Algorithm: Simplified LIME for Loan Approval Explanation

Step 1: Start the program.

Step 2: Define the input features:
Age, Salary, Credit Score, Loan Amount, and Number of Dependents.

Step 3: Read real-life values for all input features from the user.

Step 4: Normalize all input values into the range 0 to 1
using the formula:
Normalized Value = (value - min) / (max - min)

Step 5: Generate a baseline prediction by multiplying
each normalized input with its corresponding weight
and calculating the weighted sum.

Step 6: Perturb one feature at a time by setting its value to 1.0
while keeping all other features unchanged.

Step 7: Generate a new prediction for each perturbed input.

Step 8: Calculate the absolute difference between the
baseline prediction and the new prediction.
Store this value as the feature influence.

Step 9: Rank all features in descending order
based on their influence values.

Step 10: Display the feature importance ranking
along with a human-readable explanation.

Step 11: If the prediction value is greater than or equal to 0.5,
classify the loan as APPROVED;
otherwise classify it as NOT APPROVED.

Step 12: Stop the program.