SOLUTION ARCHITECTURE

Date	November 2nd, 2023
Team ID	PNT2022TMID592425
Project Name	ASL – Alphabet Recognition
Maximum Marks	2 Marks

Initial Setup

- Create a new GitHub repository #GitHub
    - Initialize with README.md
    - Add. gitignore
    - Set up branch protection rules
- Set up virtual environment #Python
    - Install necessary packages
        - NumPy
        - Pandas
        - TensorFlow
        - Keras
        - Matplotlib
    - Verify package installation

Data Collection

- Collect ASL sign images #ImageData
    - Define sign categories
    - Source images
    - Verify image quality

Data Preprocessing

- Clean and preprocess image data #DataCleaning
    - Resize images
    - Normalize pixel values
    - Split data into training and test sets

Model Building

- Build Convolutional Neural Network (CNN) model #CNNModel
    - Define model architecture
    - Compile model
    - Train model
    - Evaluate model performance

Deployment

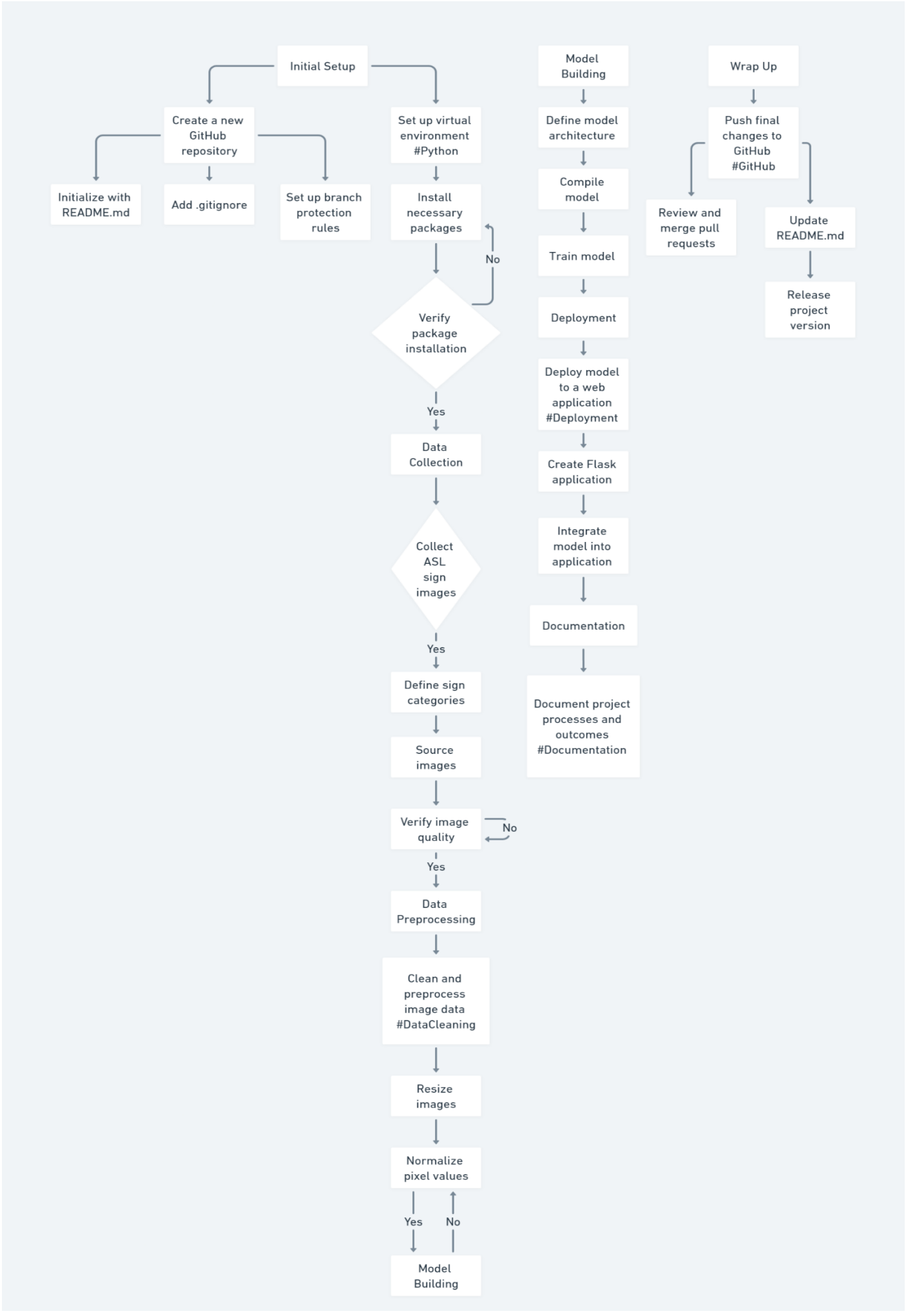
- Deploy model to a web application #Deployment
    - Create Flask application
    - Integrate model into application
    - Test application functionality

Documentation

- Document project processes and outcomes #Documentation
    1. Write project summary
    2. Document data collection process
    3. Explain data preprocessing steps
    4. Detail model architecture and training process
    5. Discuss model performance
    6. Describe deployment steps
    7. Reflect on project outcomes and potential improvements

Wrap Up

- Push final changes to GitHub #GitHub
    - Review and merge pull requests
    - Update README.md
    - Release project version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