# SCAVENGER HUNT GAME USING BLE BEACON

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## Abstract

In this project, we developed a mobile Android application which is named as the “Scavenger Hunt Game”. This application is formed with the BLE Beacon devices and the mobile application. This application is a mobile game which is using fun and creative game dynamics in it. The goal of this game is to gain points by accomplishing the specified missions in the given mission list to get the highest score in a certain area. The main purpose of this project is to make easier for people to perform the tasks that are expected by them with an entertaining way which means this is a serious game.

Key words: Bluetooth Low Energy (BLE), BLE Beacon, Android Studio, Scavenger Hunt Game, Mobile Application, MySQL, Database Management System.

## Introduction

In developing world, people have daily responsibilities. Even with the existence of these responsibilities, people can feel bored and tired. In work life, people may not be able to adapt themselves to their work or workplace. Therefore, their work efficiency may decrease. This is same for students. The school tasks can become challenging for them. Once the students feel bored, they do not want to do anything willingly. Our aim with developing this Scavenger Hunt mobile application is to make everything easier and funnier. People can use this application in their work life or students can use it to complete school works. Furthermore, everyone can use it just for fun.

In today’s world, competition is also important for some people. When these people have this competition in their life, their potential to do their works increases. Our application presents you this competitive environment.

Lastly, there are differences between individuals. Some people cannot communicate with others easily. When they have to be a part of a group, they can have some difficulties about that. Therefore, people may have an adaptation problem and may find it difficult to get close to other group members. Hence, we need something to get people closer. Our application is just perfect for this work.

