



# **PORTFOLIO**

By Clara Adriana Sidauruk

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# introducing **ABOUT ME**

I am a student of Informatics Engineering major, final year. I have a keen interest in pursuing a career as a data scientist. Throughout my academic years, i have gained a strong comprehension of data processing and enabled me to think systematically, logically, and coherently. I am proficient in Python programming language, especially leveraging its capabilities to manipulate and analyze data effectively. Therefore, I own excellent skills in data analysis and data visualization, with a solid foundation in machine learning, either in theory or its practical applications. As an active and collaborative learner, i thrive in diverse environments, embracing opportunities to collaborate with others.



**CLARA ADRIANA SIDAUruk**  
Data Scientist

# SKILLS

## HARD SKILLS

- Data Processing
- Data Visualization
- Machine Learning
- Deep Learning
- Computer Vision
- Python

## SOFT SKILLS

- Good Communication
- Think Critically and Creatively
- Leadership
- Collaboration and Teamwork
- Time Management

# EDUCATION BACKGROUND

[READ MORE](#)



**2020 - 2024**  
**State Polytechnic of Malang**

GPA : 3.76 / 4.00  
Undergraduated in Information Technology



**February 2023 - Juni 2023**  
**Startup Campus**

GPA : 4.00/4.00  
Graduated in Artificial Intelligence

# project PORTFOLIO

01

**Project**

SKIN QUALITY ANALYSIS  
SYSTEM BASED ON COMPUTER  
VISION

02

**Project**

MNIST HANDWRITTEN DIGIT  
CLASSIFICATION USING PYTORCH

03

**Project**

TWITTER EMOTION  
RECOGNITION

04

**Project**

YOLO FOR OBJECT DETECTION

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**Project**

MOVIE REVIEW APPLICATION

# PROJECT 01

## SKIN QUALITY ANALYSIS SYSTEM BASED ON COMPUTER VISION

The screenshot shows a web application interface for skin quality analysis. At the top left is the logo "GVM" with the tagline "GOOD VIBES MOOD". The top right features a navigation bar with links: Home, About, SkinAI, and Contact Us. The main content area has a dark blue background with a large, semi-transparent image of a person's face. Overlaid on this image is the text "Welcome to the Project: Facial Problem Detection". Below this, there are two orange buttons: "Our Product" and "Try our Technology". To the right of the face image is a grid of 12 small images, each showing a different skin condition with its name labeled below it. The conditions are: rosacea, Eksim, acne nodules, kutil filiform, fungal acne, milia, panu, Dermatitis perioral, herpes, folikulitis, whitehead, flek hitam, blackhead, and Pustula.

Condition	Image Description	Approximate Coordinates
rosacea	Small red papules on facial skin	Top Left
Eksim	Large, raised, scaly patches on skin	Top Middle
acne nodules	Large, painful lumps beneath skin surface	Top Right
kutil filiform	Small, finger-like skin tags	Middle Left
fungal acne	Dark, circular spots on skin	Middle Middle
milia	Small, white,粟-like bumps	Middle Right
panu	Large, raised, reddish-brown lesions	Bottom Right
Dermatitis perioral	Red, swollen, and crusty skin around mouth	Bottom Left
herpes	Small, fluid-filled blisters on skin	Bottom Middle
folikulitis	Inflammation of hair follicles	Bottom Middle
whitehead	Small, closed comedones on skin	Bottom Middle
flek hitam	Black, flat-topped papules on skin	Bottom Right
blackhead	Open comedones on skin	Bottom Right
Pustula	Large, pus-filled blisters on skin	Bottom Right

# Project #1

## BACKGROUND

The skin is the outermost layer of the human body that is most frequently exposed to the surrounding environment, especially the skin on the face. This makes the facial skin susceptible to problems such as acne, blackheads, fungal infections, and various other skin issues that often overwhelm individuals in dealing with these skin problems.

# Project #1

## PROBLEM

- The difficulty in accurately identifying facial skin problems.
- Lack of knowledge about the ingredients contained in skincare products.
- Difficulty in selecting products that are suitable for skin type and issues.
- The abundance of skincare products available in the market makes it challenging to make the right choice.

# Project #1

# SOLUTION



## Image Classification

Pengembangan AI menggunakan teknologi deteksi gambar untuk mengidentifikasi permasalahan kulit wajah.



## Recommendation

Memberikan rekomendasi bahan-bahan yang sesuai untuk merawat masalah kulit tersebut.



