

Drug Reporting Application Using Flutter (Narcotics Control Bureau)

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Abstract

Development of an application where the general public can report illegal activities of drug trafficking anonymously and fearlessly. The importance of seizing illegal drugs cannot be overstated. It is essential for governments to take measures to reduce the supply of drugs on the streets and to protect the public from the harm associated with the use and distribution of drugs. Seizing illegal drugs can help to reduce the number of people who are exposed to the dangers associated with drug use, as well as to reduce the amount of drug-related crime[1] (Dhingra, Mobile application development using flutter , 2021). Additionally, seizing illegal drugs helps to send a message to potential drug traffickers and dealers that their activities will not be tolerated. The purpose of this research paper is to provide an overview of drug abuse, the need for anonymous reporting of drug use, and the benefits of anonymous reporting. It will also discuss the importance of anonymity in allowing individuals to get the help they need without fear of repercussions. Finally, it will discuss the various ways in which anonymous reporting can be utilized to help combat the problem of drug abuse. The main findings of this research paper indicate that drug abuse is a serious and growing problem in the world. Furthermore, anonymous reporting of drug use can play a key role in helping to combat this problem. Anonymous reporting provides individuals with an opportunity to get help without fear of repercussions and can help law enforcement and other organizations to better understand the problem of drug abuse. Ultimately, anonymous reporting can be an effective tool in helping to fight against drug abuse and can help individuals to get the help they need.

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I. Introduction

India lies sandwiched between two of the world's "three key production areas" for opium, leading to an illicit drugs crisis. But cross-border trafficking holds only part of the explanation for the illicit drugs trade that runs through India. India's pharmaceutical industry is "the largest provider of generic drugs globally", as per the department of pharmaceuticals, Ministry of Chemicals and Fertilizers. But there have been reports of clandestine manufacturing and siphoning of synthetic drugs and illicit trade in chemical precursors. Currently, there is no digital way of reporting drug trafficking. The only way is to reach out Narcotics squad or a nearby police station. However, this is not feasible since the majority of the public will not be ready to disclose their profile or will not be ready to spend their time physically. The intended solution should enable the public to report the findings of drug trafficking in their locality anonymously. If the system is anonymous there could be the possibility of a large number of false alarms, and some can be intentional too. Hence the solution should enable filtering out the false alarms by employing any kind of model. The solution should enable the public to upload any relevant information about the finding and it should be easy for the user to use in different language supports.[3] (NCB, 2021). Development of an app where the general public can report information on drug trafficking anonymously using flutter.

The methods used to conduct research for this paper include literature reviews, interviews, surveys, and qualitative analysis. These methods will be used to gather information on the prevalence of drug abuse, the need for anonymous reporting, and the benefits of anonymous reporting. Additionally, these methods will be used to analyze the data collected and draw conclusions. Ultimately, this research paper will provide a comprehensive overview of the topic of drug abuse and the need for anonymous reporting.

Flutter is a cross-platform mobile application development framework created by Google. It is used to develop applications for Android and iOS. [1]

Flutter uses the Dart programming language, which is also developed by Google. Dart is a fast, object-oriented language that is easy to learn. Flutter is different from other mobile development frameworks because it uses a different approach to rendering UI.

Instead of using the platform's native widgets, Flutter uses its own set of widgets that are compiled into native

code. This gives Flutter apps a unique look and feel. Flutter is still in beta, but it is already used by some high-profile companies, such as Alibaba and Google.[2] (Blogger, 2020)

The main advantage of Flutter is that it eliminates the need for cross-platform development. This means that developers can write one codebase for both Android and iOS. Flutter is still a young framework, but it has the potential to change the way mobile apps are developed.[4]

Dart is a programming language that is designed to be easy to use, easy to read, and easy to write. Dart is an object-oriented language with a class-based infrastructure. Dart is a structured language that supports both static and dynamic type-checking.[4]

Dart is a client-optimized language for fast apps on any platform. Dart is used for both back-end as well as front-end purposes. For back-end development, Dart can be used to build scalable, high-performance servers. For front-end development, Dart can be used to build high-performance, cross-platform web applications.

