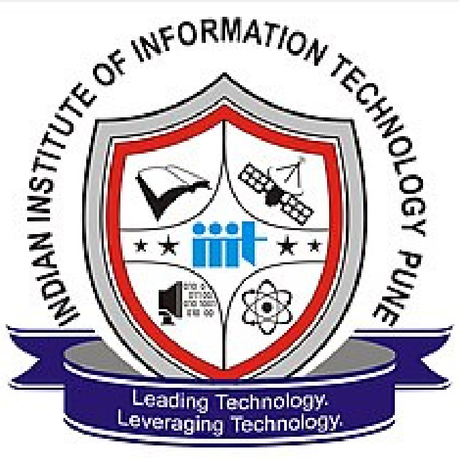


# TablifyMe

**TRANSFORMING IMAGES INTO .CSV, EFFORTLESSLY**

SUPERVISOR NAME : **Dr. Shrikant Salve**

# 02 Table of Content

# Team Members

| | |
|---|---|
| Jalaj P Patel | 112115104 |
| Bhargav Rathod | 112115128 |
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| Priyanshu Sudhakar | 112115119 |

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# Problem Statement

Converting image-based data, such as tables in pictures, into structured Excel-ready formats is a pressing challenge. Our project aims to develop an efficient machine learning solution that allows users to effortlessly upload image data and receive it as a structured table, saving time and enhancing data usability across various industries and domains.

# Methodology

1. **Data Collection & Preprocessing:**

Gather diverse image datasets with tables.Clean and standardize images for consistency

**2. Image Recognition & Text extraction**

Use CNNs to locate tables in images.Apply OCR for text extraction.

**3. Data Structuring**

Convert extracted data into structured tables

**4. Machine Learing Training & Evaluation**

Train models with validation and testing.Assess accuracy and efficiency with metrics.

# Methodology

## 5. User-Friendly Interface:

Create an intuitive UI for image upload and data retrieval.

## 6. Excel Integration & Export:

Allow direct export to Excel.

## 7. User Testing & Iteration:

Gather user feedback for enhancements.

# Algorithm

## Table Detection:

- Define a function, "table_detection," to process an image file.
- Open and convert the image to RGB format.
- Resize the image for better processing.
- Utilize the "TableTransformerForObjectDetection" model to detect tables within the image.
- Visualize the detected tables on the image.
- Return the coordinates (boxes) of the detected tables.

## Cell Detection:

- Define a function, "cell_detection," to process an image file.
- Convert the image to RGB and resize it.
- Extract the cells within the image.
- Visualize the detected cells on the image.
- The cells are extracted with the model "TableTransformerForObjectDetection" from the "table-transformer-structure-recognition" family.