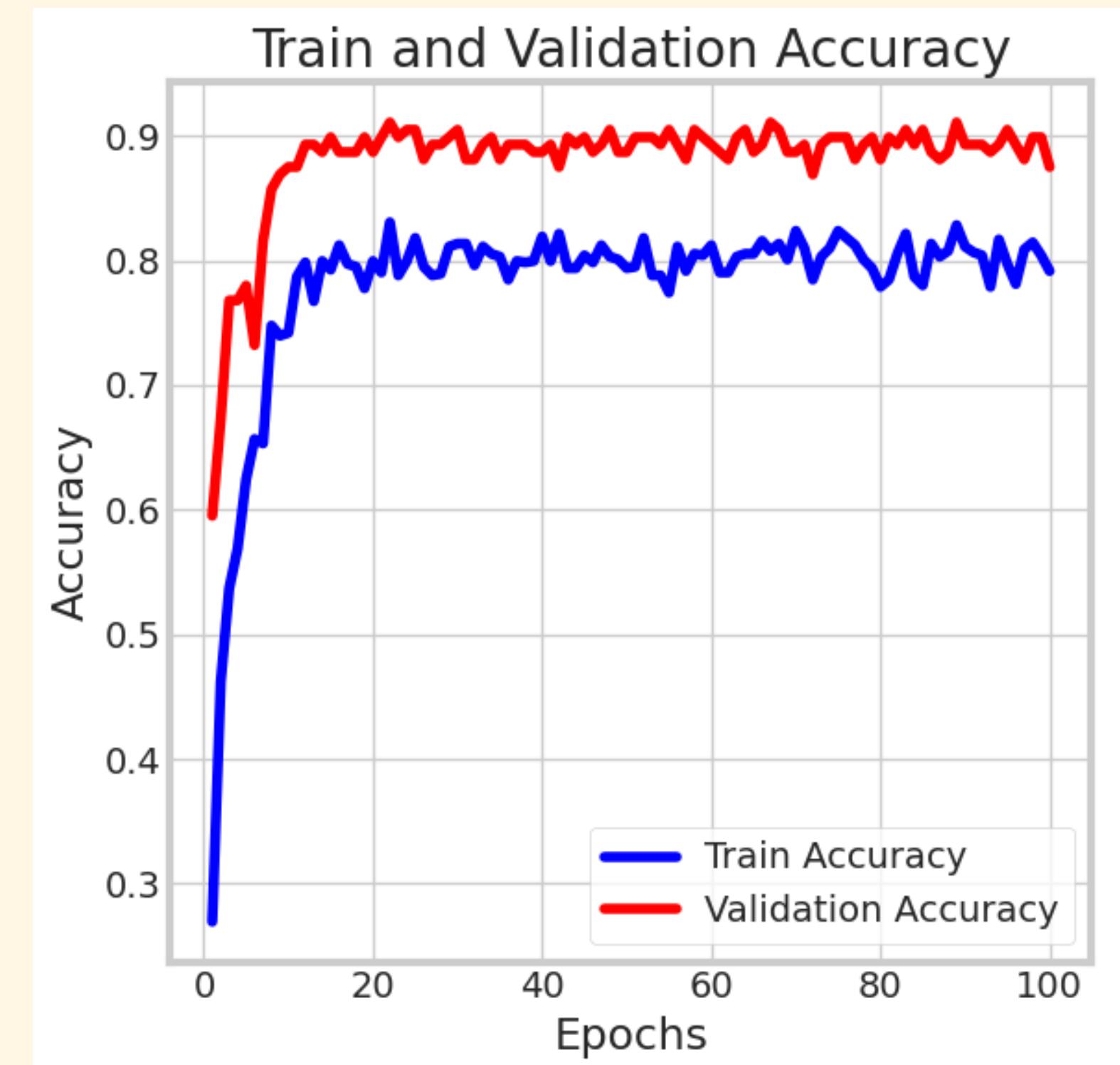
## Resource

Menyediakan sumber informasi yang dapat digunakan sebagai referensi yang akurat untuk informasi tentang bahan-bahan perawatan kulit.

# Project #1

CNN for Analysis Skin  
based on Computer Vision,  
managed to get 97% accuracy.

# SOLUTION

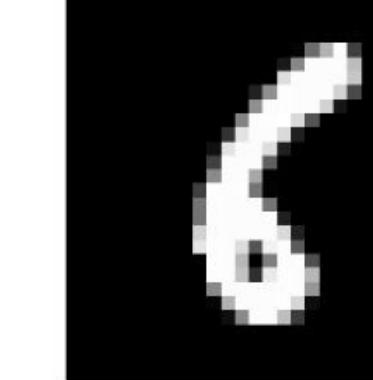
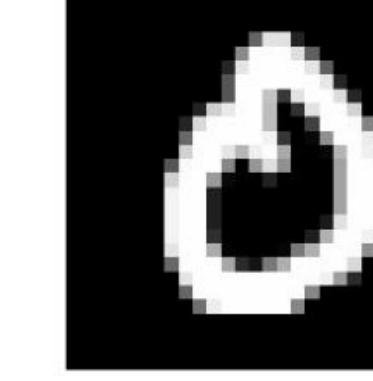


# PROJECT 02

## MNIST HANDWRITTEN DIGIT CLASSIFICATION USING PYTORCH

```
else:  
    ax[c//5][c%5].set_title('Label: {}, Prediction: {}'.format(label, y_pred[c]),  
    fontsize=25, color='red')  
    ax[c//5][c%5].axis('off')  
plt.show()
```

Python

Label: 2, Prediction: 2	Label: 9, Prediction: 9	Label: 6, Prediction: 6	Label: 3, Prediction: 3	Label: 1, Prediction: 1
				
Label: 5, Prediction: 5	Label: 4, Prediction: 4	Label: 0, Prediction: 0	Label: 3, Prediction: 4	Label: 9, Prediction: 9
				

