Software Requirements Specification
for
Digital Video Game Distribution Database

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1.Description of the Case Study.

1.1 Purpose

➔ Nowadays, many developers are creating digital video games, and they want to publish them on some attractive platform so that developers can handle their games, access different types of information, and improve their games; so our primary purpose is to create a database for this type of platform.

➔ As Similar to the above, users also want to play many games, so if we provide such a platform, they come to our platform and are able to buy and play different games on the platform and enjoy them without any disturbance.

1.2 Intended Audience and Reading Suggestions

➔ We make this database system for teenagers, adults, and children who love playing games. Nowadays, gamers love to compare each other's achievements, so this database will help them record their achievements. This database will be helpful for game developers who can upload their games to our website so that everyone can play and enjoy them.

1.3 Product Scope

➔ We want to create this database to manage users' account information and the prices of games and maintain all information about games and users so that we can properly keep all the information. This will help users to record their game data and also achievements in the game. This will provide a big help to game developers so that they are able to see how many users bought their game and also they are able to see users' reviews on the game. Here users can also compare their achievements with their friends and see their rank among friends and global level.

1.4 Description

➔ We make this database for game developers. This will help them see how many users buy their game, and developers can see users' reviews on the game. Also, this will allow users to maintain their game data and achievements, and Our database will also keep the records of game prices and details about games like who created this game, what are the requirements of pc to play this game, etc.

➔ We make this database also for users who are going to play games and purchase at our platform.For this we will make a user account in our database and User will login through their password. They are also able to make their friends list and able to compare their achievements with each other. Also they are able to see system requirements so that they are able to choose which game they want to buy. Also, we are providing a filtering option so that users are able to filter the game

➔ We are going to make user_id and user_name so that we are able to uniquely identify them. so that we can also know which person is which. according to their id we are able to save their information like which game they bought their payment_id, friend_list, their games, age, etc.We are also give the rank list so that they are able to see their among their friends and also we are giving them score so that they are see their score.With the use of debit card user are able to purchase a game.Here we also provide a payment_id and time that shows when users buys game.We also store the debit card number so that this will help user to buy a game.We are also going to store user’s country,pincode and city.

➔ We are also going to make developer_id and developer_name so that we are able to know that this person is a game developer. Using developer_id we are able to save which game they published on our platform,details about the game(like: publisher company, requirements, release date, purchase date etc.), price they provide for their game, their game achievement etc.

➔ We are also going to make a game entity. In this entity we are storing information about games like game_id,game_name,game_type etc so that users are able to see these details and make their decisions whether they want to buy or not.

➔ We are going to make a separate relation for debit card details for users so they are able to purchase a game easily. In this table we are going to add card_number, user_id etc.

➔ We are also going to arrange a tournament so users are going to participate in the tournament and try to win the prize.One user is able to participate in multiple tournaments.Multiple tournaments were participated by multiple users.

➔ Here also the person that contains the employee and manager which manages the database or who created this database.Here also managers manages employees which means that 1 manager can manage multiple employees. Also employees are going to handle the user's account if there are any queries with the user's account then employees are able to handle those queries.

➔ We are also going to make a game score entity. In this entity we are going to store the user's game rank and score in which game.Here multiple users can have multiple ranks in different games.Also the same game can be played by multiple users so the users have their rank in the same game.

- **The relation that we are planning to implement for this system**

1. **User:** This entity contains the information about the user like user_id,user_name,country,city,pincode,mobile number,U_age and passwords. Here users are able to play multiple games. Users are able to participate in multiple tournaments and users use their debit card information for purchasing the game.

2. **Developer:** This entity contains information about developers like developer_id,developer_name,D_age.developers are able to develop multiple games.

3. **Game:** This entity contains information about games like game_id,game_name,game_type,age_rest(restriction),rate. Same games

are multiple users able to play also the many games are developed by multiple developers and Only one game can be bought on one payment_id.

4. **Debit Card:** This entity contains information about Debit Cards like debitcard_id,balance. Users can use debit card information to purchase a game.(users can only have one debit card or only one debit card for one user).payment uses debitcard_number to identify which game they bought.(With the same debit card users can purchase multiple games.)

