MOBILE COMPUTING

PROJECT: TREASURE HUNT APPLICATION

1. **Introduction:**
   A real time location-based Treasure Hunt game for android which provides user a framework to design treasure hunt games and allows players to play it. Since this is the location-based game, we are extensively using GPS and google map APIs. If the player choses to join game rather than creating it, he is provided with a puzzle which will contain a clue for the location on the map. Players has to take their smartphones to that correct location. Doing that will unlock a new puzzle. This new puzzle will contain a hint for the next location. It continues until player reaches the treasure. For each game, we will manage the individual score and leaderboards. All this information of designed games; questions, answers, hints and locations are stored on firebase database.

2. **Application flow:**
   2.1. **Login**
      User can login into application using email and password that is registered in Treasure Hunt user database. There is also a provision of google login API. If there are multiple google accounts, player can select whichever account he wants to connect with the game.

   2.2. **Register**
      If the player has not register before into game, he can create his account by Registering to the game. It requires email id and password.

   2.3. **Create/Join Game**
      There can be two options for user after registration. He can either play a game that is already generated or can create his own game. This screen also gives you an option to see the leaderboard.

   2.4. **Create Game**
      To create a new game, user will submit his name as a game creator. Then he will go to desired location where he wants to set a question and will press on submit button. As it is location-based game, that location will be the answer. Before submit, user can also set a hint for that location if he wants. System will ask if he wants to set another question. User can submit as many questions as he wants. System will store these questions in input order.

   2.5. **Play Game**
      To play already created game, that game developer first needs to share his game id with potential game players. Player will submit game ID and then game will start with first question. Player will go to the desired location asked in question and hit on submit button. He can also take help of hint if already provided by game developer. If player location matches with the answer, player will be directed to the next question. Accuracy should be of 5-meter radius then only player's answer will match. If player completes all question, at last question submission, player will be redirected to that particular game's leaderboard.

We have also added public/private mode for players. In public mode, player's location will be shared with admin and in private mode, location sharing will be off.

2.6. **Leaderboard**

A Player can request to see all the leading players for a particular game. One can give a specific game name and will be able to see the list of players ranking from 1. It also, displays the total time taken by the player to complete the treasure hunt game. This game displays leaderboard once the player has finished playing the game. Player can also check the leaderboard by clicking the leaderboard button on the menu screen.