# Project #2

## BACKGROUND

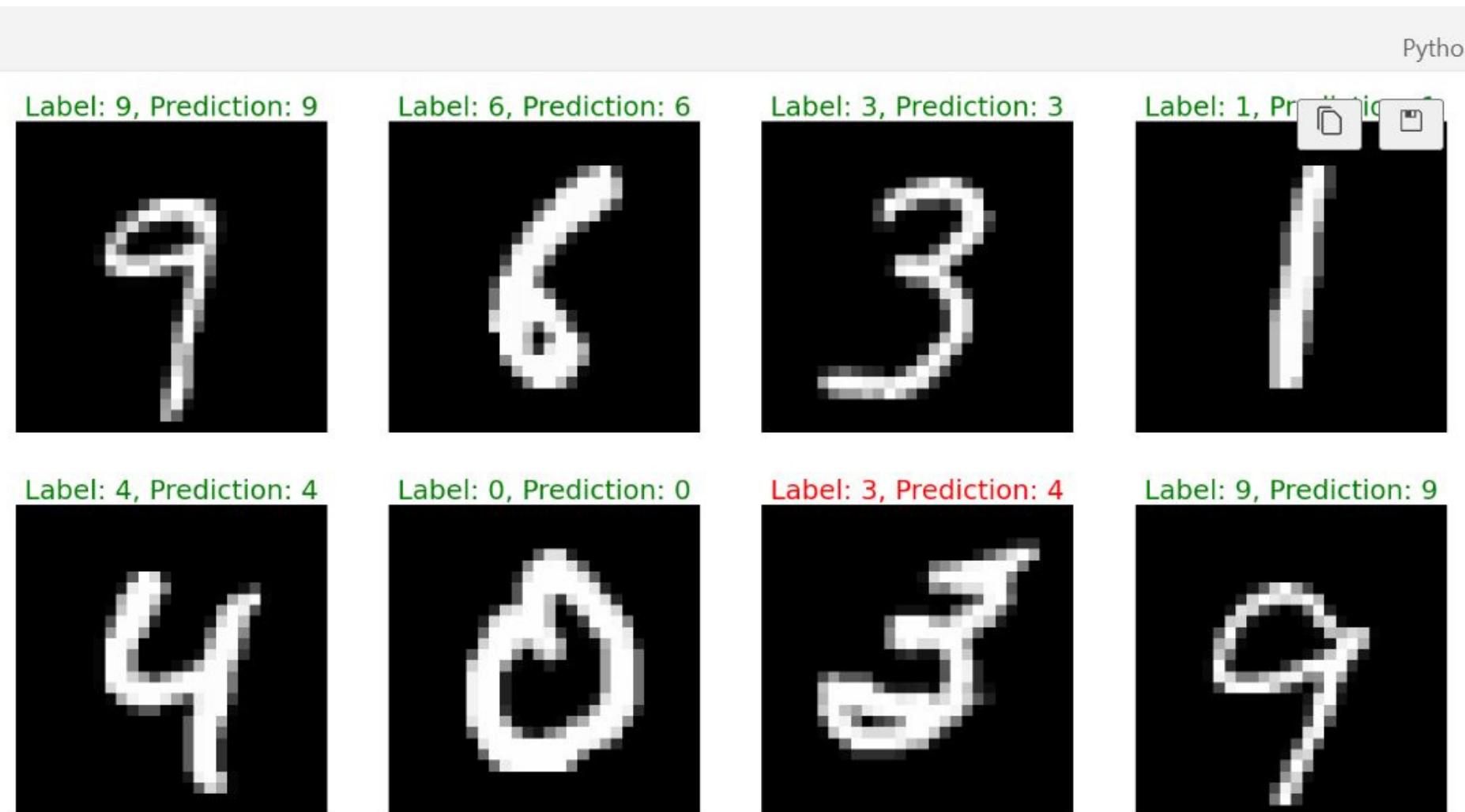
In various industries and sectors such as document processing, logistics, banking, and archival purposes, there is a recurring challenge of accurately and efficiently recognizing and classifying handwritten digits. Traditional methods of digit recognition often fall short due to their reliance on complex algorithms and manually engineered features that struggle to generalize across different handwriting styles and variations in writing quality. As a result, the manual recognition of handwritten digits becomes a time-consuming and error-prone process, particularly when dealing with large volumes of data.

# PROBLEM

- The document processing industry requires automated recognition of handwritten digits, such as invoice numbers, identification numbers, or dates, to streamline processing and reduce errors.
- In shipping and logistics, manually written postal codes on packages or letters pose a challenge for efficient and error-free processing and delivery.
- The banking sector faces difficulties in verifying manually written bank account numbers on checks, leading to potential errors in transaction processing.
- Handwritten documents in corporate archives or historical collections need to be digitized, but the recognition of handwritten text poses a significant challenge.