5. **Tournament:** This entity contains information about tournaments like tournament_id,tournament_name,tournament_type,prize. Same tournament can be played by multiple users.

6. **Manager:** This entity contains information about managers like manager_id,manager_name. Also managers manage employees.One manager can manage multiple employees.

7. **Employee:** This entity contains information about employees like employee_id,employee_name.Here employees handle the user's account.

8. **Payment:** This entity contains information about payments like payment_id,time. Only one payment_id for one purchase by debit card.We are able to identify with the payment_id that which game is bought by the user.

9. **Game_score:** This entity contains information about gamescore like rank and score. Multiple users are able to play multiple games so thay have multiple rank and score and one game is played by multiple users so they have different ranks.

2. Fact-Finding Phase

2.1.1 Reading and Description

- ➔ We referenced our database from epic games. Here we saw that users can see their achievements and compare with other users. From this we decided to make a relation which contains the list of user friends and their achievements.
- ➔ Here we also saw all different types of information about games in a particular way so we decided to make a relation that contains all information about games. So that user can decide which games they want to buy or which game is more suitable for them.
- ➔ Here we saw that there is a detailed description and also a review system about each and every game so this will help game developers to know about the game and its bugs so they are able to fix these bugs and improve their games. Because of this we decided to make a relation that contains reviews for each game.
- ➔ Here we also saw that one section which tells about a particular games system requirement so if you don't have those system requirements then you should not buy those games. Because of this we decided to make a relation that contains requirements for games.

2.1.2 References

- ➔ https://store.epicgames.com/en-US/
- ➔ https://store.steampowered.com/

2.1.3 Combined Requirements gathered from the readings

- ➔ A well-functioning and Organized Database management system is required to maintain and update all the information about users, users friends list, about games, etc.
- ➔ A good and easy to use User Interface is required so that users can easily access information about games required without having to know much about the actual implementation of the system.
- ➔ System structure and functions should be implemented in such a way that it

ensures faster and better performance.

➔ We get an idea of which functionalities we must have to add in our system for the ease and convenience of users and game developers.

Functionalities like

- ➢ To provide concurrent access
- ➢ To store user's statistics
- ➢ To maintain a user's friendliest
- ➢ To provide a list of games
- ➢ Maintain data about game

2.2 Interview/s

2.2.1 Interview plan

ITSolutions: (Roleplay) Interview Plan

System: Digital Video Game Distribution Database

Interviewee:

1) Name: Ramesh Patel (Role Play)

a. **Designation:** Video Gamer

Interviewer:

1) Naman Patel Designation: Database Developer

2) Kenil Koshiya Designation: Database Developer

Date: 25-09-2022 **Time:** 16:00

Duration: 45 minutes **Place:** Online - Google Meet

Purpose of Interview:

Preliminary meeting to identify problems and requirements regarding development of a Digital Video Game Distribution Database.

Agenda:

- ➔ About the needs and complaints of the users and game developers and how you handle those issues.
- ➔ About which types of games the user likes to play.
- ➔ User statistics and details of the users.

Document to be brought to the interview

- ➔ Documents regarding the users' current needs.

- ➔ A rough plan of user requirements.

Result of the interview:

- ➔ The user interface of users must have to be good enough.

- ➔ The backup of the database will be taken at regular intervals so that lost data can be recovered.

- ➔ Improvements in the Web will be made according to the feedback from users.

- ➔ There should be a proper system to store the users details. Like Data redundancy. So that Users don’t have to enter all their details every time.

- ➔ We have to provide a friend list and achievements.

- ➔ Our main priority should be the user’s details. We have to provide security for this so none of their data will be leaked.

- ➔ We have to provide a proper search system so that user can filter their games in instance

2.2.2 Interview plan

ITSolutions: (Roleplay) Interview Plan

System: Digital Video Game Distribution Database

Interviewee:

1) Name: Mahesh Patel (Role Play)

Designation: Game Developers

Interviewer:

1) Naman Patel Designation: Database Developer

2) Kenil Koshiya Designation: Researcher and Business Development

Date: 26-09-2022
Time: 16:00
Duration: 40 minutes
Place: Online - Google Meet

Purpose of Interview:

Preliminary meeting to identify problems and requirements regarding development of Digital Video Game Distribution Database.

