Hack-ED V1.0

Team : “Team Alpha”

Members

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Theme

Maths Problem Solving using image processing

Build an application that can automatically evaluate handwritten mathematical problems.

Eg. given an equation 2+3 = 5, it should be able to tell whether the answer is correct or not.

Preferred tech stack: A mobile App that consumes Python REST APIs.

Minimum Requirements

Start with simple arithmetic operations on integers - Addition, Subtraction, Multiplication, Division. It should follow the BODMAS principle.

Workflow

Tech Stack : Flutter

To develop applications for Android, iOS, Linux, Mac, Windows, Google Fuchsia, and the web from a single codebase.

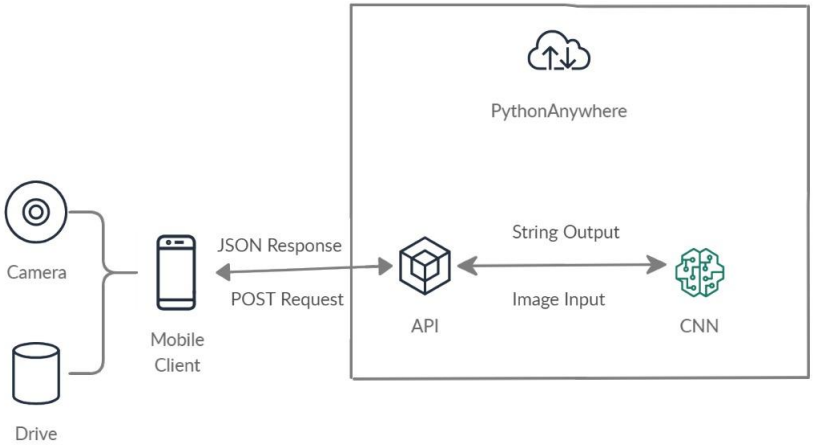
Tech Stack : Django

Django REST framework is a powerful and flexible toolkit for building Web **APIs**.

Model : CNN (Convolutional Neural Network)

A class of deep neural networks, most commonly applied to analyzing visual imagery.