Android Studio is an IDE used for developing Android apps. The Android SDK is a set of tools used for developing Android apps. Android Studio includes the Android SDK, so you don't need to install it separately.[1]

There are many potential impacts of drug abuse, including physical and psychological harm to the user, as well as negative consequences for their family, friends, and the wider community. Drug abuse can lead to addiction, a chronic, relapsing disease characterized by compulsive drug seeking and use despite harmful consequences. It can also cause overdose, which can lead to death. Other potential impacts of drug abuse include financial problems, legal problems, and social problems.[5]

II. Literature Survey

The app, called 'Nudge', allows users to anonymously report illegal drug use and dealing in their local area. The app then sends real-time alerts to other users in the area, so they can avoid the area if they choose to. The app is the brainchild of two former drug addicts, who say they want to help people stay safe from drugs. The app is currently only available in the UK.

This addiction consists of marijuana and nicotine that affects a person's brain and behavior and leads to an inability to control the use of a legal or illegal drug or medication. As a medical professional, you can easily reach more addicted patients through the app.

A recovery app can manage therapeutic techniques to help people overcome their desire for drugs. At Space-O Technologies, we can develop a recovering app for drug addiction that provides individuals with recovery and treatment resources by helping them track, monitor, and trigger time-to-time recovery journals in the form of recovery applications.[3]

Some of the applications that work on the Flutter environment:

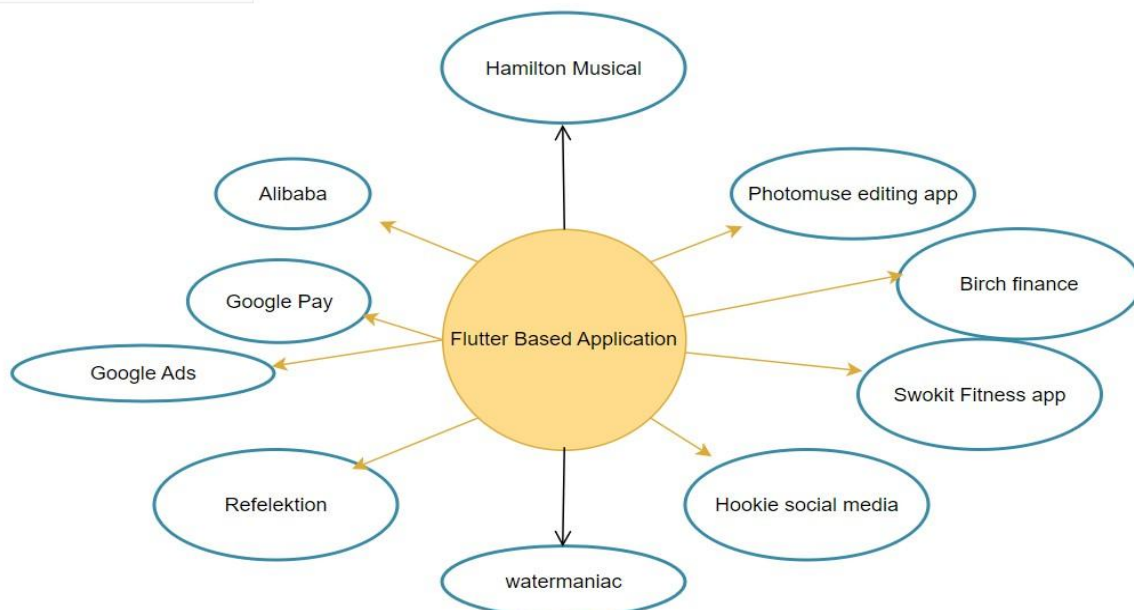


Figure 1.1-Flutter based applications

Alibaba: It is a Chinese e-commerce platform that has been developed using Flutter. It is a powerful mobile application development framework that allows developers to quickly create cross-platform applications.

