Must Have:

<u>Functional:</u>

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  - Singleplayer: only one user will play the game
  - Multiplayer: multiple users will play the same game session and it will include a waiting room and a reactions panel
- The app must have a waiting room [multiplayer only]
- The app must have a start button in the waiting room [multiplayer only]
- The app must retrieve questions from a database (not hardcoded) [single player and multiplayer]
- The app must present multiple choice questions to the player [single player and multiplayer]
- The app must use a REST API [single player and multiplayer]
- The app must allow player to pick a name within a game [single player and multiplayer]
- The app must disallow different players to pick the same name within a game (the first one to pick that name should get it) [multiplayer only]
- The app must provide a leaderboard within a game to compare scores (with yourself in single player and with other people within the same game in multiplayer) [single player and multiplayer]
- The app must provide a time limit in which the players must answer their question [single player and multiplayer]
- The app must provide players with three power-ups: [single player and multiplayer]
  - Remove one incorrect answer
  - Decrease the time for the other players to answer their question
  - Double points for the current question (only for the player who used the power-up)
- The app must disallow players to use the same power-up multiple times in the same game [multiplayer only]
- The app must provide all players in the same game with the same question (synchronous) [multiplayer only]
- The waiting room must display the amount of joined players [multiplayer only]
- The app must have a multiple choice question type with 3 answers (guess which activity uses more/less power) [single player and multiplayer]
- The app must provide reactions for players to use whilst in a multiplayer game [multiplayer only]
- The power-ups must be available in the time-out period [single player and multiplayer]
- The app must not award players any points if they do not answer a question [single player and multiplayer]
- The app must only provide the name and the score of other players to the current player [multiplayer only]
- The app must have players provide the server URL [single player and multiplayer]

Should have:

<u>Functional:</u>

● The waiting room should display the names of the joined players [multiplayer only]
● The app should allow any player in the waiting room to start the game [multiplayer only]
● The app should provide 20 questions in a single game [single player and multiplayer]
● The app should give players 10-20 seconds to answer a question [single player and multiplayer]
● The app should award players more points for answering more quickly [single player and multiplayer]
● The app should have a button for rejoining the waiting room or for going to the home screen [multiplayer only]
● The app should provide an question-image [single player and multiplayer]
● The app should not use the same activity multiple times in one game [single player and multiplayer]
● The app should generate unique questions for every game [single player and multiplayer]
● The app should keep a players score on the leaderboard if they disconnect [multiplayer only]

<u>Non Functional:</u>

● The app should be able to run on low power machines (raspberry pi) [single player and multiplayer]
● The app should have a consistent design [single player and multiplayer]
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Could have:

<u>Functional:</u>

● The app could kick a player if their connection is lost [multiplayer only]
● The app could provide a way for players to report errors to the developers [single player and multiplayer]
● The app could allow players to pick their own power-ups [single player and multiplayer]
● The app could allow players to use all power-ups in one question [single player and multiplayer]
● The app could display all questions with the correct answer after every game [single player and multiplayer]

- The app could display what questions every player had right after every game [multiplayer only]
- The app could have a history of leaderboards [single player and multiplayer]
- The app could provide an estimate question type [single player and multiplayer]
- The app could inform players left in the current game when someone disconnects from said game [multiplayer only]

Won't have:

<u>Functional:</u>

- The app won't provide a player authentication system [single player and multiplayer]
- The app won't provide a way to pause the game [single player and multiplayer]
- The app won't provide in game chat [single player and multiplayer]

<u>Non Functional:</u>

- The app won't impose an arbitrary limit on the number of concurrent games [single player and multiplayer]