# Project #2

# SOLUTION



Overall, these issues highlight the need for automated solutions that can accurately recognize and classify handwritten digits, validate bank account numbers, and efficiently digitize handwritten documents, among others. Of course MNIST is here to be the right solution

# PROJECT 03

## TWITTER EMOTION RECOGNITION

```
import twint
import nest_asyncio
nest_asyncio.apply()
import time
import pandas as pd
import os
import re

c = twint.Config()
c.Limit = 5000
c.Username = "collegemenfess"
c.Since = "2022-12-05"
```



# Project #3

## BACKGROUND

Twitter is a popular social media platform where users share their thoughts, opinions, and emotions in short messages called tweets. With millions of active users and a vast amount of data being generated every second, Twitter has become a valuable source for understanding public sentiment, conducting market research, and monitoring social trends. However, analyzing the emotional content of tweets manually is a time-consuming and challenging task, especially at scale.

# Project #3

# PROBLEM

- Manual analysis of emotions in tweets is time-consuming and inefficient, especially when dealing with a large volume of data generated on Twitter.
- Traditional methods of emotion recognition, such as manual annotation or keyword matching, lack the accuracy and ability to capture the nuanced and complex nature of human emotions expressed in tweets.
- The rapid pace of tweets being posted in real-time makes it challenging to keep up with the ever-changing landscape of emotions and sentiment on Twitter.
- The absence of reliable emotion recognition tools on Twitter hinders the ability to harness the wealth of emotional data available on the platform for market research, brand monitoring, and customer insights.

# Project #3

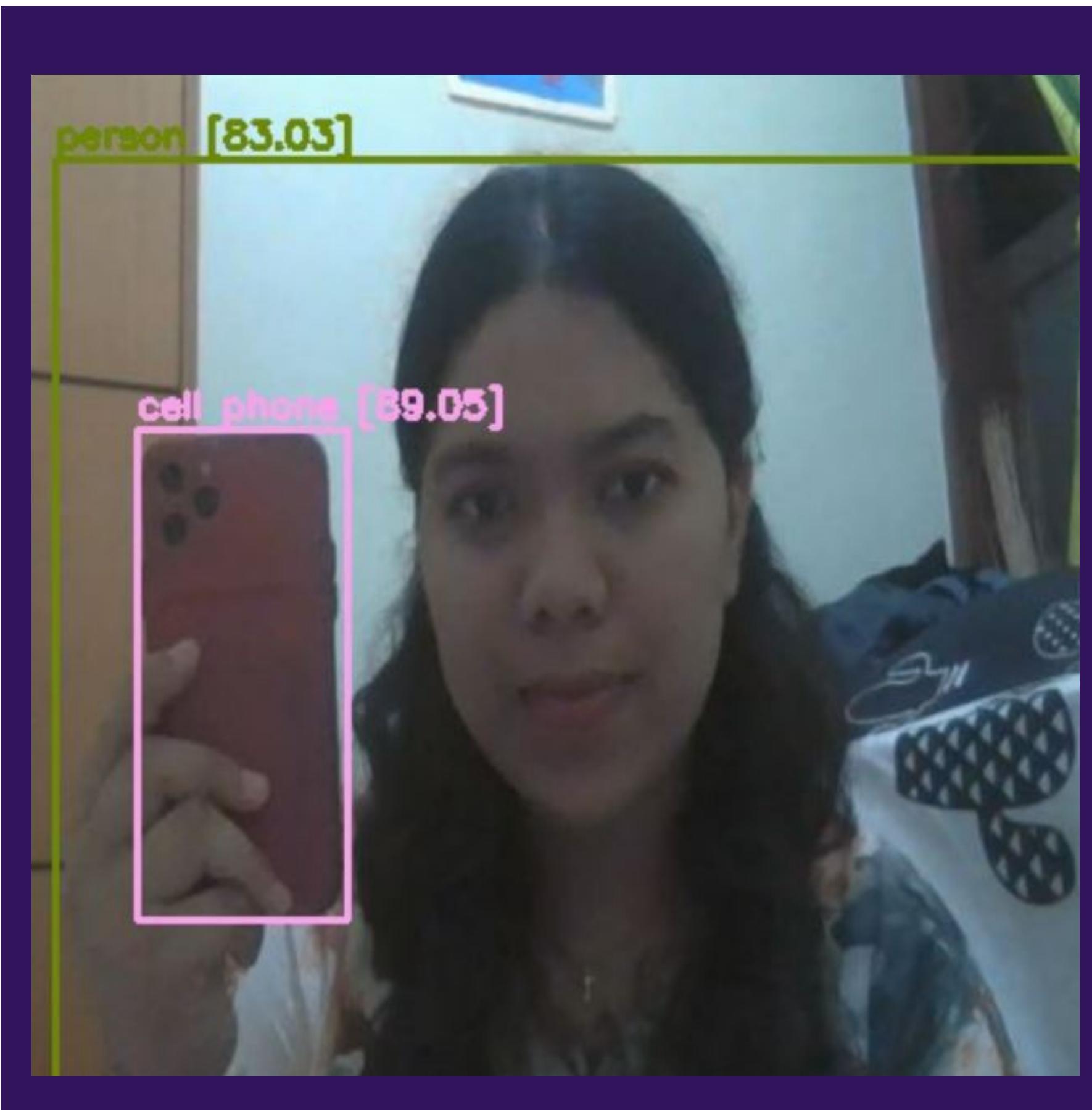
# SOLUTION

By implementing Twitter emotion recognition through tweet prediction, organizations and individuals can benefit from automated and accurate analysis of emotions in tweets. This enables them to gain valuable insights, monitor public sentiment, respond to customer feedback promptly, track emerging trends, and make data-driven decisions in real-time.

