# Quartiles, Deciles and Percentiles

Data Science and A.I. Lecture Series

Bindeshwar Singh Kushwaha

PostNetwork Academy

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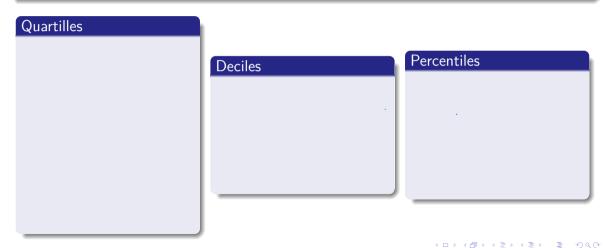
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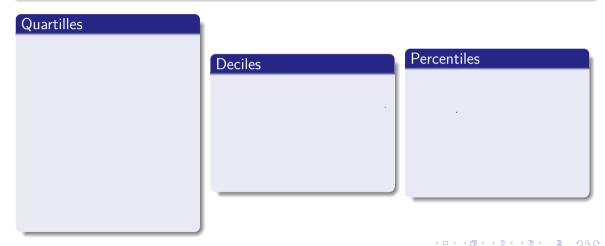
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Besides median, there are other measures which divide a distribution into a number of equal parts.

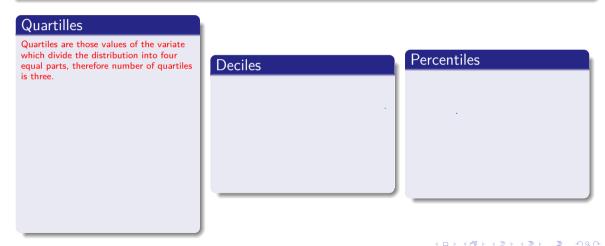


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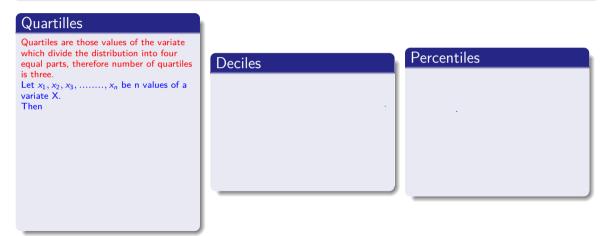
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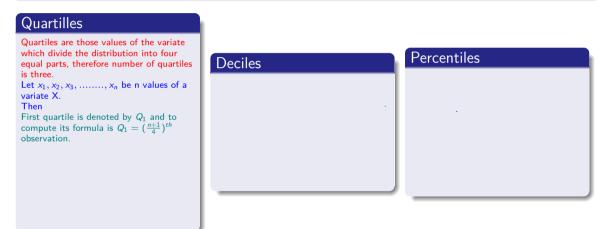
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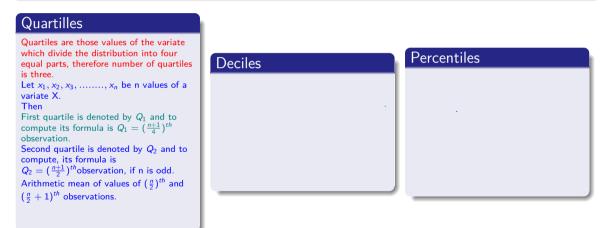
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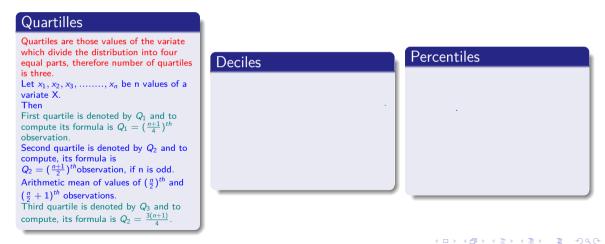
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# Quartilles

Quartiles are those values of the variate which divide the distribution into four equal parts, therefore number of quartiles is three. Let  $x_1, x_2, x_3, \ldots, x_n$  be n values of a variate X Then First quartile is denoted by  $Q_1$  and to compute its formula is  $Q_1 = (\frac{n+1}{4})^{th}$ observation. Second quartile is denoted by  $Q_2$  and to compute, its formula is  $Q_2 = (\frac{n+1}{2})^{th}$ observation, if n is odd. Arithmetic mean of values of  $\left(\frac{n}{2}\right)^{th}$  and  $(\frac{n}{2}+1)^{th}$  observations. Third quartile is denoted by  $Q_3$  and to compute, its formula is  $Q_2 = \frac{3(n+1)}{4}$ .

#### Deciles

Deciles are those values of the variate which divide the distribution into 10 equal parts, therefore number of deciles is nine.

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Deciles are denoted by  $D_i$  and to

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Percentiles are those values of the variate which divide the distribution into 100 equal parts, therefore number of deciles is ninety nine.

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