MINI PROJECT

-bluetooth scanning app

TEAM DETAILS

AKSHAY >>>> SREERAG >>>> RAHEES >>>> MOHAMMED

PROBLEM STATEMENT

The increasing prevalence of Bluetooth-enabled devices has led to a growing demand for Bluetooth scanning apps that can discover and connect to nearby devices.

However, existing Bluetooth scanning apps for Android often suffer from a range of problems, including:

Limited device compatibility: Some apps may not work with all Bluetooth-enabled devices or may have compatibility issues with certain devices.

Inconsistent device discovery: Some apps may struggle to detect nearby devices or may provide inaccurate information about the devices that are discovered.

Poor user experience: Some apps may have confusing or poorly designed user interfaces that make it difficult for users to discover and interact with nearby devices.

Security concerns: Some apps may not provide adequate security features to protect against unauthorized access or data breaches.

ABSTRACT

This project develops a Bluetooth scanner application for smartphones with Flutter that provides timestamps, RSSI, MAC addresses of nearby Bluetooth devices and scans devices every minute even when the app is running in the background. The application uses the flutter_blue plugin to process Bluetooth scans and display scan results in a list view. The app is user-friendly and easy to use, with a simple user interface and real-time scanning capabilities.

The project also includes a background service that allows the application to continue searching for Bluetooth devices even when the application is not in the foreground. The background service is designed to run once per minute to ensure that the app can continue to search for nearby devices without draining the device's battery or affecting its performance.

The project can be used as a basis for creating more complex Bluetooth applications or as a standalone application to scan for nearby Bluetooth devices. With this app, users can easily search and identify nearby Bluetooth devices, making it useful for many applications including home automation, IoT and location-based services. The ability to scan for Bluetooth devices in the background also helps in monitoring the presence of devices over long periods of time.

OBJECTIVES

The objectives of the Bluetooth scanning Android app include

Device discovery: The app should be able to discover nearby Bluetooth devices and provide information about them, such as their name, type, and signal strength.

Pairing: The app should enable users to establish a secure connection with the discovered devices and initiate the pairing process.

Service discovery: The app should identify the services supported by the discovered devices and provide information about them, such as their service UUID and characteristics.

Filtering and sorting: The app should provide the ability to filter and sort the discovered devices based on their properties, such as device class, service UUID, and signal strength.

User interface: The app should have a user-friendly interface that makes it easy for users to di scover and interact with nearby Bluetooth devices.

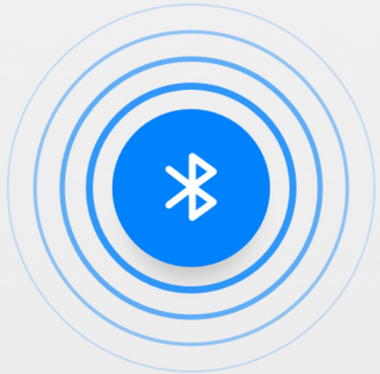
Compatibility: The app should be compatible with a wide range of Bluetooth-enabled devices and versions, and should work seamlessly on Android devices.

Security: The app should support security features such as pairing and encryption, and provide a secure and reliable connection to the devices.

LITERATURE REVIEW

- Bluetooth technology is commonly used for wireless communication between devices
- A Bluetooth scanning app can help users discover nearby Bluetooth devices and establish connections for data transfer
- However, existing Bluetooth scanning apps may have limitations such as:
  - Inaccurate or incomplete device information
  - Poor user interface or user experience
  - Limited filtering options for search results
- Our client requires a Bluetooth scanning app that can:
  - Scan for nearby Bluetooth devices and display relevant device information
  - Provide advanced filtering options for search results
  - Allow users to establish connections and initiate data transfer
  - Offer a user-friendly and efficient experience for Android devices
- Our solution aims to address these limitations and provide a better Bluetooth scanning app for Android users.

MOTIVATION



- Bluetooth is a widely used wireless technology that enables devices to communicate with each other over short distances. we are interested in wireless communication technologies, developing a Bluetooth app can be a great way to learn more about how Bluetooth(wireless technology) works and how it can be used in various applications.

- Bluetooth apps can be useful in many different contexts, such as controlling IoT devices, connecting to wireless headphones or speakers, or sharing files between devices. If you have a specific need for a Bluetooth app in your personal or professional life, developing one as a project can be a great way to meet that need.

- We are developing an enhanced version of Bluetooth scanning app with features such as continuous scanning until background operations stop and displaying a timestamp, RSSI (received Signal Strength Indicator).MAC address, and other valid parameters

PROJECT PLAN

MILESTONE 1

creation of GUI

MILESTONE 2

creation of bluetooth functionality

MILESTONE 3

integration and testing

MILESTONE 4

launching

THANK YOU