ENGINEERING COLLEGE, AJMER
DEPARTMENT OF ELECTRONICS AND COMMUNICATION
SESSION: 2021-22

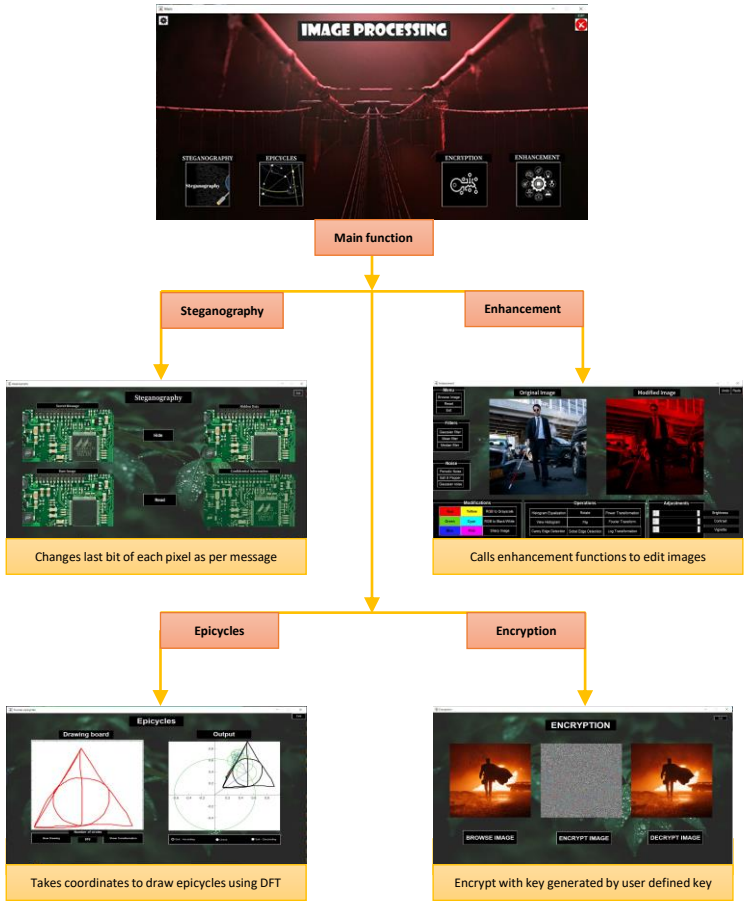
IMAGE PROCESSING APP USING MATLAB (ENHANCE, ENCRYPT, STEGANOGRAPHY AND EPICYCLES)

INTRODUCTION

In this project, we have built a MATLAB-based GUI platform that provides various image processing functions to enhance images with history control option, additional features of data hiding using steganography and powerful image encryption and decryption using key generated by user defined password. Also a beautiful demonstration of how any figure can be drawn using epicycles to get the intuition behind Fourier series. Apart from all the features, our GUI platform is very user friendly and fun to explore.

PLATFORM – MATLAB

This app is built using the Guide function in Matlab and has the potential to influence towards data security as well as mathematics.



FEATURES

- Steganography (Hide & Read)
- Encryption - Decryption
- Fourier Series - Epicycles with Sorting as per coefficients (amplitude)
- Filters - Gaussian, Mean & Median
- Noise - Periodic, Salt & Pepper, Gaussian Noise
- Colour modification & sharpness
- Histogram Equalization
- Rotation and flip images
- Edge Detection - Canny & Sobel
- Transformation - Logarithmic, Power & Fourier transformation
- Adjustments - Brightness, Contrast & Vignette slider buttons
- Reset, Undo and Redo options.

Scan QR code for more details and source code.

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