Compound score	Sentiments	label	Result Prediction
0.0000	Netral	1	Neutral
0.0000	Netral	1	Neutral
0.5106	Positif	2	Neutral
0.0000	Netral	1	Neutral

# PROJECT 04

## YOLO FOR OBJECT DETECTION



### Running on Webcam Video

```
# start streaming video from webcam
video_stream()
# label for video
label_html = 'Capturing...'
# initialize bounding box to empty
bbox = ''
count = 0
while True:
    js_reply = video_frame(label_html, bbox)
    if not js_reply:
        break
```

# Project #4

## BACKGROUND

Object detection is a fundamental task in computer vision that involves identifying and locating objects within an image or video. It has numerous applications across various industries, including surveillance, autonomous vehicles, retail, and healthcare. Traditional object detection methods often rely on manually engineered features and complex algorithms, which can be time-consuming and limited in their ability to handle real-world complexities, such as occlusion and object variation.

# Project #1

## PROBLEM

The problem arises from the difficulty of accurately and efficiently detecting objects in images or videos manually. This task requires meticulous examination and identification of objects, which can be challenging due to various factors such as occlusion, scale variation, cluttered backgrounds, and object deformations. Manual object detection becomes even more challenging when dealing with large datasets or real-time applications where prompt detection is crucial.

