Report

Introduction

This project is an Android currency conversion application developed in Java. The primary goal was to create a user friendly interface that allows users to convert currency values between various international currencies using real-time exchange rates fetched from an online API.

Features

1. Currency Selection:
   - Two dropdown spinners are pre-populated with a comprehensive list of 160 international currencies.
   - Users can select the base and target currencies for conversion.
2. Real-Time Exchange Rates:
   - Integration with an API to fetch up-to-date exchange rates dynamically.
3. Conversion:
   - The application calculates the converted amount based on user input and the fetched exchange rate.
4. Error Handling:
   - Ensures invalid or empty input is handled gracefully, with appropriate messages displayed to the user.

Technical Details

1. Programming Language:
   - Java using Android Studio.
2. API Used:
   - Exchange rate API for fetching real-time currency rates.
3. Key Components:
   - Spinners: Populated using a predefined array of currency symbols.

○ EditText: For user input of the base currency amount.
        ○ Button: For triggering the conversion.
        ○ TextView: For displaying the converted amount.
   4. Background Processing:
        ○ Used `AsyncTask` for handling API requests in the background to avoid blocking the UI thread.
   5. UI Design:
        ○ Minimalist and intuitive layout with essential components for a smooth user experience.

Challenges faced

API Integration:

- Searching for a suitable API to find one with sufficient functionality and compatibility with the app's requirements.
- Establishing the internet connection with the API.

Dynamic Data Handling:

- Parsing JSON responses to extract exchange rate data efficiently and applying the logic on it.

Conclusion

The application successfully meets its primary goal of providing a reliable and user-friendly currency conversion tool. It showcases effective API integration, making it a practical tool for users seeking accurate currency conversions.