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StegoVault

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Abstract: *This project focuses on developing a Secure Image Steganography Application named StegoVault, an intelligent Android application that allows users to hide sensitive information within digital images using password-based protection. The primary objective of this system is to enhance data security and privacy by embedding confidential text or files into images in a way that remains invisible to unauthorized users.*

The application utilizes image steganography techniques, specifically the Least Significant Bit (LSB) method, to embed secret data into image pixels without causing noticeable changes in visual quality. The system applies password-based encryption before embedding the data, ensuring that only users with the correct password can access and decode the hidden information.

The project is developed using modern Android technologies, mainly Kotlin, and incorporates efficient image processing and data handling techniques. The system follows a structured workflow that includes data input (text or file selection), encryption (securing data using a password), embedding (hiding data within image pixels), and decoding (extracting hidden data from the image). Additionally, the application includes an image analysis feature that provides details such as resolution, file size, and estimated data hiding capacity.

Keywords*: Secure Image Steganography*