# Project #4

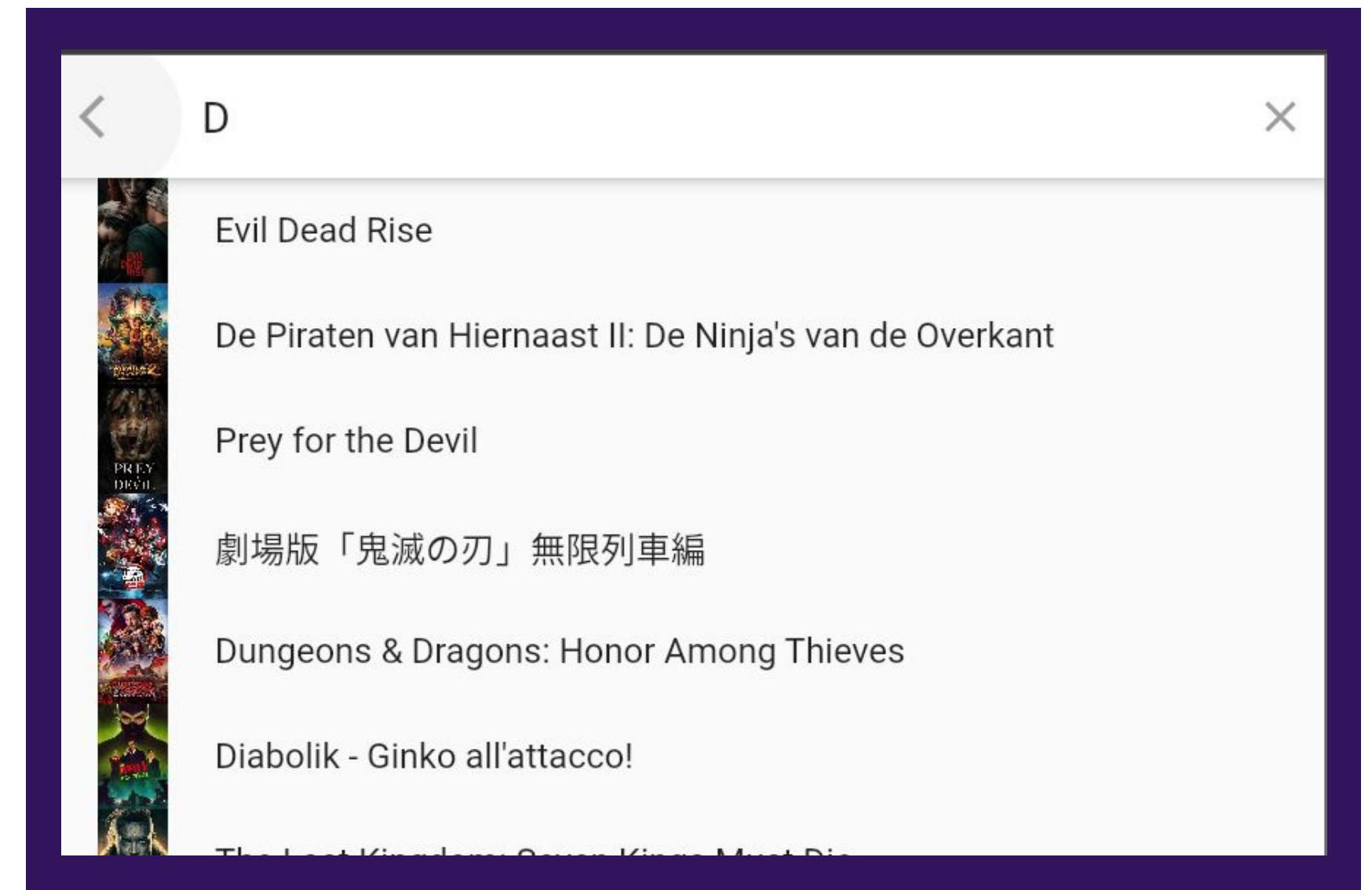
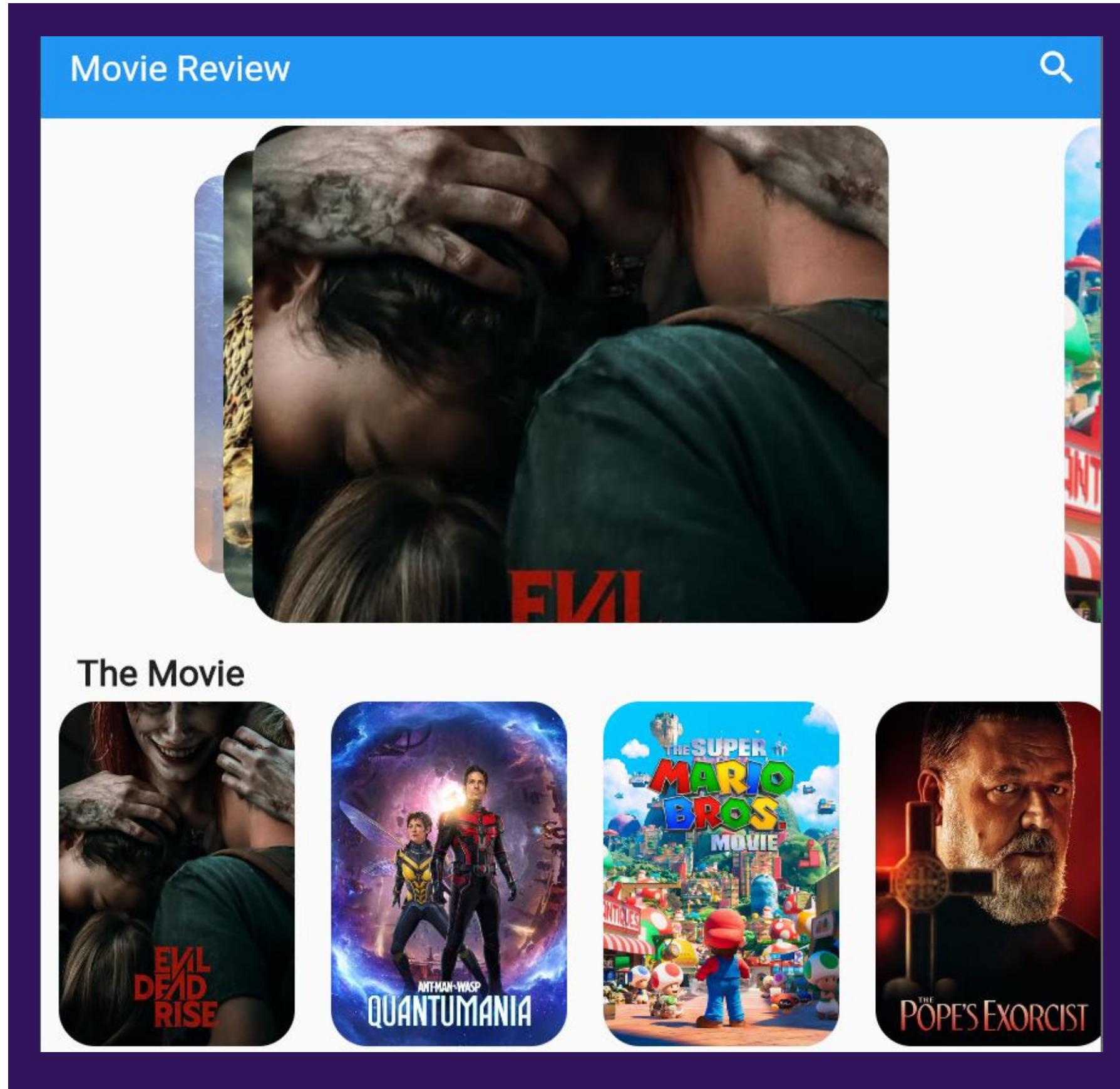
# SOLUTION



The YOLO (You Only Look Once) algorithm provides an effective solution to the challenges of manual object detection. By leveraging deep learning techniques, YOLO enables accurate and efficient detection of objects in images or videos. With its single-pass approach, YOLO significantly reduces processing time and offers real-time object detection capabilities. This makes it an ideal solution for applications such as autonomous vehicles, surveillance systems, and robotics, where prompt and accurate object detection is crucial.

# PROJECT 05

## MOVIE REVIEW APPLICATION



# Project #5

## BACKGROUND

In today's era, there are numerous films that don't meet our expectations. Often, we feel like we've wasted our time and money watching those films. The emergence of this application provides great assistance to movie enthusiasts. By using this application, we can find information about the cast, film synopsis, and its rating. This way, we no longer have to worry about watching films that don't align with our expectations.

# Project #5

## PROBLEM

Where can we find a place that provides a collection of films with film ratings, synopses, and even the cast members featured in those films?

