## **First Part**

## First Graph

For classes from 1 to 5, the thickness of violin plots represent the quantity (distribution) of Y values that at the given Y axis value.

None of the classes have a Y value of less than 0.

Only class 2 has Y values greater than 100,000.

Class 2 has the widest range of Y values. Some of Y values in Class 2 are abnormally large.

While Class 2 has the highest proportion of its Y values less than 50,000.

However, majority of the Y values (samples) in Class 2 are limited to a comparatively narrow range.

Most of the Y values (samples) in Class 3 are distributed over a long range.

For Classes 1, 2, 4, 5, the majority of the Y values have a value of less than 50,000.

In Class 3 majority of Y values have a value greater than 50,000.

## **Second Graph**

Looking at the graph we can recognize 3 distinct regions.

Initially, the quantiles of Class 1 and Class increase equally. (i.e. Initially, the quantiles of Class 1 cover equivalent amount Class 3 values.) i.e. for each unit coverage of Class 1 values, we cover an equivalent amount of Class 3 values.

Between 30<sup>th</sup> and 35<sup>th</sup> Quantile of Class 1, we jump the number(quantile) of Class 3 values covered from 30 to 60.

However, after almost 30<sup>th</sup> quantile, for each increase in Class 1 quantile, we cover more and more values of Class 3. When we cover 50th quantile of Class 1 values, we have already covered around 70<sup>th</sup> quantile of class 3 values.

In the range between 30<sup>th</sup> and 50<sup>th</sup> quantiles of Class 1, the 62.5 and 70 Quantiles of Class 3 is covered.

However, at around 70<sup>th</sup> Quantile of Class 1, 75<sup>th</sup> Quantile of Class 3 is covered.i.e. 75% of values in Class 3 lie . Hence, Quantiles of Class 1 and Class 3 move towards equality.

## **Second Part**