# Work Flow Diagram

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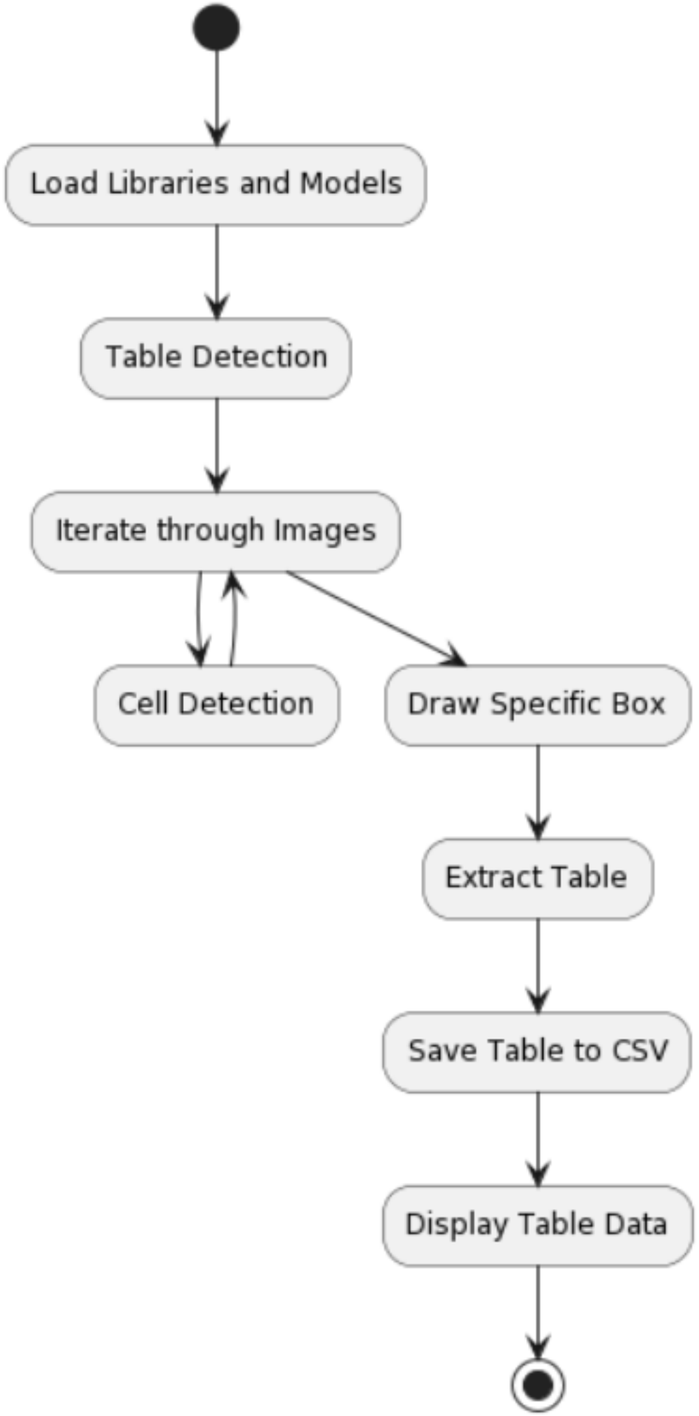

# Results & Discussion

| Flavor | Scoops sold | Contains chocolate? | Smooth or chunky? |
|---|---|---|---|
| Vanilla | 300 | No | Smooth |
| Chocolate | 450 | Yes | Smooth |
| Cookies & Cream | 275 | Yes | Chunky |
| Mint Chocolate Chip | 315 | Yes | Chunky |
| Fudge Brownie | 375 | Yes | Chunky |
| Rocky Road | 250 | Yes | Chunky |

**Input Image**

data

| Flavor | Scoops sold | Contains chocolate? | Smooth or chunky? |
|---|---|---|---|
| **Vani** | 300 | No | Smoo |
| **Choc** | 450 | Yes | Smoo |
| **Cook** | 275 | Yes | Chun |
| **Mint** | 315 | Yes | Chun |
| **Fudg** | 375 | Yes | Chun |
| **Rock** | 250 | Yes | Chun |

**Output Table**

# Results & Discussion

## Performance Evaluation:

**Accuracy:** Discuss the accuracy of your image-to-table conversion system in detecting and extracting tabular data from a variety of images. Include metrics and statistics that demonstrate the system's overall performance. Efficiency: Evaluate the system's efficiency in terms of processing time and resource usage. Provide insights into its scalability and responsiveness.

## User Experience:

**Usability:** Describe the user interface and its intuitiveness. Evaluate user feedback and any improvements made based on user testing.User Satisfaction: Present feedback from users who have utilized the system for converting images into tables. Discuss areas where user satisfaction was high and areas where improvements may be needed.

## Real-world Application:

The project has applications in data digitization, automation, and data analysis across various industries.

# Future Scope

**Fine-Tuning and Model Optimization:**

**Support for Multiple Data Formats:**

**Batch Processing and Automation:**

**Scalability and Cloud Integration:**

**Commercialization and Licensing:**

# Conclusion

- our image-to-table conversion project has showcased its potential to revolutionize data extraction from visual content.
- The project's success in accurately detecting tables, locating cells, and extracting structured data demonstrates its practicality and efficiency.
- As we embark on the journey of future enhancements, including model fine-tuning, user-friendly interfaces, and support for multiple data formats, we aim to offer a powerful and versatile tool that addresses the evolving needs of data digitization and automation across various industries.

# Thank You

**For watching this presentation**