

TEAM 5

# BLOOD GROUP IDENTIFICATION



# INTRODUCTION

- The project aims to automate the identification of blood groups by combining Django, a robust web framework, with OpenCV, a powerful computer vision library, to analyze blood sample images efficiently and accurately.
- OpenCV is employed to process and interpret images of blood tests, identifying the ABO and Rh blood groups, while Django provides a user-friendly web interface for uploading images and viewing results.
- By streamlining blood group identification, the system minimizes human error, speeds up the process, and offers a scalable solution for medical diagnostics and blood donation systems.

The background of the slide is a solid dark red color. It is decorated with several stylized red blood cells. In the top left corner, there are two red blood cells, one larger than the other. In the top right corner, there is one red blood cell. On the right side, there is a large, stylized red blood cell with a smiling face, consisting of two black dots for eyes and a small black curved line for a mouth. At the bottom, there are three red blood cells: one on the left, one in the center, and one on the right.

# PROJECT OVERVIEW

## Customer Features:

1. Create a new user account to access the application
2. Login with your username and password
3. Input for Uploading an Image
4. Output to display the Identified Blood Group

# MILESTONES

1

The system allows users to create an account on the registration page, log in to their account to access the profile page, and upload images on the profile page for identification.

2

Implemented OpenCV functions to process and analyze the images, determining the basic conditions for identifying the blood type.

# MILESTONES

3

Implemented the functions to process and display the uploaded images on the web page with contours.

4

Executed morphological operations to structure the uploaded images, performed agglutination analysis, and identified the blood type.



# Home Page

## Blood Group Test

[Login](#)[Signup](#)

### Welcome to Blood Group Identification Page!

The ABO Blood Group System includes four major blood groups and eight distinct blood types. These groups are defined by the presence or absence of two specific antigens and antibodies - A and B :

- Group A - Antigen A and Antibody B.
- Group B - Antigen B and Antibody A.
- Group AB - Antigen A and B, no Antibodies.
- Group O - No Antigens, both A and B Antibodies.

#### Rh factor:

- Agglutination with anti-D serum indicates Rh-positive (e.g., A+).
- No agglutination indicates Rh-negative (e.g., A-).

Upload Blood Cell Image



Click here to upload  
images

Get Started

# Signup Page

Welcome to Blood Group Identification Page!!!

## Register

Username:

Password:

Password confirmation:

Register

Hello, User

Enter your login details to use site features

Login Here



# Login Page

Welcome to Blood Group Identification Page!!!

Hello, User

Enter your details to register for  
using a site features

Register Here

Login

Username:

Password:

Login



# Profile Page

Welcome to Blood Group Identification Web App!

