

LIKE A GOOD NEIGHBOR



STAY OVER THERE



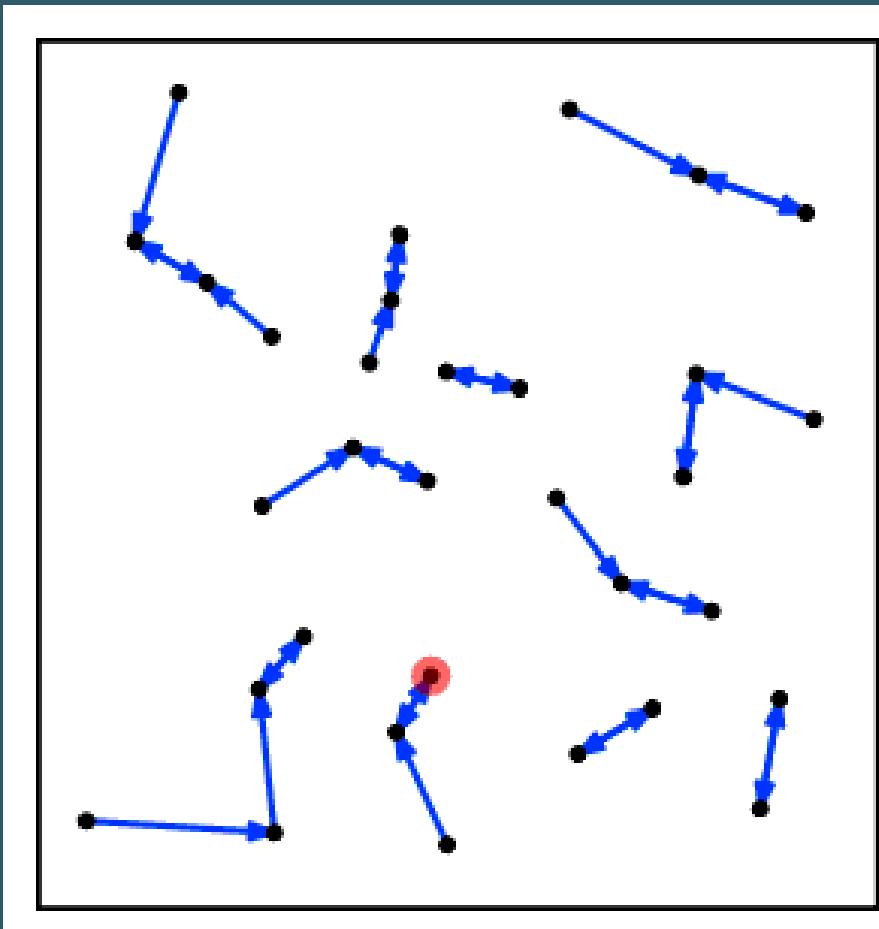
New neighbors

**Howdy neighbor!
Can I borrow a cup
of milk?**



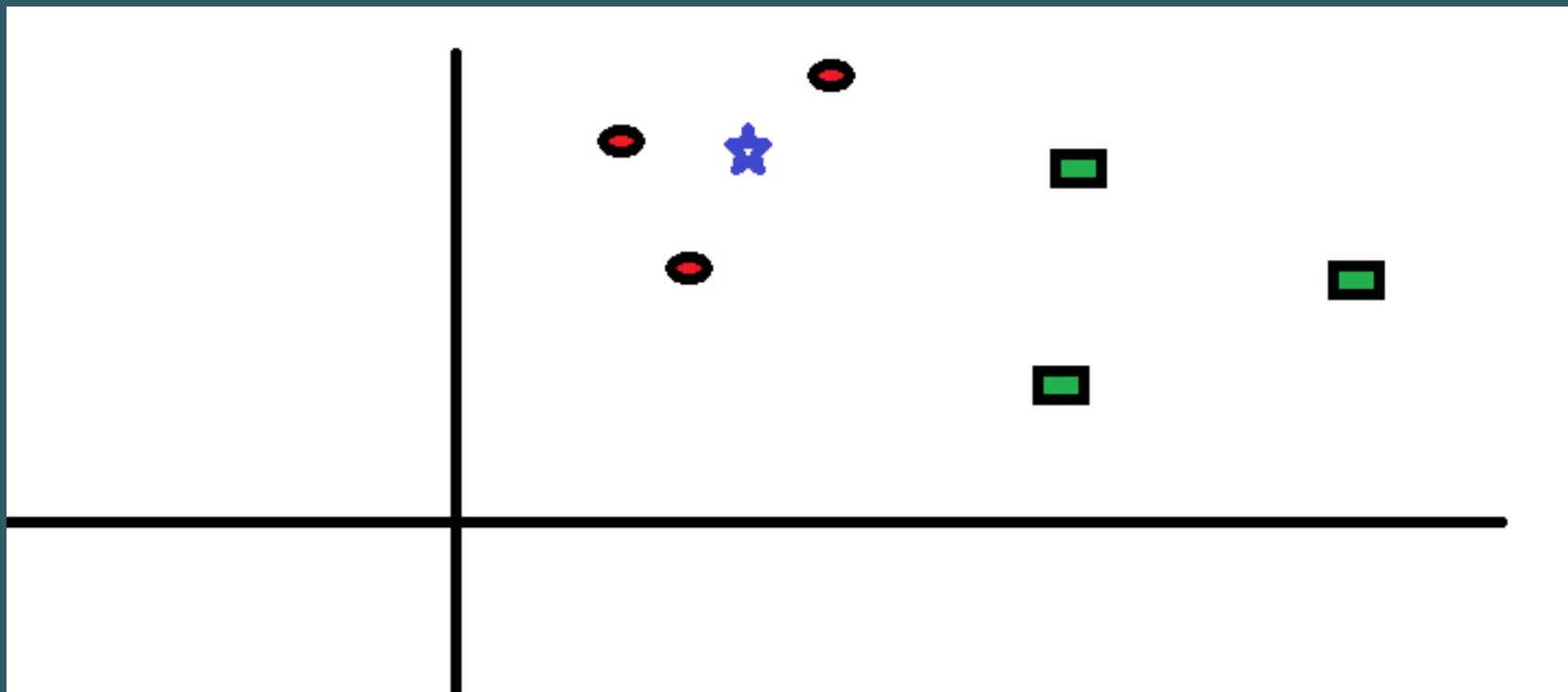


- K Nearest Neighbors



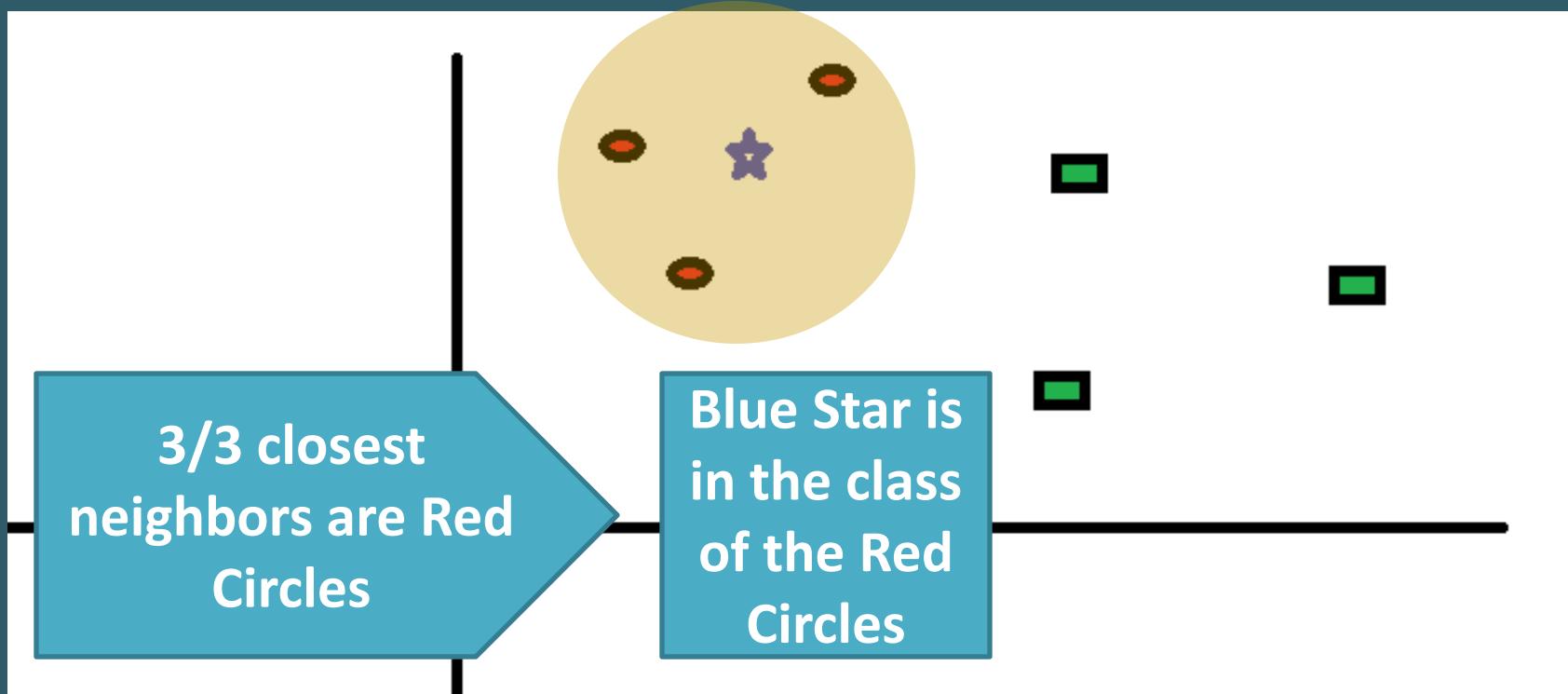