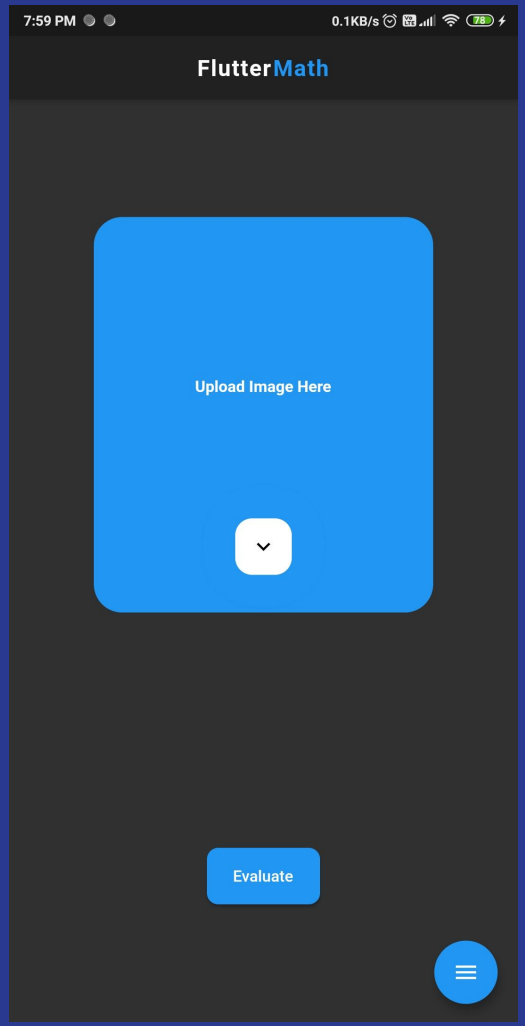
Architecture Diagram



Solution

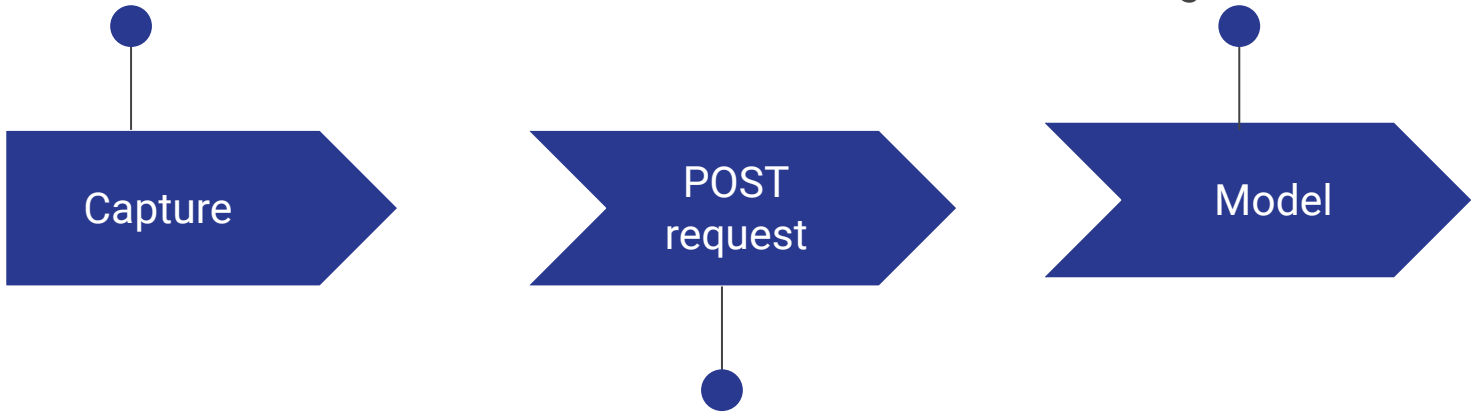
FlutterMath

Github
https://github.com/Shreeyash836Jejurkar/Hacker-Earth



The mobile app is used to get image. The image can either be captured or uploaded from local storage.

Based on calculated weights the pre-trained model will evaluate the equation and verify if the answer is correct or wrong



The application makes POST request to the API and the it predicts using the model and returns a json.

7:56 PM 0.2KB/s

FlutterMath

Upload Image Here

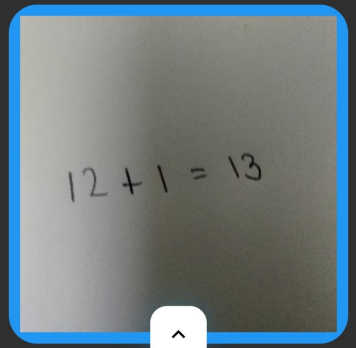
Analysis

Your Result

Evaluate

8:04 PM 1.1KB/s

FlutterMath



Analysis

The Answer is Correct

Evaluate

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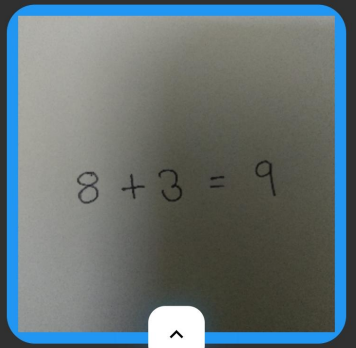
FlutterMath

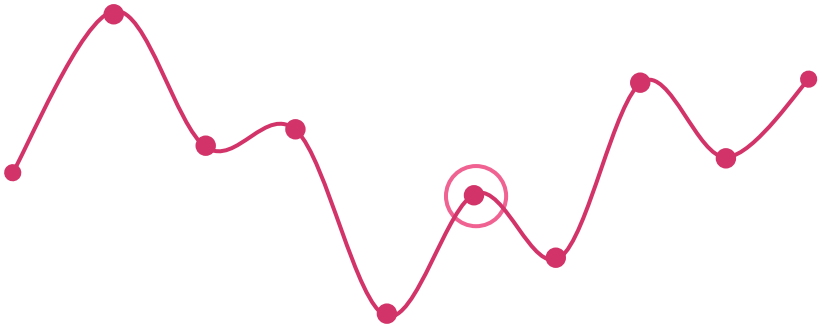


Analysis

The Answer is Wrong

Evaluate

Future Work



- More complex calculation can be also handled by training datasets like fractions , exponents etc.
- Can also train model to solve linear as well as quadratic equation in terms of one variable .