Agenda:

- ➔ To know the problems about game developers so that what type of improvement we can make to handle our database.
- ➔ Current procedures regarding the Development of the Web and security of the system and solutions against cyber attacks.
- ➔ System requirements for the game.

Document to be brought to the int]erview

➔ Initial plan of building a database of Digital Video Game Distribution

➔ Documents regarding the current needs of Game developers

Result of the interview:

➔ Security will be the most important aspect. So the non-authorized users will not be able to access important information.

➔ Database shall provide complete data on subscriptions of video games.

➔ The backup of the database will be taken at regular intervals so that lost data can be recovered.

➔ Improvements in the Web will also be made according to the feedback from Game developers.

➔ We have to maintain information about the game. Like game release date, size of the game, details of game publishers, etc.

➔ We have to design an attractive user interface for the video game.

➔ Feedback from the users will be taken at regular intervals of time, and improvements will be done to the system accordingly.

➔ We must maintain consistency and correctness in purchasing different games and which game is bought by which user.

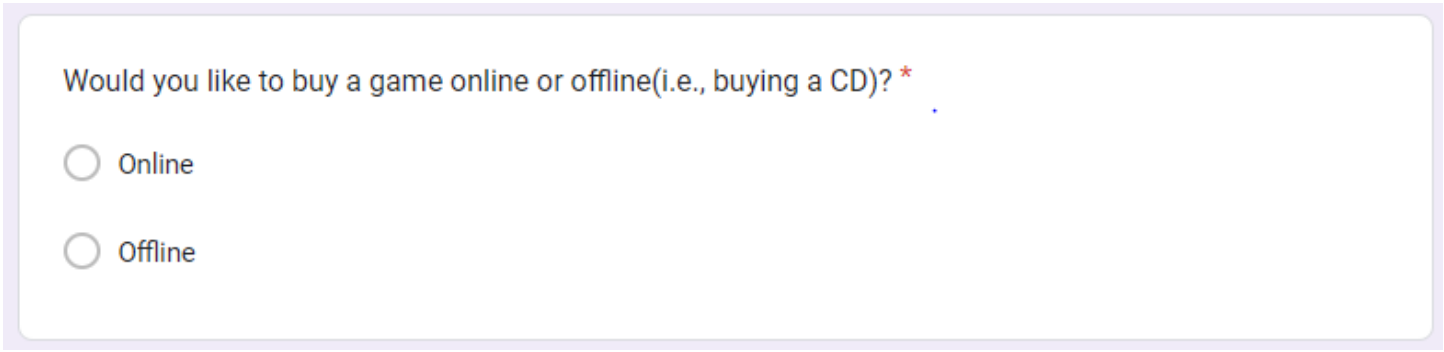
➔ Multiple users are able to access the database of a particular game at a time so we have to maintain Concurrency.

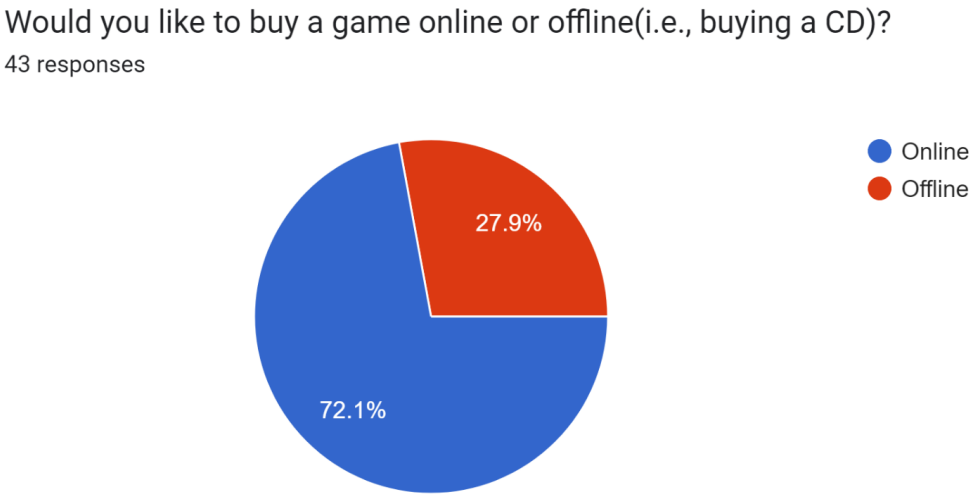
➔ Game developers will be logged as different users so that they can use different functionalities according to their user type.