- Ex. Find the class of the blue star



KNN

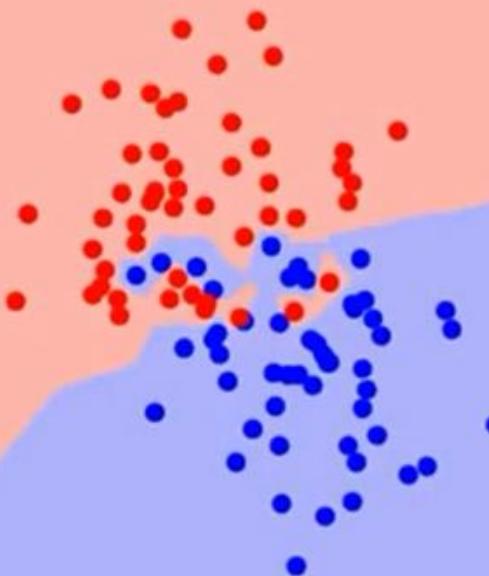
- Say, we want the 3 ($K = 3$) nearest neighbors to be accounted for when determining class



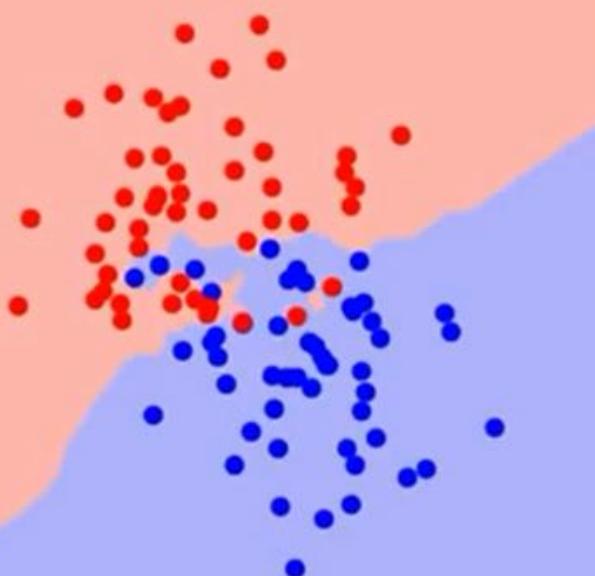
Boundary Becomes Smoother

