ALGORITHM

Plant Weed Disease Detection Using Deep Learning

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1. IMPORT REQUIRED LIBRARIES AND MODULES, INCLUDING TENSORFLOW AND OPEN CV.
2. DEFINE A DICTIONARY, `LABELS_DICTION`, TO MAP CLASS NAMES TO NUMERICAL LABELS
3. SET THE WORKING DIRECTORY TO THE LOCATION OF THE IMAGE DATASET.
4. LOAD AND PREPROCESS IMAGES, RESIZING THEM TO A CONSISTENT SIZE, AND ASSIGN NUMER
5. VISUALIZE SAMPLE IMAGES FOR REFERENCE.
6. SPLIT THE DATASET INTO TRAINING AND TESTING SETS.
7. NORMALIZE THE PIXEL VALUES OF THE IMAGES.
8. DEFINE THE GOOGLENET MODEL ARCHITECTURE.
9. COMPILE THE MODEL, SPECIFYING THE LOSS FUNCTION, OPTIMIZER, AND EVALUATION METRIC
10. TRAIN THE MODEL ON THE TRAINING DATA AND VALIDATE IT ON THE TESTING DATA FOR A SPECIFIED NUMBER OF EPOCHS.
11. PLOT TRAINING AND VALIDATION ACCURACY AND LOSS CURVES.
12. EVALUATE THE MODEL'S ACCURACY ON THE TESTING DATA.
13. LOAD A TEST IMAGE, RESIZE IT, NORMALIZE THE PIXEL VALUES, AND MAKE A PREDICTION.
14. OUTPUT THE PREDICTED CLASS INDEX AND THE CORRESPONDING CLASS NAME.