➔ We have to provide an age restriction for some games which are needed.

2.3 Questionnaire/s

1. **Would you like to buy a game online or offline(i.e., buying a CD)?**





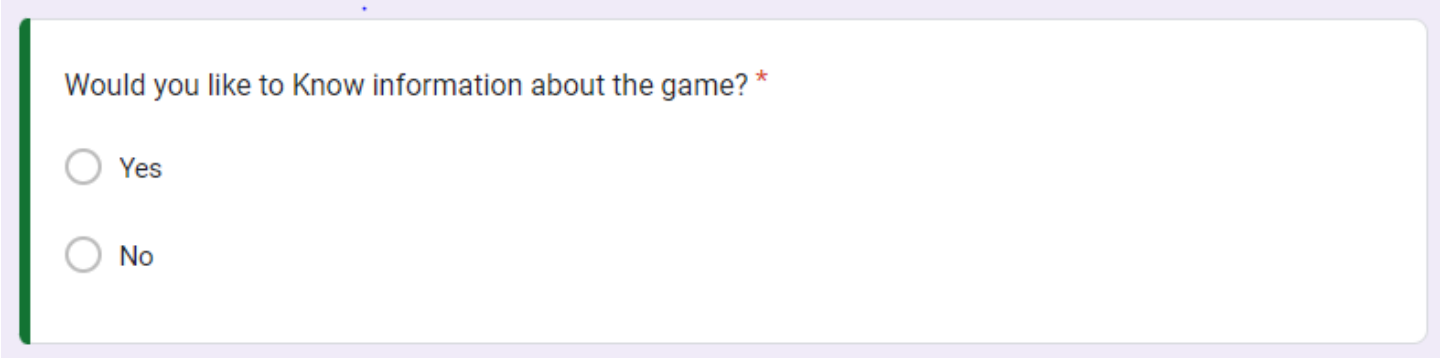
The intent of This Question:

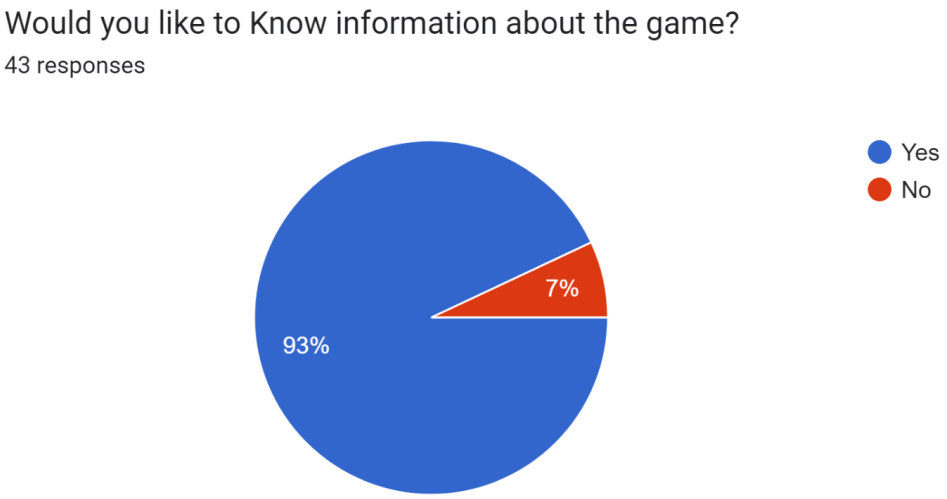
➔ To get to know the reason behind the drastic increment in the number of users who prefer online game purchases over offline gaming purchases.

