievements, real-time game history, Player's traffic management, Game performance etc. Managers can give rights to employees to perform certain tasks, and employees make the work of managers easier.

6 Operating Environment

6.1 Hardware Requirements

Intel i5 processor or Android 5.0 or higher
Hardware equipments for games

6.2 Software Requirements

Windows10 or Android OS
Windows/Unix based server that supports PostgreSQL

6.3 Connectivity Requirements

Wi-Fi or Mobile Internet connectivity

6.4 External Interfaces Requirements

6.4.1 Hardware Interfaces

The hardware interface required for the user to retrieve the data from the server in which the web portal is hosted mainly involves a server and a personal pc connected through a network interface.

6.4.2 Software Interfaces

The complete user data is stored in the database and the information is accessed by the user through a web browser enabled device. It may also use game interfaces to directly take real time game-history details from games.

7 Product Functions

- Basic functionalities

Players, employees and managers can perform Insertion, data retrieval, Modification and deletion according to privileges given to them. Some functionalities are automatically managed by postgres database system like Transaction managements, Integrity constraints, concurrent access, Data consistency and security, Authorization, Scalability, Data backup and restore, fraud prevention on payments etc.

- Data abstraction

The application will provide the data abstraction using view through which users can not view the details that are not relevant to them. Like Players can't see other player's payment records or personal details etc.

- Eligibility Constraints

Every Game has some age/height/weight constraint for players. Players are required to fulfill all eligibility criterias to play the game. These eligibility constraints are automatically handled by our database system.

- Updation on Leaderboard

As discussed in the description, the database will store the real time game history in the game history table, which includes the information of the scores of players at a given time in a particular game. According to the score given in the game history table, the system will update the leaderboard in real-time.

- Waiting list Management

The database application will store the details of player who are currently playing a particular game and also store the number of players that are playing a particular game currently. It maintains the max number players are allowed to play at a time. If the number of the players that are playing currently reach beyond capacity then they are added to the Waiting list table. It has the information about a player's status like Online or offline or Waiting. Using status we can manage the performance of the game by maintaining players through waiting list.

The database application stores the details of players who are waiting to play a particular game. The players are arranged according to their corresponding game session time. The application will allow new players to enter according to the game which they want to play when there is any vacancy in the corresponding game. System will automatically remove his record from the waiting list and add it into the queue.

- Reward management

Manager/Owner has rights to decide rewards for games. The system will check the rank of the player in the corresponding game from the leaderboard and add the reward money into the player's current account balance.

- Multiplayer Mode

The application has multiplayer games on the system. Players can form a team with their friends and enjoy multiplayer games. The application will store the team details in the “Team” table.

8 Privileges

- Manager/Owner

Manager can retrieve, modify and manage the information of their employees, players, and games. He has a privilege to decide the salary of employees, price of games, eligibility criteria for playing games, Rewards for Game, capacity, duration of playing etc. Manager can grant any privilege to Employees and also can revoke the privileges from Players and Employees. He can retrieve the information of all payment records, but can't modify it.

- Employee

Employees have rights to retrieve, modify the information of players, games, game history, leaderboard etc according to the privileges given to them by Manager. They are only allowed to manage offline games.

- Players

Players can see their own profile, their team's profile and team member's profile and also modify some allowed details. Players are allowed to view other player's details allowed by Manager or Employee. Players also can retrieve the details of the game and also can play the game if they satisfy eligibility criteria. Players are allowed to do cash payments, payment records will be saved in the database and players are allowed to retrieve information of the payment records. Players can view the leaderboard. Players are not allowed to perform modification or deletion in the system.

- Waiting list Management

This task is done automatically by the database application. But manager can increase the capacity of a particular game. Only Manager has permission to retrieve the information of the queue and waiting list. No one can modify or delete records from the waiting list and queue.

- Updation of Leaderboard

All Players and Teams are allowed to view the leaderboard. The update on the leaderboard will be done by the application. No one is allowed to perform modification or deletion on it.

- Team

Players are allowed to make a Team and enjoy various multiplayer games. Team members can retrieve or modify the details of their own team.

9 Assumptions

- It is assumed that the database will work efficiently.
- It is assumed that the database will be updated every time.
- All players gave permission to store their data.
- The Details provided by Players are right.
- All persons have an active data plan and access to the internet.

10 Business Constraints

- The database has detailed information about players, winners, employees and hence must be secured properly.
- The database should be regularly updated and a backup of updated data should be available to the concerned authorities.
- Data should not get corrupted in case of system crash or power failures.
- Creation of digital infrastructure, good internet connection and fast accessible database server that can handle large amounts of traffic at a time.