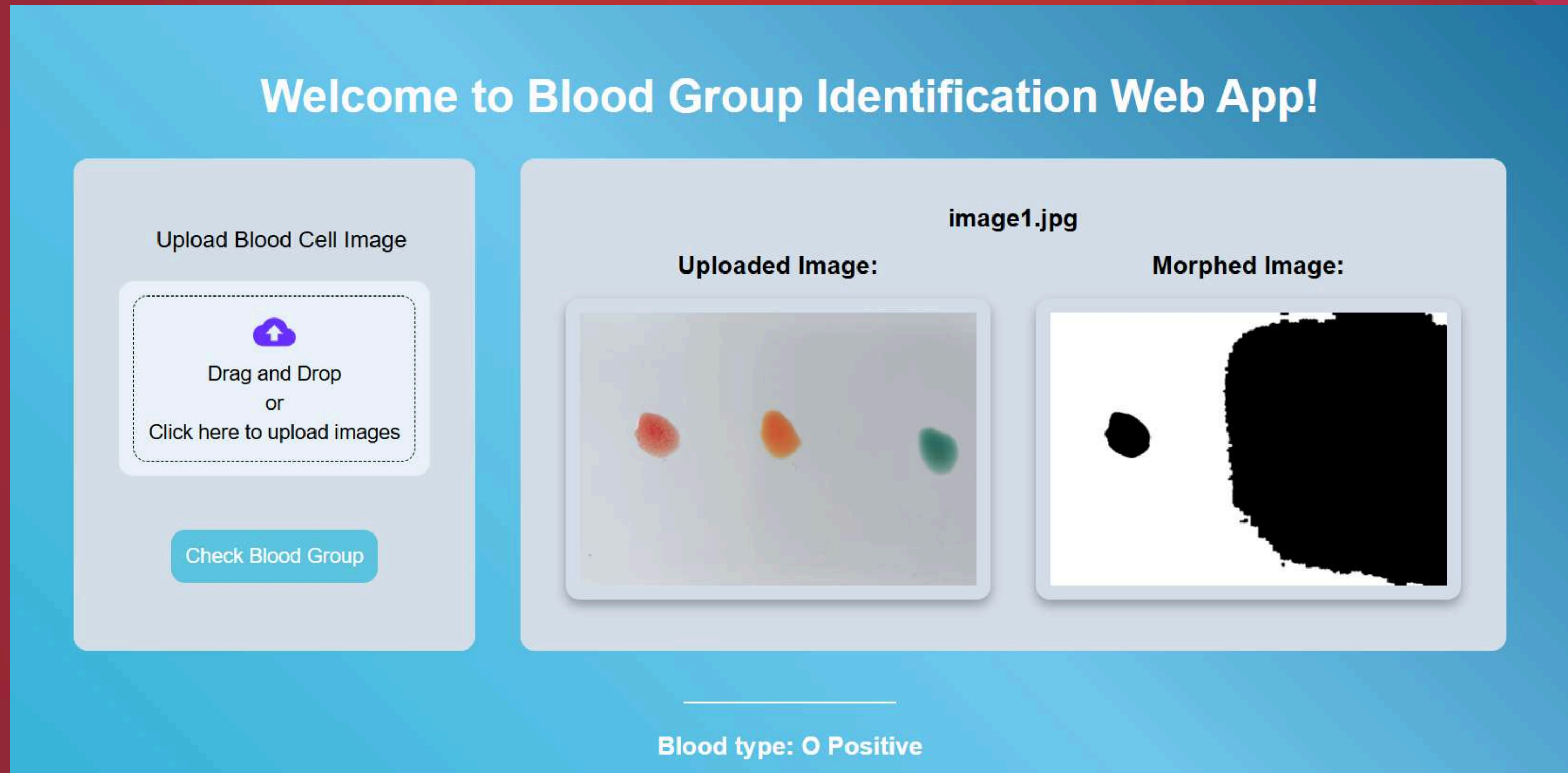
Upload Blood Cell Image



Drag and Drop  
or  
Click here to upload images

Check Blood Group

# Outputs



# Welcome to Blood Group Identification Web App!

Upload Blood Cell Image



Drag and Drop  
or  
Click here to upload images

Check Blood Group

image2.jpg

Uploaded Image:



Morphed Image:



