SOCCA -55

Vectrofy

1. Falgun Sorathiya
2. Om Patel
3. Nishith Mehta
4. Naman Umraniya
5. Jaydeep Solanki

Guided by
Prof. Trishir Wadbude
Silver Oak College Of Computer Application,
Bachelor of Computer Application, SOU

SILVER OAK UNIVERSITY
EDUCATION TO INNOVATION

INTRODUCTION

Vectrofy is a web-based application that addresses the growing need for scalable, high-quality graphics across various platforms. Traditional raster images, like PNG and JPG files, are often unsuitable for large-scale applications because they lose quality when resized. To overcome this limitation, Vectrofy converts these raster images into vector graphics (SVG), which are resolution-independent and maintain their sharpness regardless of scaling. By using Vectrofy, users can store and manage their images on the cloud, making it accessible from anywhere and ideal for collaborative workflows.

GOALS & OBJECTIVES

The primary objective of Vectrofy is to provide a user-friendly and efficient solution for converting raster images to vector files. It is designed to simplify the image format conversion process, allowing users to manage their image conversion tasks and access their previously converted files.
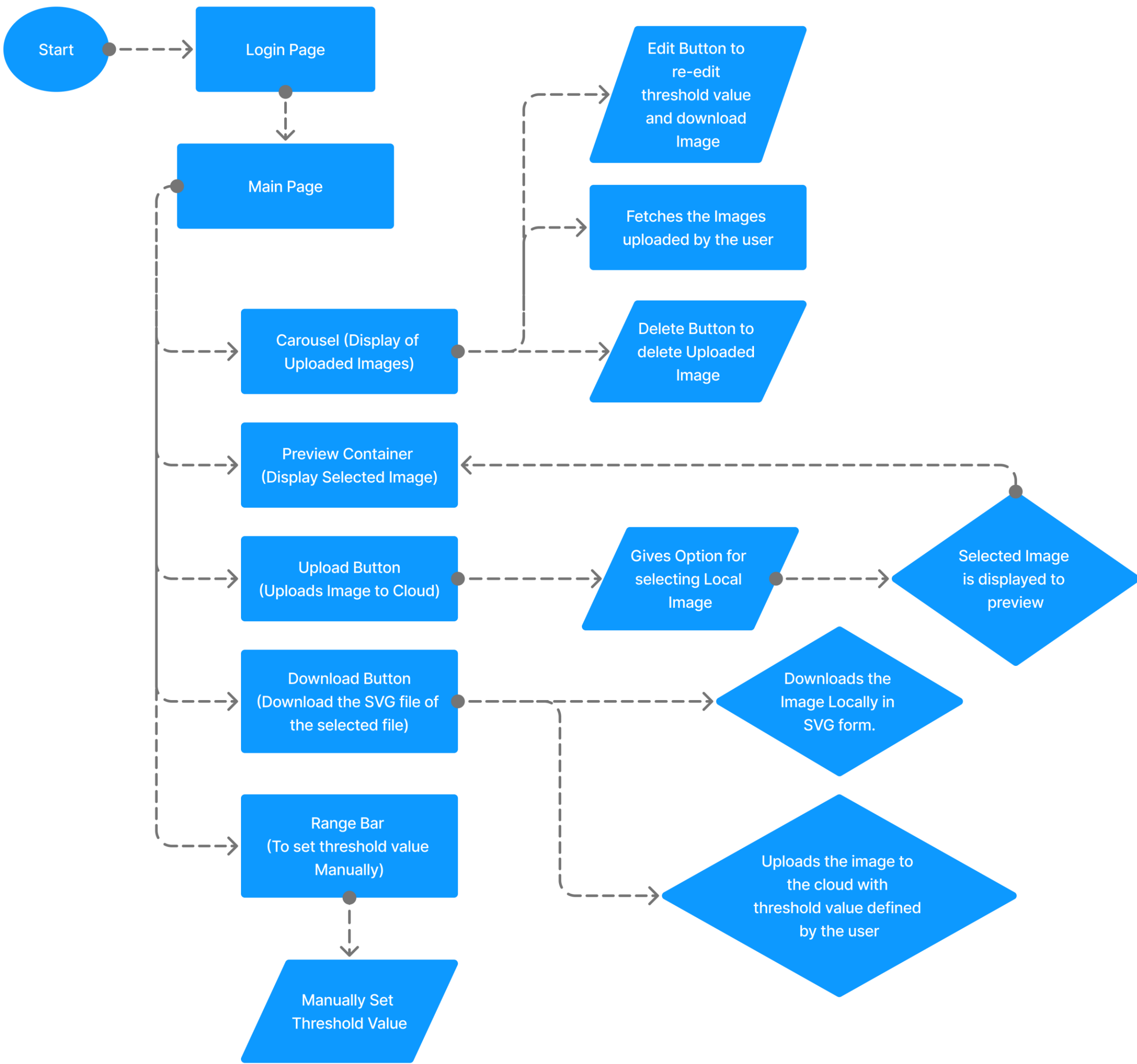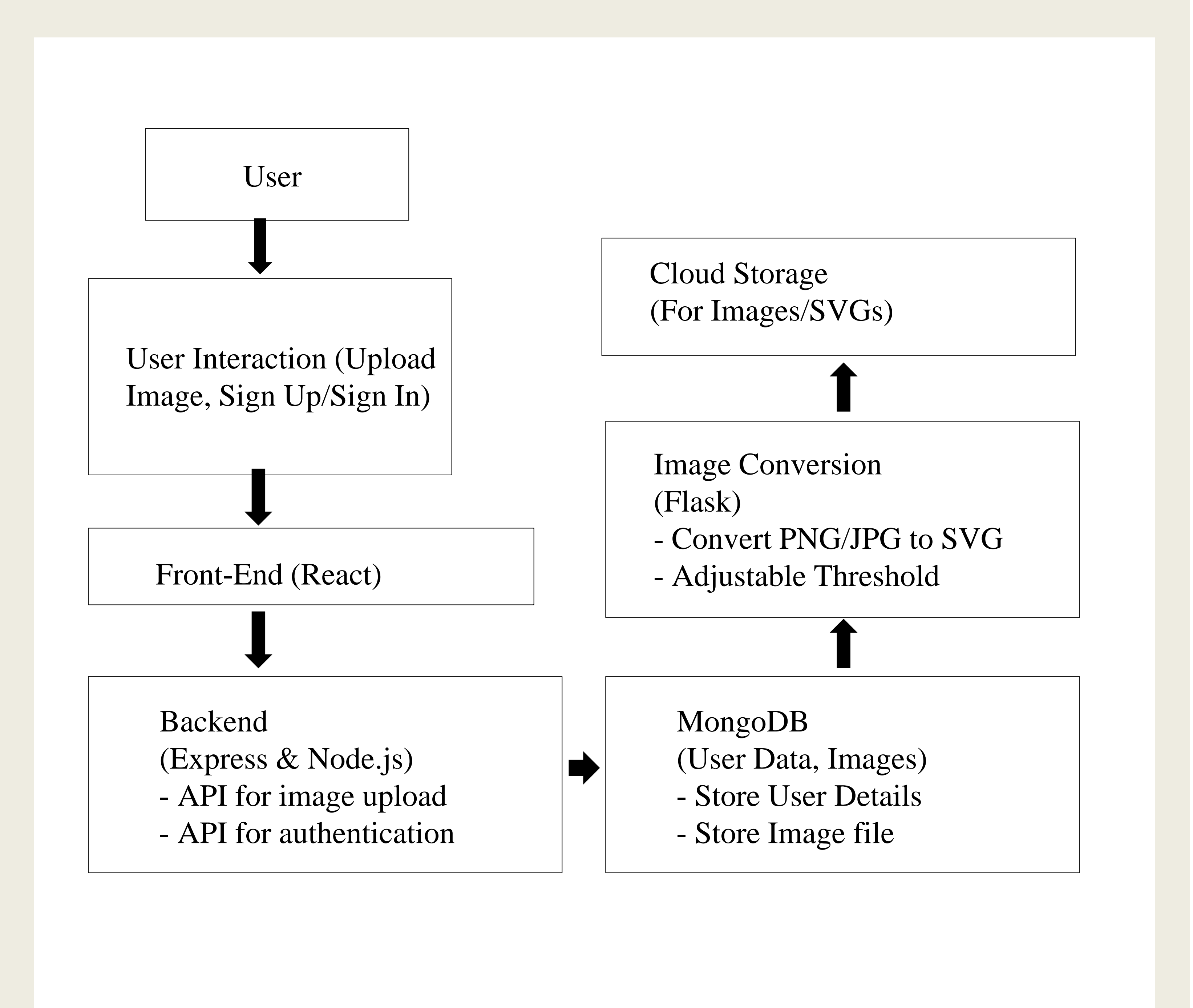
TECHNIQUES USED

