Owner

• Manage player • Manage database	• Database • Player • QRCode

Player

• Add/remove the QR code and photo • Accept/decline the location photo • Has the player's account • Manage the profile, QR code • Generate unique personal QR code	• Camera • QR Code • Profile • Map • Database • Photo

Admin

• Manage the malicious player's accounts • Manage the malicious QR codes • Limit the data storage for images	• Database • Player • QR code

LoginSystem

• Sign in to different account	• Player • Database • QR code • Camera

SearchTool

• Search for user account • Search for QR codes on the map	• Player • Database • Map • QR codes

ScoringSystem

• Calculate score for the QR codes • Calculate the total score • Calculate the total number of QR codes	• Database • QR code • Photo • RankingSystem

RankingSystem

- Ranking player's score - Ranking the highest QR code score - Ranking the total score of players - Ranking the total number of scanned QR code	- ScoringSystem - Database

Camera

- Take the location of the QR code - Take a photo of the QR code - Scan the QR code	- PlayerController - Database - Photo - QR code

Photo

- Represent the photo of a QR code	- Camera - Player - QR code - Database - Map

Map

- Record the QR code's location
- Navigate all available QR codes

- Database
- QR code
- Photo
- Player

LoginScreen

- Show the log in interface
- Log in with username or QR code

- Player
- Database
- HomeSession

HomeSession

- Show different options for user's interactions

- Profile
- Leaderboard

Searching

- Show options to search

- Player
- Database
- Profile

Map

• Show the interactive map	• Map • QRcodeView • Player

Profile

• Show user's personal information • Show unique QR code for each user	• Player • Database • Leaderboard

ViewAllQRcode

• Show the scanned QR code	• Database • Photo • QR code

Leaderboard

- Show the highest total scores
- Show the highest total number of scanned QR codes
- Show the estimate ranking of the player
- Show the scores of a QR code

- Database
- RankingSystem

ViewAllComment

- Show all the comment of the QRCode

- Database
- ViewAllQRCode

MainActivity

- Manage interaction for user with main screen

- SearchUsernameActivity
- Database
- RankingActivity
- SearchQRCodeActivity
- SignupActivity
- ChangeProfileActivity

MyCryptography

• Hash the input into a string • Encrypt/decrypt the string	• Database

MyBitmap

• Resize the map	• Database

SearchUsernameActivity

• Search for username	• Database • MainActivity

Database

• Store the data	• SearchUsernameActivity • RankingAcitivity • ChangeProfileActivity • SignupActivity • SearchQRCodeActivity

RankingAcitivity

• Rank the player	• Database • MainActivity

SearchQRCodeActivity

• Search for the QRCode	• Database • MainActivity

SignupActivity

• Help player to sign up	• Database • MainActivity

ChangeProfileActivity

• Change the profile of the player	• Database • MainActivity