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**Blood type: A Negative**



# Project Demo



# ADVANTAGES

- Rapid Results
- Remote Access
- Reduced Human Error
- Cost-Effective

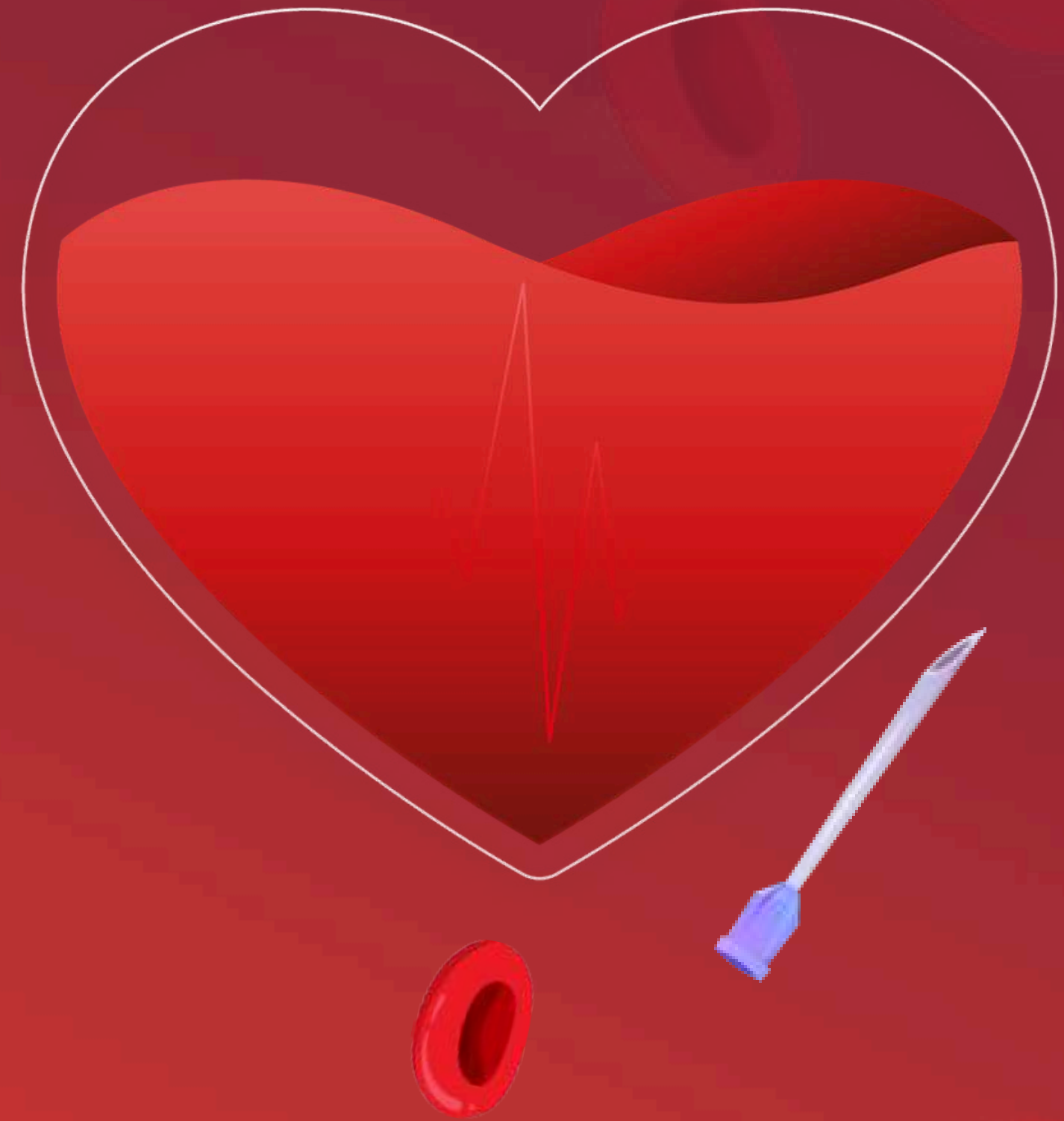
# CONCLUSION

This project simplifies blood group identification by utilizing Django and OpenCV to provide quick and accurate results critical for medical applications. The user-friendly web interface ensures ease of operation, while automation reduces human error, improving system reliability. Built with scalability in mind, the solution can be enhanced with additional diagnostic features, making it adaptable to future healthcare innovations.



# TEAM MEMBERS

1. VAMSI KRISHNA BANDARUPALLI
2. DEEPAK
3. KABILAN



The background of the image is a solid dark red color. Scattered throughout the background are numerous red blood cells, depicted as biconcave discs in various sizes and orientations. Some cells are in sharp focus, while others are slightly blurred, creating a sense of depth. The cells are distributed across the entire frame, with a higher concentration around the central text.

*THANK YOU*