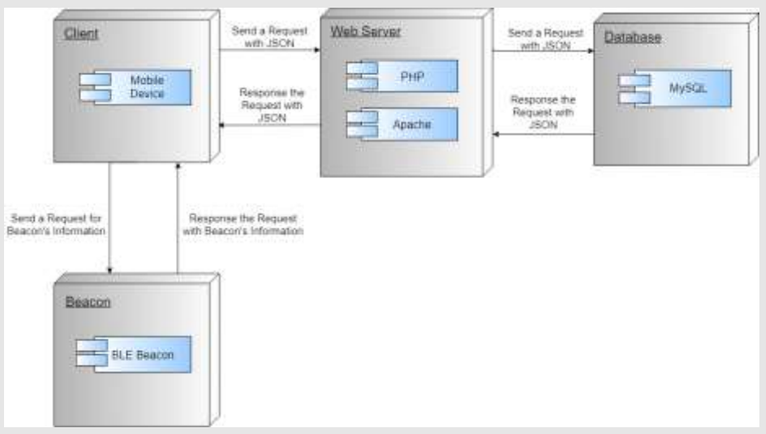


**Figure 1 – The Deployment Diagram**

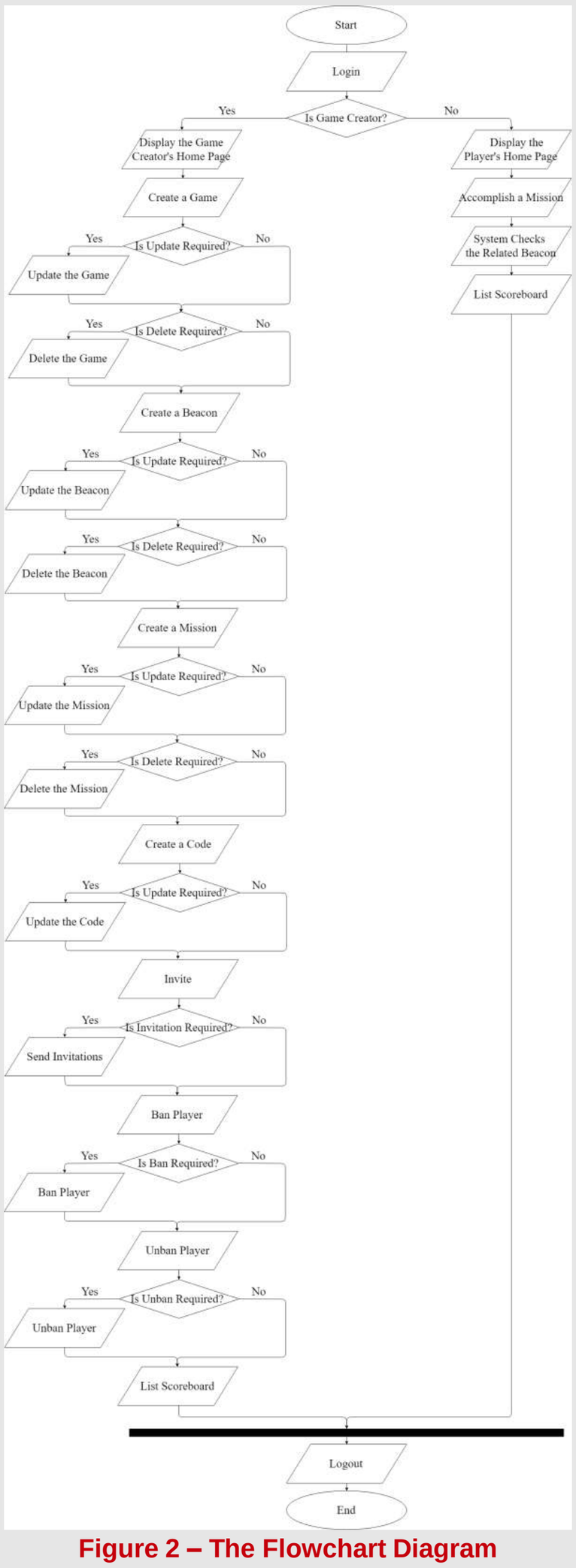


**Figure 2 – The Flowchart Diagram**

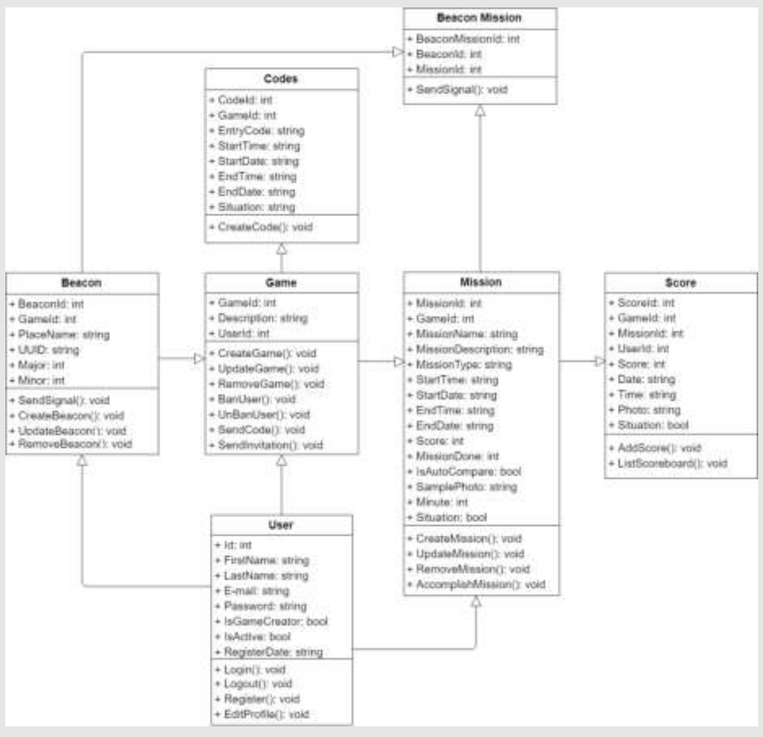


**Figure 3 – The Class Diagram**

## Solution

In this project, we are using BLE Beacon, Gamification and Android technologies together.

BLE Beacon is a technology that provides location information using low energy Bluetooth signals. In other words, products or devices with Beacon technology can spread passive signals to interact with other smart devices near them.

Gamification is the process of adding game elements to something you want in order to change the tendencies and behaviors of people. The main goal of this method is combining work with fun to encourage people and increase their participation and motivation.

This application is developed for the devices with Android operating system version 7.0 and above.

We used MySQL as database in our project because it is more suitable than others. MySQL is an Oracle-based open source relational database management system (RDBMS) based on structured query language (SQL). We used phpMyAdmin which is a web application written primarily in PHP for managing our MySQL database.

## Results & Conclusion

In this project, we aimed to create an enjoyable game that contains people's responsibilities as missions. In our world, people are transforming their jobs into their habits and their performances are decreasing. Our goal in creating this competitive game is to increase people's performances and get people closer to their environment.

## Acknowledgement

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