Observation from the response:

➔ As we can see in the result of responses, there are many responses to prefer online game purchasing over offline game purchasing. here, more than 70% of people prefer online game purchasing because of the reason that in online game purchasing, they get all types of games on one platform, and they can easily choose among them.

2. Would you like to Know information about the game?





The intent of This Question:

➔ To get to know what the user really wants to know about the information game or not.

Observation from the response:

➔ As we can see on the graph, more than 90% of people want to know information about the game. Now we are sure that we have to create a relation that contains information about the game.

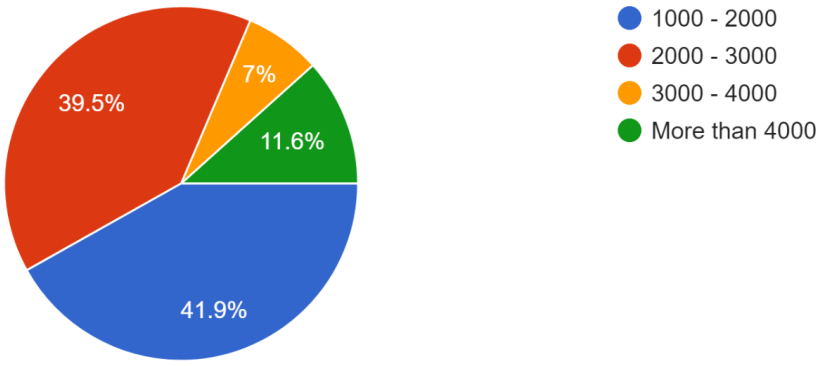
3. Which price range do you prefer to buy a game?

Which price range do you prefer to buy a game? *

- 1000 - 2000
- 2000 - 3000
- 3000 - 4000
- More than 4000

Which price range do you prefer to buy a game?

43 responses



Intent of This Question :

➔ To get to know at which prices users are more comfortable buying games.

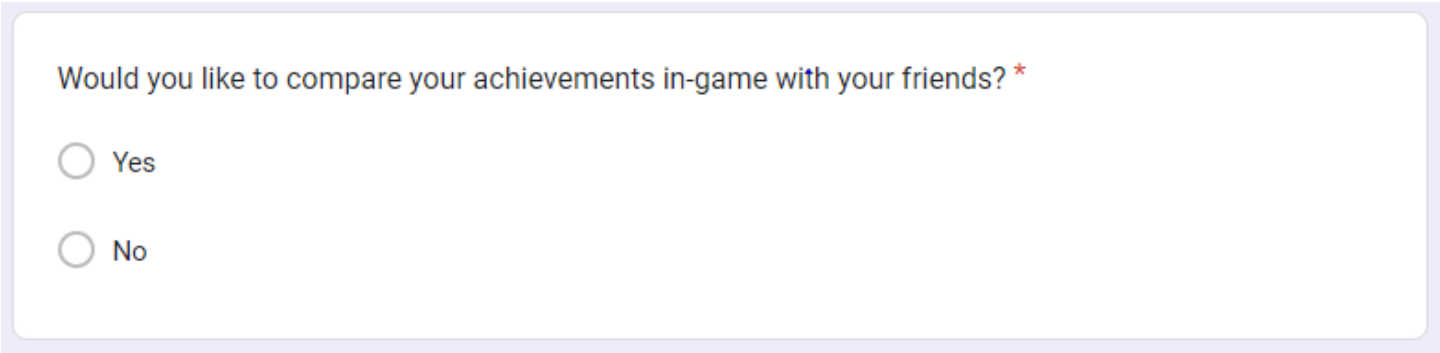
Observation from the response:

