Module 17 Starter:

Objective:
The goal is to predict whether a customer will default based on various features (e.g., age, job, education). The bank wants to manage the risk and optimize the loan strategy by focusing on customers most likely to be in good standing.

Key Questions:
Predict the AgeGroup/Education Level of the Portuguese banking institution, understand the customer spend traits.

Success Criteria:
Provide models to the bank to properly predict the Customer likelihood of ending as bad debt and alert the teams to to either reduce the exposure or incentivize the client appropriately.

Time taken to train the model and their Train/Test scores

	Model	Train_time	train_score	test_score
0	LogisticRegression	0.388916	0.375105	0.380124
1	KNN	0.057157	0.531669	0.440256
2	DecisionTreeClassifier	0.077044	0.626222	0.473674
3	SVC	66.732973	0.426559	0.425102

All the Graphs used are saved in the Images Folder.

Results:
1. LogisticRegression(C=1, max_iter=2000, penalty='l1', solver='liblinear'): 0.37827846867998527
2. KNeighborsClassifier(n_neighbors=7): 0.4502298871545035
3. DecisionTreeClassifier(max_depth=10, min_samples_leaf=2, min_samples_split=10): 0.502623146118687
4. SVC(random_state=42): 0.6952223949226087

Conclusion:

KNN, DecisionTree provide us a quick results
However SVC seems to be giving better accuracy