#### VISVESVARAYA TECHNOLOGICAL UNIVERSITY, BELAGAVI

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A Mini project report on

**“VIRTUAL CALCULATOR USING OPENCV PYTHON”**

Submitted in partial fulfillment of the requirements for the 6th semester CG and image processing lab

**BACHELOR OF ENGINEERING IN**

#### COMPUTER SCIENCE AND ENGINEERING

By

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## CERTIFICATE

This is to certify the project work entitled “**VIRTUAL CALCULATOR USING OPENCV PYTHON”** has been successfully carried out by **Ms. IMPANA A J,** bearing **USN 1SP21CS033**, of VI semester in partial fulfillment for the award of **Bachelor of Engineering in Computer Science and Technology** of the **Visvesvaraya Technological University, Belagavi** during the year **2023- 24.** The project report has been approved as it satisfied the academic requirement in respect of the mini project work prescribed for Bachelor of Engineering.

Signature of Coordinator Signature of HOD Signature of Principal

##### SOUJANYA C N Dr. KRISHNA KUMAR P R B VENKATA NARAYANA

Signature of Internal Examiner Signature of External Examiner

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#### ABSTRACT

This project presents the comprehensive design and implementation of a Virtual Calculator, developed using PyCharm and OpenCV. The Virtual Calculator is an advanced tool that performs a wide range of mathematical operations, offering an intuitive and user-friendly digital interface. Leveraging the powerful computer vision capabilities of OpenCV, the application enhances user interaction through features such as handwritten digit recognition and gesture-based input, making it an innovative solution for modern computational needs.

Developed within the robust environment of PyCharm, the Virtual Calculator ensures seamless integration of code, efficient debugging, and streamlined project management. The application supports both basic arithmetic calculations and complex mathematical computations, including trigonometric, logarithmic, and exponential functions, making it suitable for a diverse audience ranging from students to professionals.

The Virtual Calculator aims to provide a versatile and reliable computational tool that integrates seamlessly with various devices and operating systems. Its extensibility allows for future enhancements and the addition of new features, ensuring it remains a cutting-edge solution in the evolving landscape of digital tools. By combining the strengths of PyCharm and OpenCV, this project demonstrates the potential for innovative applications in the field of computational assistance.

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