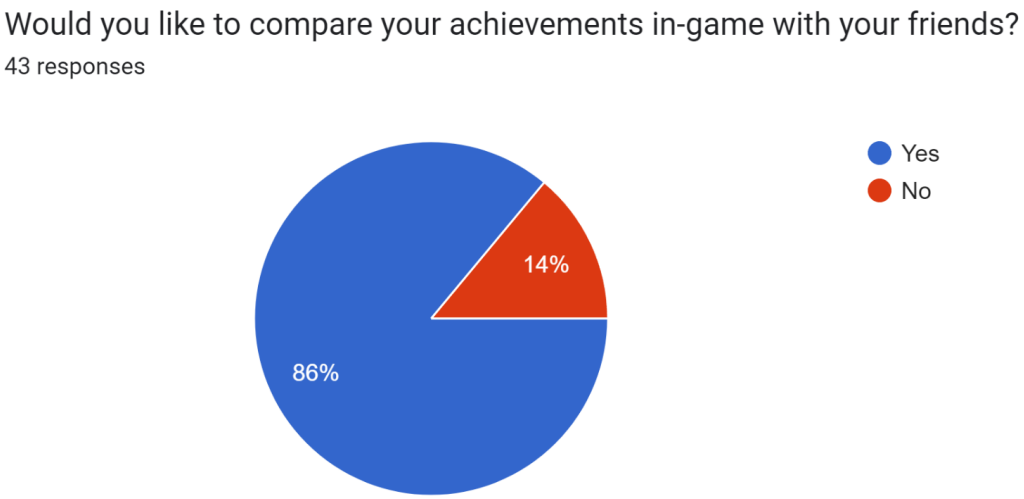
➔ As we can see 41.9% users want to buy games between the price range 1000 to 2000.

➔ Around 40% users want to buy games between the price range 2000 to 3000.

➔ From this information we have to make sure that most of our games prices are set to between 1000 to 2000.

4. **Would you like to compare your achievements in-game with your friends?**





Intent of This Question :

➔ To get to know that users want to compare their awards and achievements with their friends.

Observation from the response:

➔ As we can see, 86% of users want to compare their achievements with their friends.

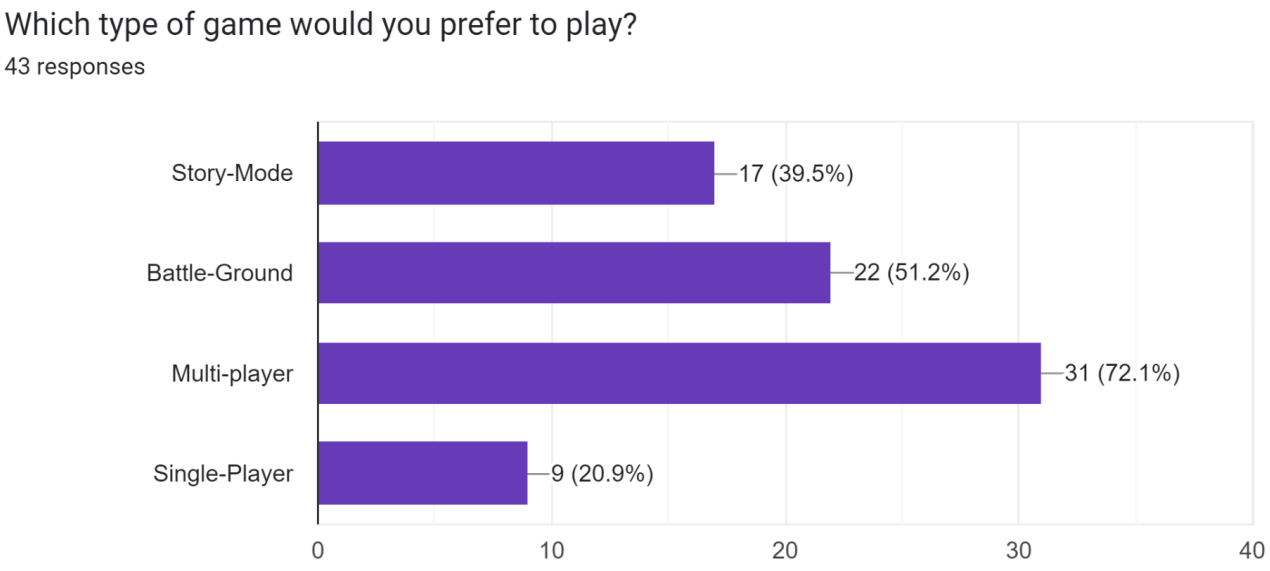
➔ There are very few person that do not like to their achievenyts with their friends.

