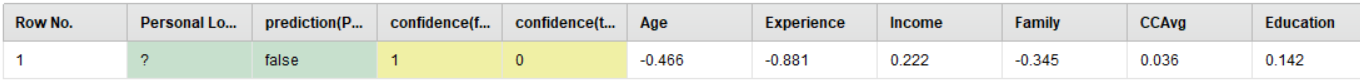
**Exercise : k-NN**

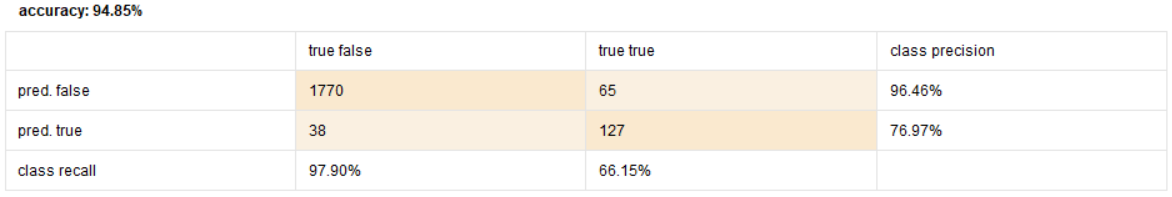
**From Rapidminer**

* Perform a k-NN classification with all predictors except ID and ZIP using k = 1. How would this customer be classified?

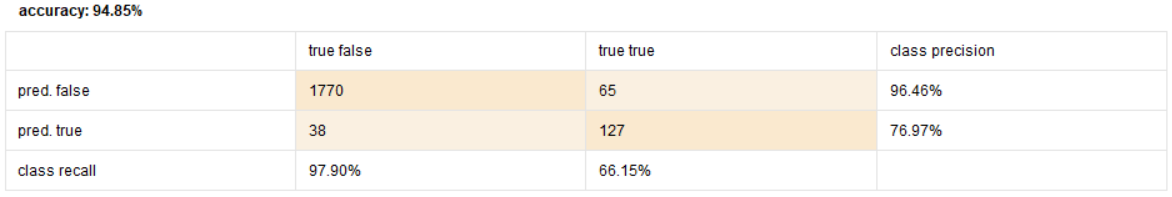


Ans new\_customer would classify in false.

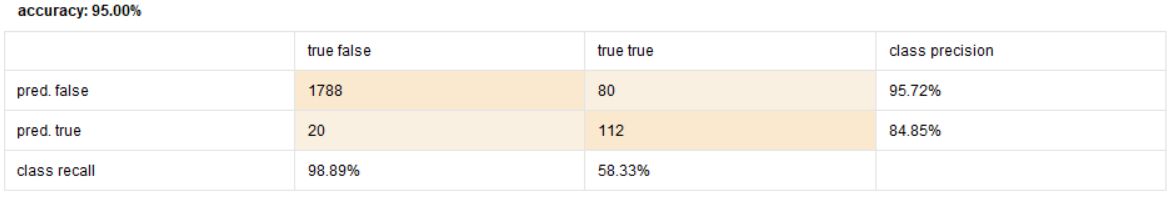
* Partition the data into training (60%) and validation (40%) sets. Show the classification matrix for the validation data that results by varying k.
  + k = 1