Google Ads: Google Ads app is a powerful tool for managing campaigns. It is developed with Flutter, it provides a fast and easy-to-use interface for creating, managing, and optimizing advertisement

Reflektion: Reflektion is a retail personalization platform that leverages Flutter to create a user interface for personalized shopping experiences.

Hamilton Musical: Hamilton Musical is an app created to promote the musical of the same name. Developed with Flutter, it allows users to stream music, watch video clips, and get tickets for the show.

Birch Finance: Birch Finance is a personal finance app that helps users manage their finances. It is developed with Flutter and provides users with a streamlined and intuitive user interface.

Hookle Social Media: Hookle is a social media app that is developed with Flutter. It allows users to easily share photos, videos, and updates with their friends and followers.

PostMuse Photo Editing: PostMuse is a photo editing app that is built with Flutter.

This is a representation of the flutter app and how they single-handedly work on both IOS and Android platforms.[4]

Some drugs that are harmful in India are:

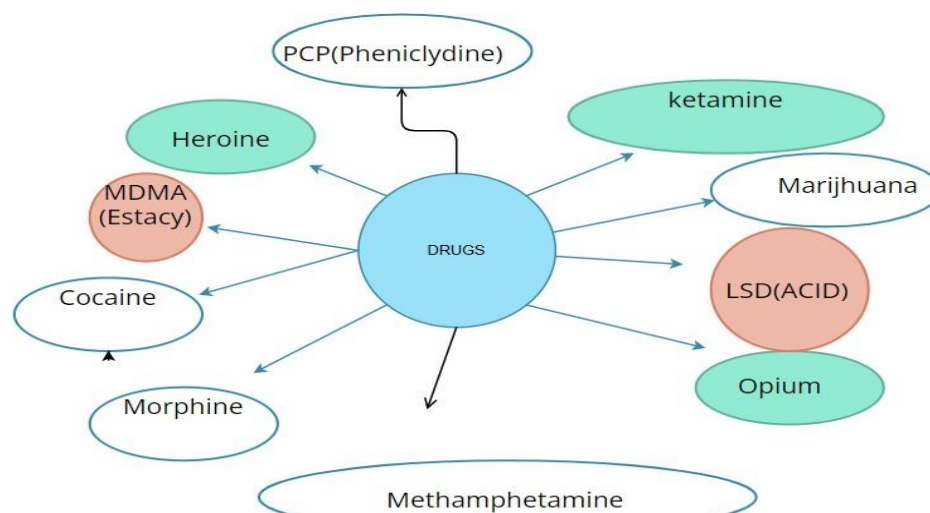


Figure 1.2-Major drugs in India

Heroin: An opioid drug derived from morphine that is highly addictive and dangerous.

Cocaine: A highly addictive stimulant drug made from the leaves of the coca plant.

Morphine: An opioid drug derived from opium that is used to relieve pain and is highly addictive.[6]

Opium: A narcotic drug derived from the opium poppy that is used to treat pain and can be highly addictive.[6]

Methamphetamine: A highly addictive stimulant drug that is also known as “meth” or “crystal meth.” [6]

MDMA (Ecstasy): A psychoactive stimulant drug that produces feelings of increased energy, pleasure, and emotional warmth.[6]

Ketamine: An anesthetic drug that produces a trance-like state and can be abused for its hallucinogenic effects. [6]

LSD (Acid): A hallucinogenic drug that produces a wide range of perceptual changes.[6]

PCP (Phencyclidine): A dissociative anesthetic drug that produces a trance-like state and can lead to violent behavior.[6]

Marijuana (Cannabis): A psychoactive drug derived from the Cannabis plant that produces feelings of relaxation, euphoria, and altered perception.[6]