➔ So we can conclude that we should provide this type of functionalities in our system.

5. Which type of game would you prefer to play?

Which type of game would you prefer to play? *

- [ ] Story-Mode
- [ ] Battle-Ground
- [ ] Multi-player
- [ ] Single-Player



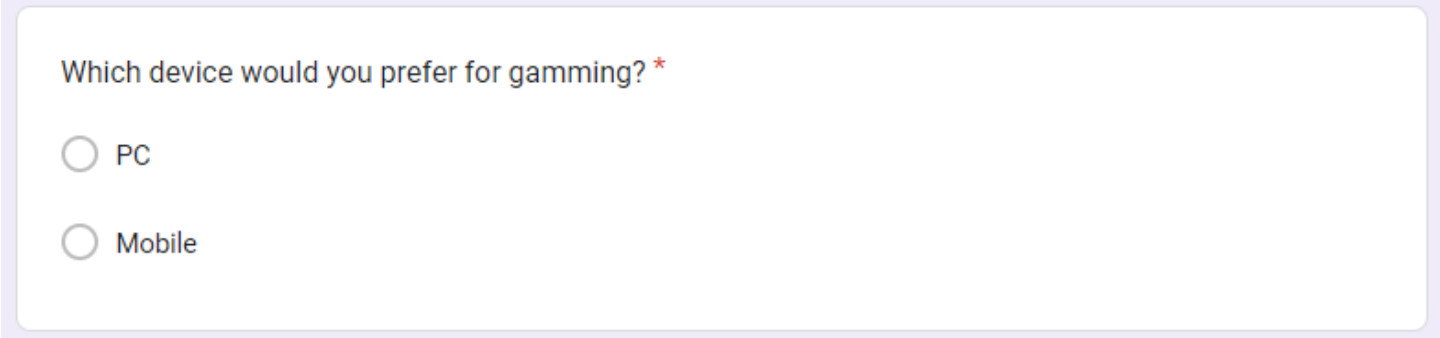
The intent of This Question :

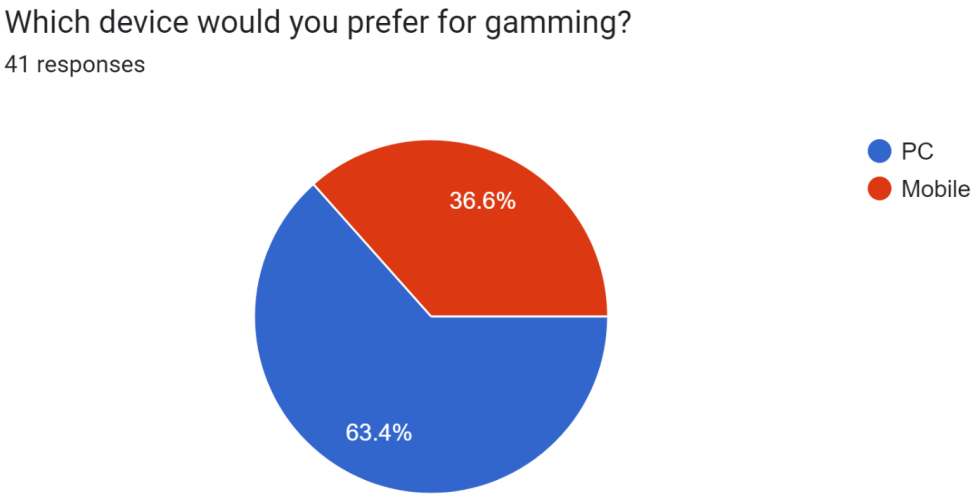
➔ To get to know generally which type of game users are mostly interested in playing games.