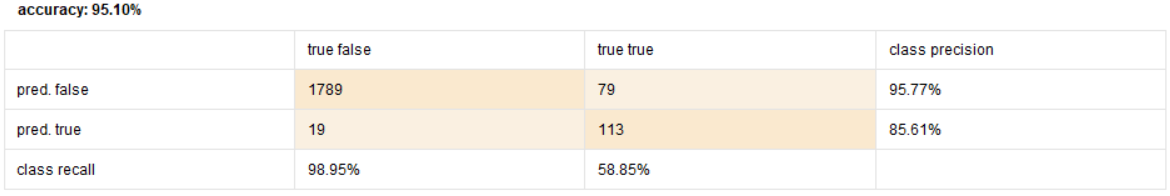
* k = 2



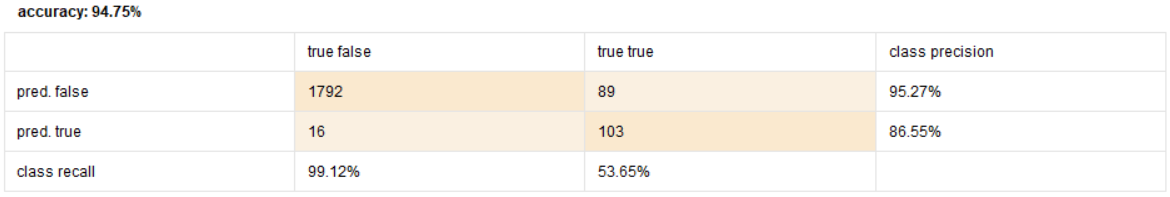
* k = 3



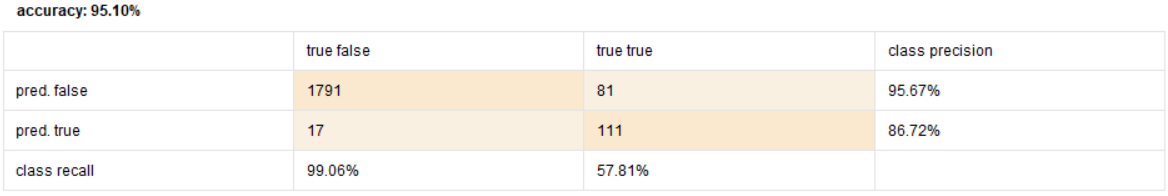
* k = 4



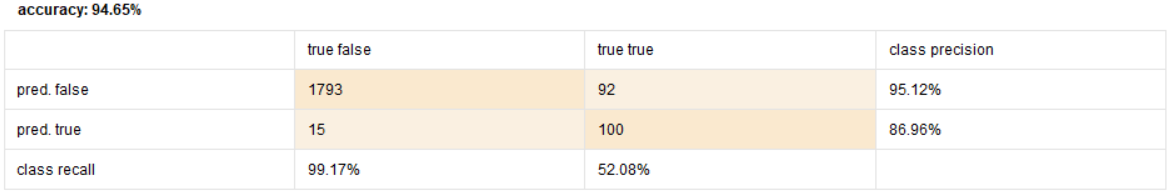
* k = 5



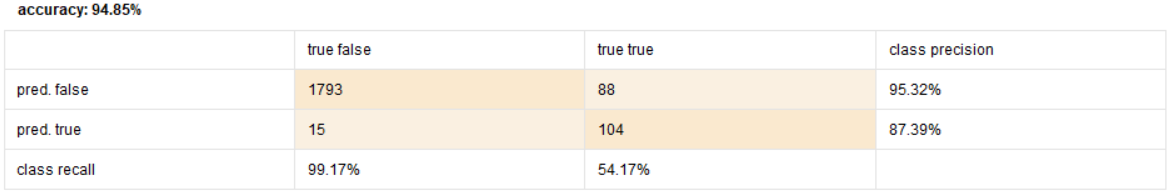
* k = 6



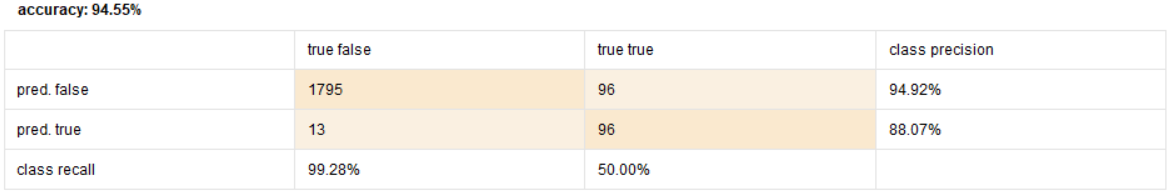
* k = 7



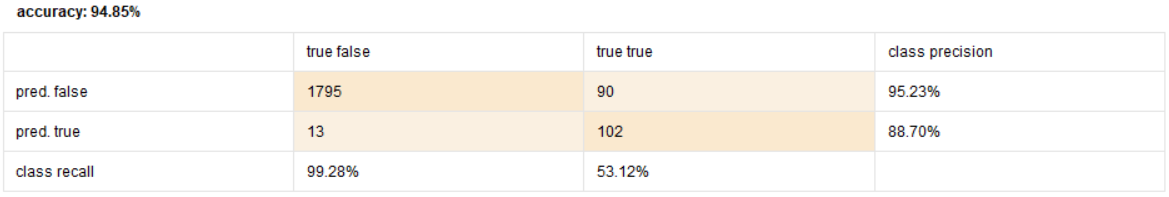
* k = 8



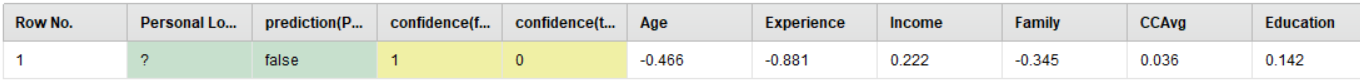
* k = 9



* k = 10



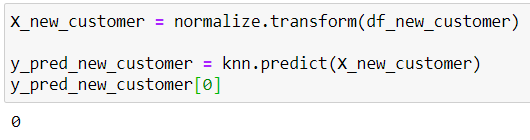
* Using the best k, how would this customer be classified?



Ans new\_customer would classify in false. ( k = 4 )

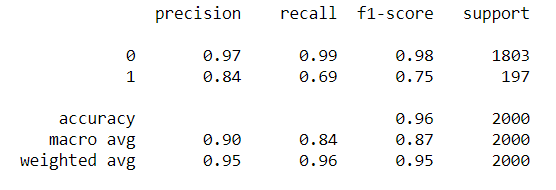
**From Python**

* Perform a k-NN classification with all predictors except ID and ZIP using k = 1. How would this customer be classified?