- MERN(MongoDB, Express.js, React.js, Node.js)
- Python
- Flask API

ALGORITHM USED

- Image Conversion
- SVG Writing
- Thresholding

Block Diagram / Circuit diagram/ Drawings

SYSTEM FLOW with Experiments and Results

IMPLEMENTATION

We implemented Vectrofy by integrating a MERN stack web application with a Python-based image conversion microservice via Flask API, enabling cloud-based raster-to-vector image conversion with user authentication and customization features.

FUTURE SCOPE

The future scope of Vectrofy includes enhancing its image conversion capabilities through the integration of advanced AI and machine learning algorithms for more precise vectorization and intelligent pattern detection. Additionally, the platform could incorporate style recognition and transfer capabilities, allowing users to apply specific artistic styles to their conversions. Expanding cloud storage options, integrating with third-party design tools, and enhancing the UI for mobile users could further broaden its usability and appeal across industries.

CONCLUSION

In conclusion, Vectrofy provides an essential solution for modern design and development by delivering a high-precision tool for raster-to-vector conversion. It empowers users to scale their visuals infinitely, retain full control over design elements, and make edits seamlessly—all while maintaining the integrity of the original image. As the demand for scalable, editable, and efficient graphics grows across industries, Vectrofy stands out as a powerful asset for professionals seeking to streamline and optimize their design workflows.

REFERENCES

- MERN Course: https://www.udemy.com/course/react-nodejs-express-mongodb-the-mern-fullstack-guide/
- Redux Tutorial: https://youtube.com/watch?v=1i04-A7kfFI&t=3245s
- Image Upload in Cloud: https://www.youtube.com/watch?v=YH63fnqG7F0&t=1s
- Raster Image to Vector Conversion: https://youtu.be/i_9tAee-hYo?si=snPzcD_ujSKaS7TU
- Flask Python and React Integration: https://www.geeksforgeeks.org/flask-tutorial/