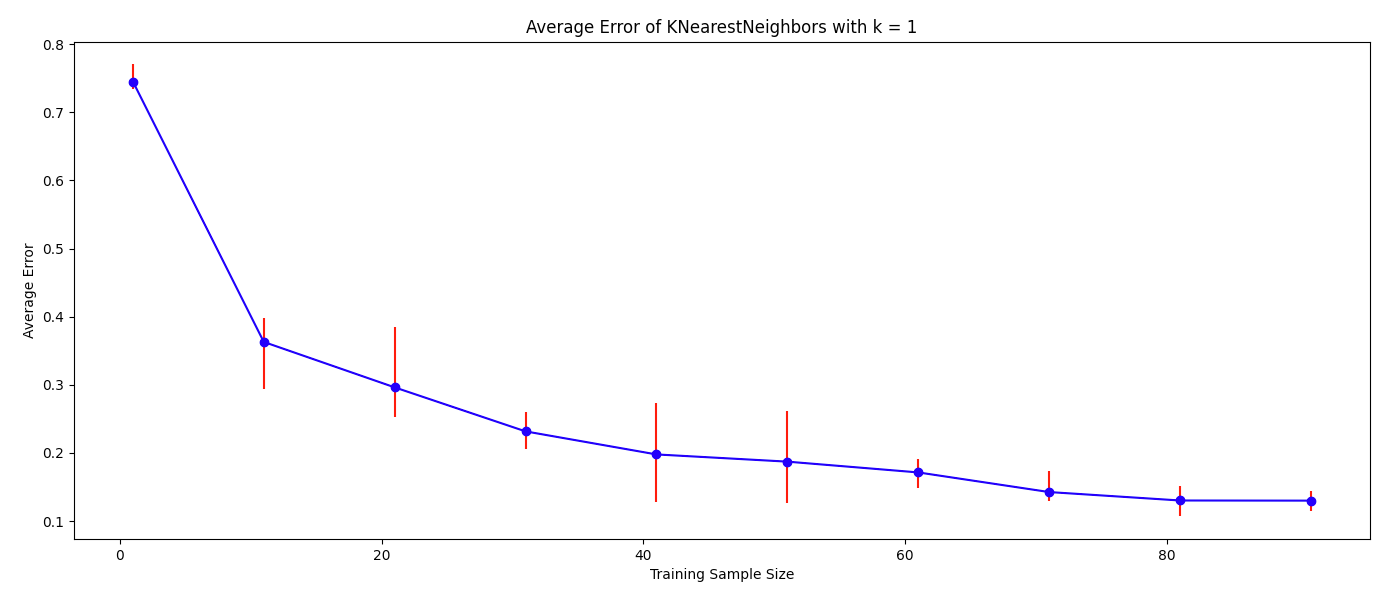
**Ex 1**

1. 
2. We can observe that when the training sample size increases, the average error decreases. It happens because when we increase the sample size, then for a point in the test set, we have a higher probability to have a closer neighbor from the samples with the same label.
3. Yes. Because in each run of the same sample size, the sample itself is randomized and is not the same as before. Therefore, we can get a sample with only 1 or 2 labels, which will cause us more errors than samples which are diverse. The accuracy of the model depends on how well the sample represents our distribution, and not every sample is optimal.
4. Yes, the error bars are generally decreases. However, there are cases in which the sample size increases and the error bars increase as well, because as stated in c, the accuracy depends on how well the samples represent the distribution.
5. 