Observation from the response:

➔ As we can see, most of the gamers like to play Multiplayer and Battle-Ground field games.
➔ There are other players that also like to play Single player games.

6. **Which device would you prefer for gaming?**





The intent of This Question :

➔ To get to know in which device the user is most likely playing a game either pc or mobile?

Observation from the response:

➔ As we can see, more than 60% of users like to play games on the PC.

➔ But there are other players that also like to play games on mobile.

➔ From this, we can conclude that we have to make a game such that both types of users can play that game.

3. Fact-Finding Chart

Objective	Technique	Subject	Time Commitment
To make a better game distribution platform from the user's perspective.	Interview	Ramesh Patel as gamer	45 minutes
The backup of the database will be taken at regular intervals	Interview	Mahesh Patel as a game developer	40 minutes
To get the information about the game - Database Update	Interview	Mahesh Patel as a game developer	40 minutes
To get proper system to store users details Data Redundancy	Interview	Ramesh Patel as a gamer	40 minutes
To refer to the background of the	Background	To get an idea	

existing digital video game distribution system	readings	about existing system	30 minutes
To get information about price range	Questionnaire	Student of the DAIICT, Relatives	2 Days
Which types of game users want to play	Questionnaire	Student of the DAIICT, Relatives	2 Days
In which device users most like to play games	Questionnaire	Student of the DAIICT, Relatives	2 Days
Age restrictions	Observations	Kenil Kosiya Naman Patel	30 minutes
Security for database	Observations	Kenil Kosiya Naman Patel	30 minutes

4. List Of Requirements

➔ To keep and update all the user-related data, including friend lists, game information, etc., a well-organized and efficient database management system is necessary.

➔ It is necessary to have a good user interface that is simple to use so that users may obtain the necessary game information without needing to understand how the system is really put into practice.

➔ The implementation of system structure and functionalities should ensure faster and better performance.

➔ We gain insight into the features that are necessary for both user and game developer comfort in our system.

➔ A proper mechanism for storing user information should exist. similar to data redundancy so that Users won't have to repeatedly enter all of their information.

➔ The user's information should be our top focus. In order to prevent any of their data from being leaked, we must ensure security for this.

➔ To allow users to filter their games, for example, we must implement a proper search system.

➔ At regular periods, the users' feedback will be gathered, and the system will be improved as necessary.

➔ When buying different games and keeping track of which game is purchased by which user, we must maintain consistency and accuracy.

➔ We must ensure concurrency since multiple users can simultaneously access a game's database.

➔ For some games that are required, we must set an age limit.

5. User Categories and Privileges

User Categories

- **Gamer (User)**

  This category consists of all the users who are going to play the games and will be able to purchase the games.

- **Game Developer**

  This category consists of all the developers which create a game and distribute it with us.

List of privileges/functions that can be accessed by different user classes:

1) Gamer (User)

- ➔ They can filter the game they want to play.
- ➔ They are able to see the game's system requirements so that they can decide which game they want to buy.
- ➔ They are able to make a friend list.
- ➔ Users are able to compare their achievements with their friends.
- ➔ Users can give reviews about the game so that it will help other users to purchase the game or not.

2) Game Developer

- ➔ Developers can change or modify their game data.
- ➔ Developers can update their game according to users requirements.
- ➔ Developers can change system requirements according to the update of their game.
- ➔ They are able to set age restrictions according to their game.
- ➔ They are able to decide at which price they want to sell their game.

6. Assumptions

- ➔ We assume that our website is properly operational and that visitors like visiting it, making purchases, and playing games.

- ➔ We assume that the information provided by users and game developers is correct and accurate.

➔ The internet connection at the server is strong enough to handle all the queries from users without crashing and no loss of data occurs due to any technical failures.

➔ We assume that our website is fully secure and that non-authorized persons can’t access the database.

➔ We assume that investment will be done at particular time intervals so that we can improve our system.

➔ We assume that our database is consistent.

7. Business Constraints

➔ Once the user buys a game then a refund is not possible.

➔ Development and maintenance of web/apps are costly.

➔ We need appropriate investment according to the database we are going to make.