It is not possible to provide an exact amount of drugs seized by the Narcotics Control Bureau (NCB) in India as the amount is constantly changing. However, according to recent reports, in 2020, NCB seized around 8,000 kg of drugs in India.[3]

Challenges Faced While Developing Drug Reporting Applications Using Flutter

Security: Ensuring the security of the drug reporting application is a major challenge that developers face when using flutter for development. As drug-related activities are illegal and sensitive, it is important to make sure

that the application is secure and that any data collected is kept safe from malicious actors. [5]

Accessibility: Another challenge faced by developers when using flutter for drug reporting applications is ensuring that the application is accessible to all users. This is especially important for users with disabilities, as they may require additional features or tools to use the application. Compatibility Issues: Flutter applications may not be compatible with all devices. This can be a major challenge for developers when trying to create a drug-reporting application that works across multiple platforms

This is a representation of the flutter app and how they single-handedly work on both IOS and Android platforms(fig1.3).

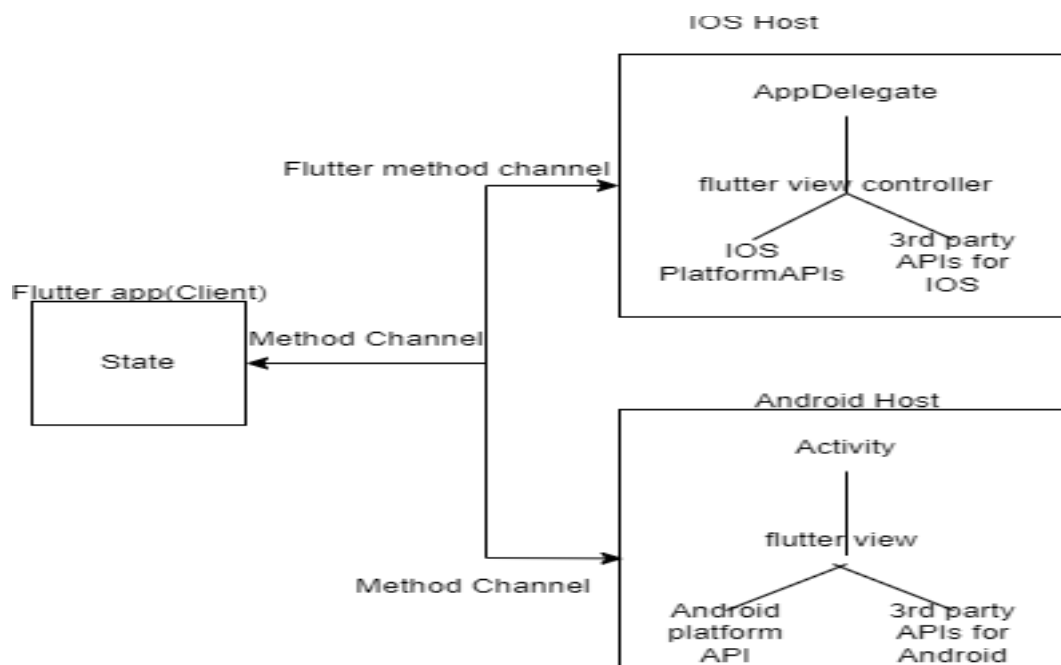


Figure 1.2-Architecture of flutter development[1]

III. Methodology

1. **Research the database of drugs and their effects:** Start by researching information about various drugs and their effects. This can be done by consulting various medical databases and resources, as well as researching drug-related news articles and reports. Anonymously.
2. **Develop a user interface:** Create a user interface (UI) for the app using Flutter. This should make it easy for users to report drug use anonymously. Consider using a simple, intuitive design that will be easy to use.
3. **Design a database:** Design a database to store the data that is collected from the app. This should include information such as the type of drug, the amount used, and any side effects that the user has experienced.
4. **Create a reporting system:** Create a reporting system that will allow users to submit reports anonymously. Ensure that the system is secure and encrypted and that it collects only the necessary data.
5. **Test and launch the app:** Test the app to ensure that all of the features are working correctly. Once everything is working, launch the app and make it available to users. Make sure to continue to monitor the app for any potential issues.