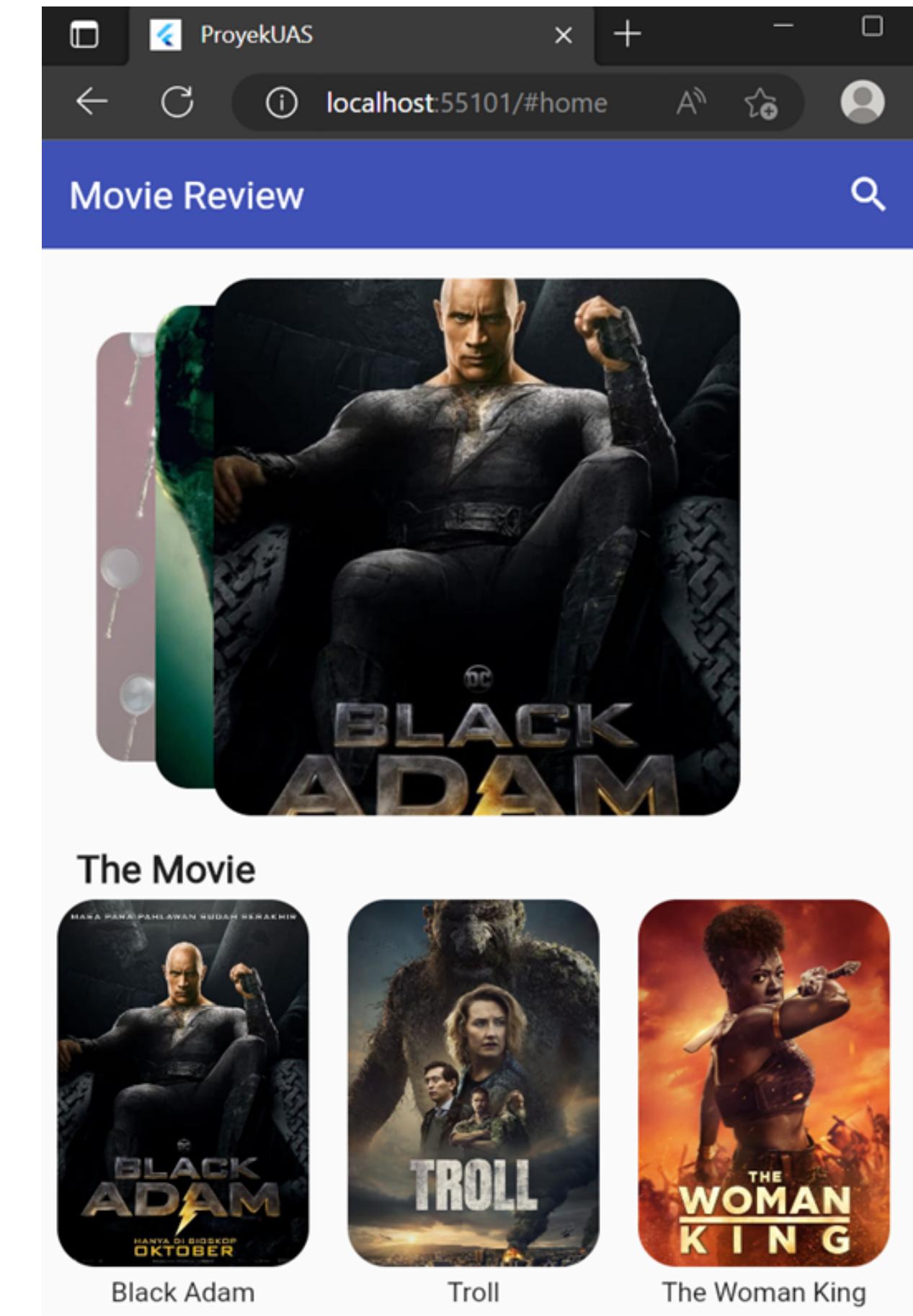
# Project #5

## SOLUTION

The Movie Review application is undoubtedly the right solution to the problem mentioned above. This application aims to provide film information such as cast members, film synopses, and film reviews.

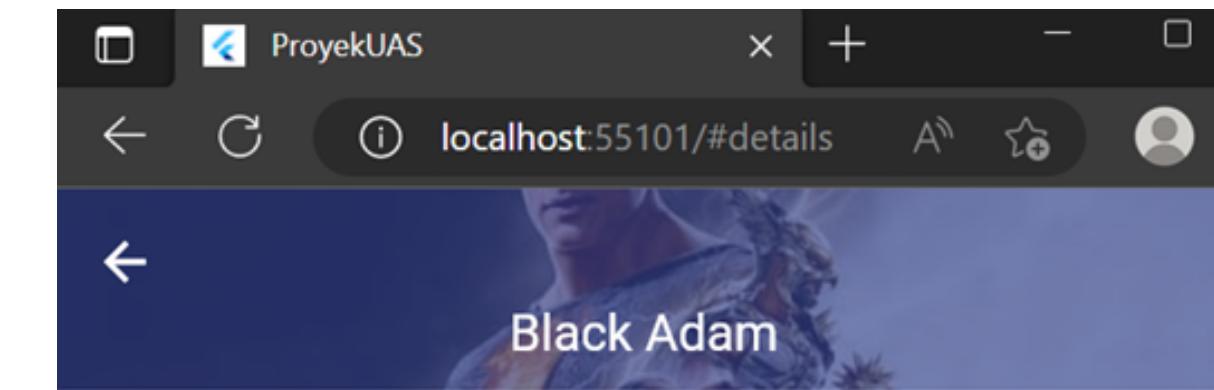
# Project #5

This is the initial display / home screen of the Movie Review application.



