VISVESVARAYA TECHNOLOGICAL UNIVERSITY,

BELAGAVI - 590018

Mini Project Report

On

"CARTOONIFYING, MORPHING AND BLENDING OF AN IMAGE"

A report submitted in partial fulfillment of the requirements for

COMPUTER GRAPHICS AND IMAGE PROCESSING LABORATORY (21CSL66)

In

Computer Science and Design

Submitted by

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CERTIFICATE

This is to certify that the Computer Graphics and Image Processing Laboratory with Mini Project entitled **"CARTOONIFYING, MORPHING AND BLENDING OF AN IMAGE"** has been completed by

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The Bonafide students of the Department of Computer Science and Design, Alva's Institute of Engineering and Technology in the **DEPARTMENT OFCOMPUTER SCIENCE AND DESIGN** of the VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI during the year 2023–2024. It is certified that all corrections/suggestions indicated for Internal Assessment have been incorporated in the report deposited in the departmental library. The Mini Project report has been approved as it satisfies the academic requirements concerning the Mini Project workof Computer Graphics and Image Processingsubject prescribed for the Bachelor of Engineering Degree.

Dr. Pushparani M K
Mini Project Guide

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ABSTRACT

The project "Cartoonifying, morphing and blending of an image" explores techniques in computer graphics and image processing to transform and combine images in novel ways. The primary objectives of this project include cartoonifying an input image to produce a stylized, cartoon-like representation, blending two images to create a visually blended result, and morphing between two images to generate intermediate images that smoothly transition between the originals.

The methodologies employed in achieving these objectives leverage various image processing techniques. Edge detection is utilized to extract and emphasize edges in images, essential for creating cartoon-like effects. Color quantization reduces the number of distinct colors in an image, contributing to the simplified and stylized appearance characteristic of cartoons. Blending techniques combine two images based on a specified alpha value, allowing for adjustable degrees of transparency between them. Morphing involves generating a sequence of images that smoothly transition between two given images, achieved through linear interpolation of pixel values.

The implementation is realized using Python and OpenCV libraries, facilitating efficient image manipulation and visualization. The graphical user interface (GUI) component enables users to select images interactively and observe the results of different transformations in real-time. The project's outcomes are demonstrated through visualizations that showcase the original images, processed outputs, and intermediate steps involved in each transformation.

In conclusion, this project highlights the application of fundamental image processing techniques to achieve creative and visually compelling results in the context of digital image manipulation. The methodologies and insights gained contribute to a deeper understanding of computer graphics and image processing principles, with potential applications in fields ranging from entertainment to digital art and beyond.