Algorithm 1 Model Training

Define LogRegWithMetrics Class LogRegWithMetricsLogisticRegression
Constructor __init__self, max_iter=200, **kwargs
super().__init__(max_iter=max_iter, **kwargs)
self.loss_history = []
self.acc_history = []
self.intermediate_models = []
Fit Method fitself, X_train, y_train
for i in range(1, self.max_iter + 1) **do**
    temp_model = LogisticRegression(max_iter=i)
    temp_model.fit(X_train, y_train)
    self.intermediate_models.append(temp_model)
    y_pred_prob = temp_model.predict_proba(X_train)
    y_pred = temp_model.predict(X_train)
    self.loss_history.append(log_loss(y_train, y_pred_prob))
    self.acc_history.append(accuracy_score(y_train, y_pred))
end for
super().fit(X_train, y_train)
return self
Split Data
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2, random_state=42)
Train Model
model = LogRegWithMetrics(max_iter=200)
model.fit(X_train, y_train)