# Project #5

This is the Film Detail page of the selected movie. In this film detail, you can find the description, cast members, and film rating.



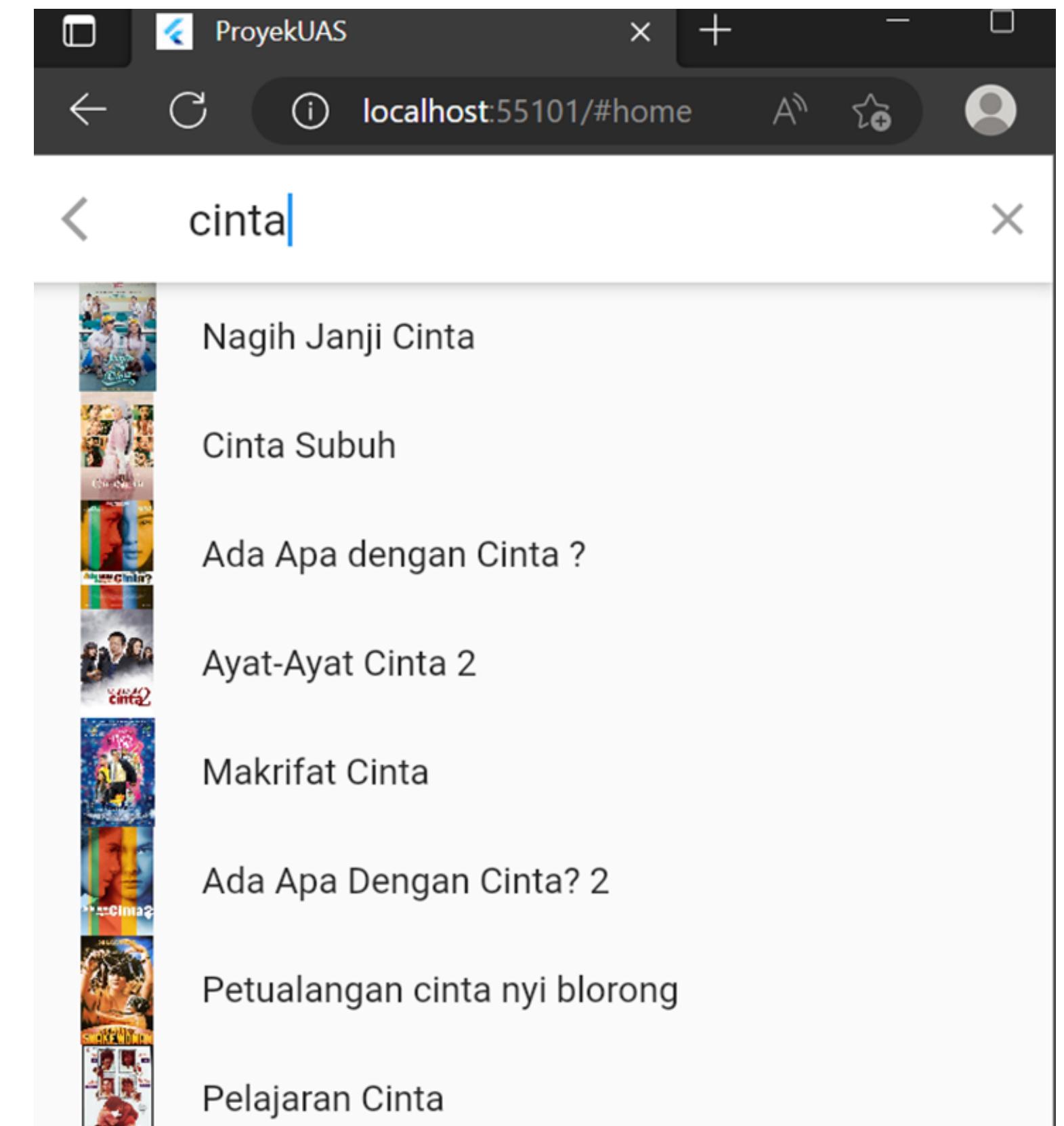
Hampir 5.000 tahun setelah dia dianugerahi kekuatan maha kuasa para dewa Mesir—dan dipenjara dengan cepat—Black Adam dibebaskan dari makam dunia winya, siap untuk melepaskan bentuk keadilannya yang unik di dunia modern.

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Four small, square-shaped portraits of actors from the movie "Black Adam": Dwayne Johnson (as Black Adam), Aldis Hodge (as Hawkman), Zachary Levi (as Shazam), and Milana Vayntrub (as Mary Bromfield).

# Project #5

This is the search feature of the application. With this search feature, we can search for films by entering the desired keywords.



# CERTIFICATE

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Sertifikat Finalis - JTI-Squad

# CERTIFICATE

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**THANKS  
FOR  
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