All Red
or All
Blue

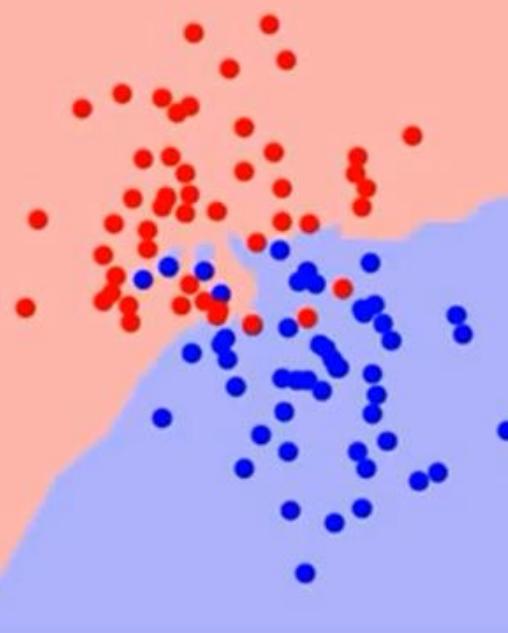
K = 1



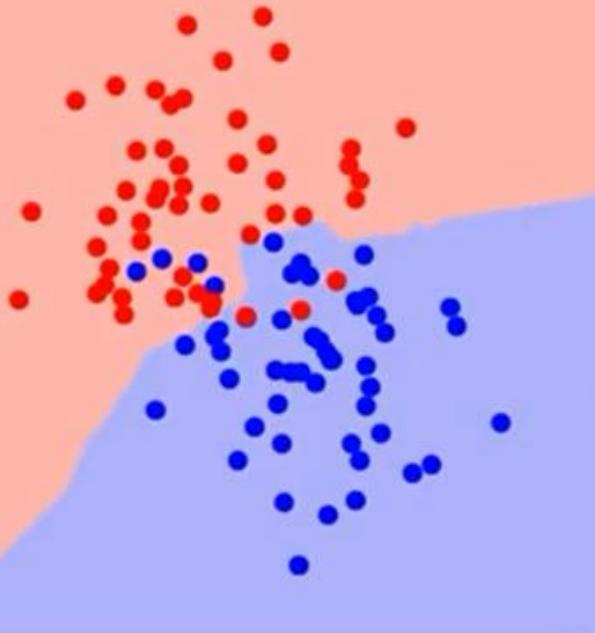
K = 3



K = 5



K = 7





- $K = \# \text{ classes}$
- $K = 1 \rightarrow \text{OVERFITTING}$
- $K = 1000000000 \rightarrow \text{UNDERFITTING}$