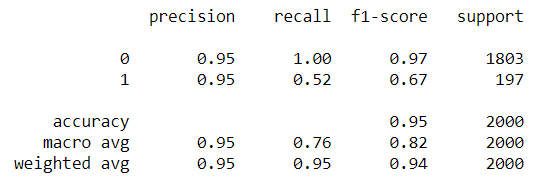


Ans new\_customer would classify in false.

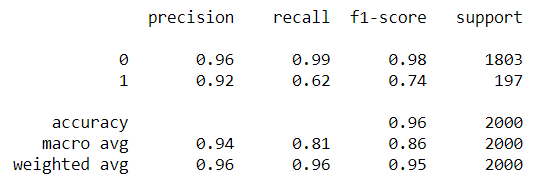
* Partition the data into training (60%) and validation (40%) sets. Show the classification matrix for the validation data that results by varying k.
  + k = 1



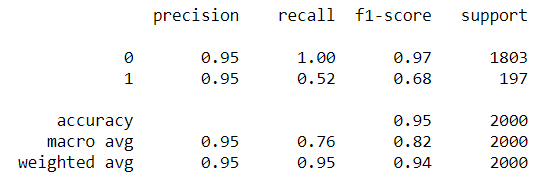
* + k = 2



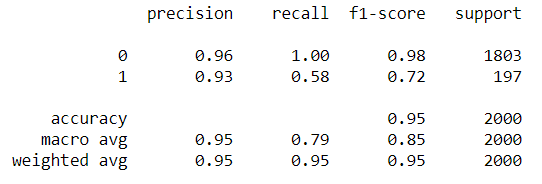
* + k = 3



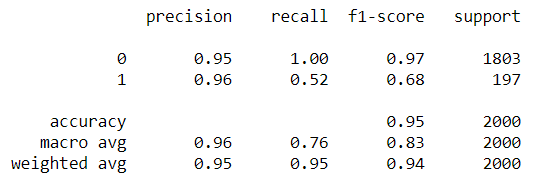
* + k = 4



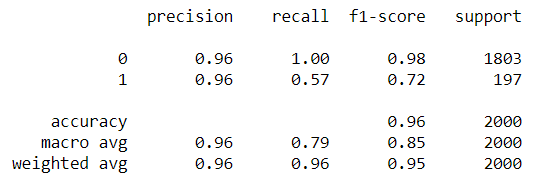
* + k = 5



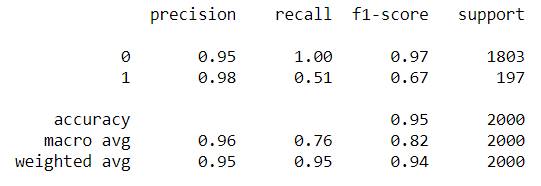
* + k = 6



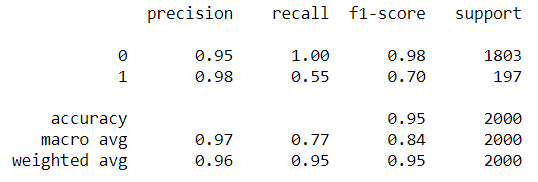
* + k = 7



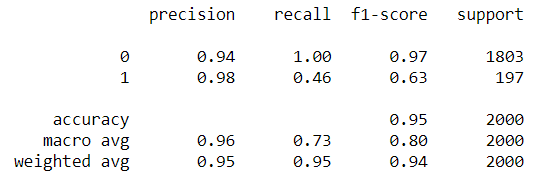
* + k = 8



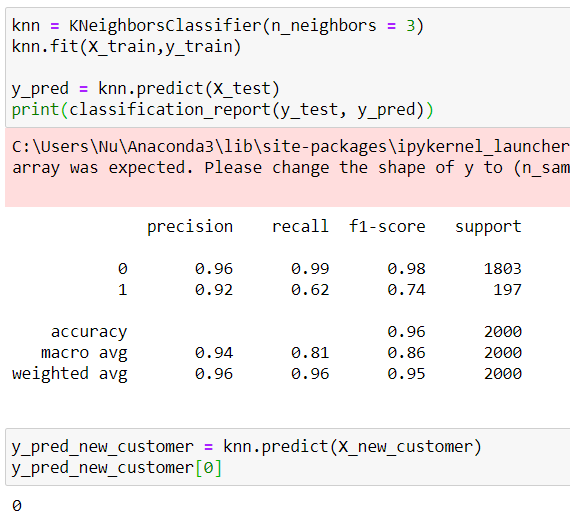
* + k = 9



* + k = 10



* Using the best k, how would this customer be classified?



Ans new\_customer would classify in false. ( k = 3 )