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**Summary of the Project and Approach**

The primary aim of this task was twofold: first, to identify and locate the license plates affixed to the vehicles in the images, and second, to perform character recognition on these license plates, deciphering the alphanumeric text they contain. The project was executed using Google Colab, leveraging its computational resources for efficient model training and testing.

1. **Pre-processing and Data Analysis**:
   * Loaded and merged annotations from two CSV files.
   * Normalized and resized images to a fixed size (224x224).
   * Encoded the text labels of license plates using LabelEncoder.
2. **Data Exploration**:
   * Visualized a sample image with bounding boxes to ensure the correctness of annotations.
   * Split the dataset into training and validation sets.
3. **Model Building**:
   * Built a Convolutional Neural Network (CNN) to extract features from images.
   * Used Dense layers with softmax activation for character recognition.
   * Compiled the model using adam optimizer and categorical\_crossentropy loss.
4. **Model Training**:
   * Implemented data augmentation to improve model generalization.
   * Trained the model on the training set and validated it on the validation set.
5. **Evaluation and Prediction**:
   * Evaluated the model's performance using validation accuracy.
   * Generated predictions on the validation set and decoded the results back to text.

The attached files provide the detailed implementation and results of the assignment.

**Assignment Link:** <https://colab.research.google.com/drive/1bNQtMkosdWOz89Ds2OY0DcshK-vcvHTP?usp=sharing>