Steps:

1. **Create the project:** Create a new project in Flutter and choose the right UI components for your app.
2. **Design the User Interface:** Design the user interface of the app to make it easy for users to report drugs anonymously.
3. **Develop the Backend:** Develop the backend of the app to store the data from the users and to deliver it to relevant authorities.
4. **Integrate Security Features:** Implement security features such as encryption and user authentication to prevent unauthorized access to confidential data.
5. **Test the App:** Test the app extensively to make sure it works properly and that the reported data is accurate.
6. **Deploy the App:** Deploy the app to the appropriate store and make it available to users.
7. **Monitor and Maintain:** Monitor the app and maintain it regularly to ensure it is up-to-date and secure.

IMPLEMENTATION

The implementation of drug reporting applications using Flutter can be done in the following steps:

Create a new project: Create a new project in Flutter and name it appropriately. **Design the UI:** Design the user interface and layout for the application. Make sure that all the necessary elements are included such as a text field for entering the drug name, a dropdown for selecting the type of drug, a form for submitting the report, and a submit button.[5]

The authentication and authorization part can be implemented using Firebase Authentication. Firebase Authentication is an authentication service provided by Google that allows users to sign in using their email address or phone number. Firebase Authentication also provides various methods of authentication such as OAuth, SMS, and social media providers. The user can be authenticated and authorized using Firebase Authentication.[5]

Add data validation: Add validation to the form fields such as checking for valid drug names and types.

Connect to the API: Connect the application to the backend API to submit the drug report. **Implement the API:** Implement the API to handle the drug report requests.

Test the application: Test the application to make sure everything is working as expected. **Implement two-factor authentication:** Two-factor authentication is a security measure that requires a user to provide two pieces of evidence to gain access to an account. This can be done by using a mobile phone number or email address for authentication. **Encrypt data:** Encrypt the data that is being transferred between the client and the server. **Use a secure connection:** Use a secure SSL connection for all communication between the client and the server. **Implement a privacy policy:** Implement a privacy policy that clearly outlines how user data is used, stored, and shared.[5]

Deploy the application: Deploy the application to the app store and play store. To make the drug reporting application more secure and anonymous, the following measures can be taken:

IV. Conclusion

Drug abuse is a serious and growing problem in the world today. Anonymous reporting of drug use can be an effective tool in helping to fight against and reduce the prevalence of drug abuse. Furthermore, anonymous reporting can provide individuals with an opportunity to get help without fear of repercussions. Ultimately, anonymous reporting can be a powerful tool in helping to reduce drug abuse and help individuals to get the help they need.

FUTURE WORK

Real-time notifications: Send alerts to physicians and pharmacists when a patient may be at risk of an adverse reaction to a particular drug. **Automated data entry:** Reduce manual data entry by automating the process of collecting, validating, and submitting data to the reporting system. **Drug interaction checker:** Compare the patient's current medications to ensure no interactions exist.

Patient education materials: Provide resources to patients that are tailored to their individual needs, such as information about drug side effects, dietary recommendations, and lifestyle changes. **Machine learning algorithms:** Utilize machine learning algorithms to detect patterns in drug-related data, which can be used to improve drug safety. **Analytics and reporting:** Generate reports for drug safety monitoring, such as trends in adverse reactions or correlations between drugs and adverse events. **Integration with electronic health records (EHRs):** Automatically capture patient data from EHRs to streamline drug reporting processes. Using flutter for developing drug reporting applications can be beneficial in terms of user experience and development speed. However, developers must be aware of the challenges that they may face when using this technology, including security, accessibility, and compatibility. With the right tools and strategies, these challenges can be overcome, allowing developers to create effective and efficient drug reporting application.[1,2,5]

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