SYNOPSIS

PROJECT TOPIC: SCANCULATOR

Group Members:

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Aim and Scope of The Project:

To scan the simple mathematics equation and solve than by using python libraries.

Expected Outcomes:

After the completion of the project, we can solve the simple mathematic equations.

Detailed Description:

In this project we will use a huge dataset of images of all digits or all mathematical symbols. We will train our modal according to the dataset. After applying various type of algos of machine leaning, we will use the most accurate algo in our model. The completion of the project we can scan the handwritten equation and solve these by the help of various python libraries and will give the solution for the problem.

Data set:

There is data of images of all mathematics symbols like all digits or mathematic operators etc.
https://www.kaggle.com/clarencezhao/handwritten-math-symbol-dataset

Application:

1. We can identify the mathematical symbol in a handwritten equation.
2. We can solve the handwritten equation.

Requirement:

A. Hardware Requirement (Minimum)

- I3 processor-based computer
- 4 GB RAM
- 6 GB Hard Disk space

B. Software Requirement (Minimum)

- Windows 7
- Python 3.7
- Python Modules
- Jupyter Notebook
- PyCharm

Technology Used:

Machine Learning

Future Scope and Limitation:

The scope of this paper is handwritten digit recognition regarding the application of machine learning algorithms based on image pre-processing and feature extraction. Additionally, the purposes are not only to improve the current recognition performance, but also to seek the highest reliability in the applications of handwritten digits.

This thesis has the following limitations:

- A handwritten digit dataset is vague in essence because there may not always be perfectly straight lines, and different people's writings are more or less sloped.
- The curves are not necessarily smooth like the printed characters.

- The recognition system sometimes shows inconsistent results due to the similarly shaped numerals.
- All handwritten digital images that are final tested do not automatically detect boundaries and cropping as well.
- The time assigned to this paper was five months. Due to the limited amount of time, the proposed model was not further optimized.

Signature of Supervisor: _____