Normal Distribution

PDF for Normal Distribution

Probability density function (PDF) :-

PDF for Normal Distribution

Probability density function (PDF) :-

$$f(x \mid \mu, \sigma^2) = \frac{1}{\sqrt{2\pi\sigma^2}} e^{-\frac{(x-\mu)^2}{2\sigma^2}}$$

μ here is Mean Value .

σ^2 here is Variance.

Properties of Normal Distribution

- Bell shaped or Gaussian Distribution

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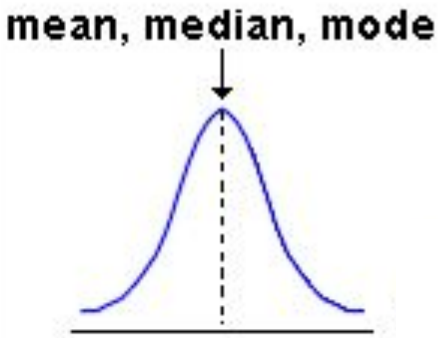
- Bell shaped or Gaussian Distribution
- Symmetric

Properties of Normal Distribution

- Bell shaped or Gaussian Distribution
- Symmetric
- Mean, Mode, Median all are equal



Properties of Normal Distribution

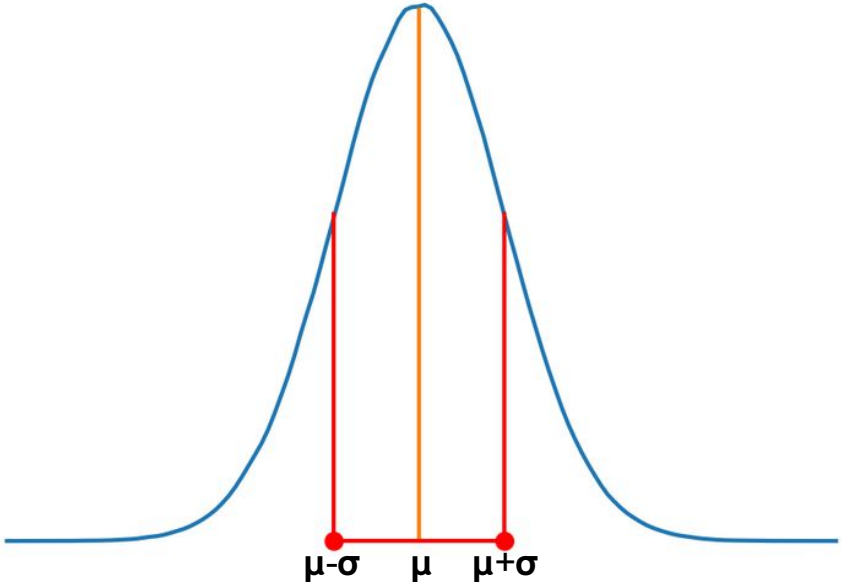
- Bell shaped or Gaussian Distribution
- Symmetric
- Mean, Mode, Median all are equal
- Area under the curve = 1

Empirical Rule for Normal Distribution

Empirical rule for Normal Distribution: **68–95–99.7** rule.

Empirical Rule for Normal Distribution

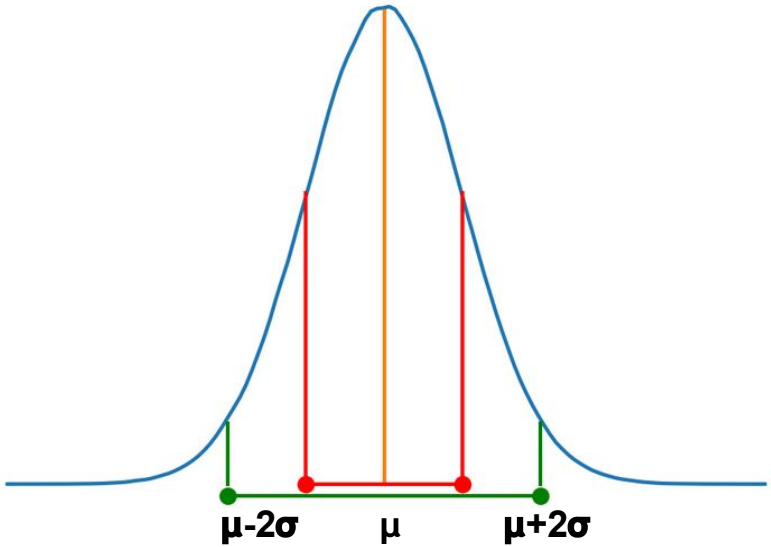
68.27% of data lies within one standard deviations of the mean.



Empirical Rule for Normal Distribution

68.27% of data lies within one standard deviations of the mean.

95.45% of data within two standard deviation of the mean.

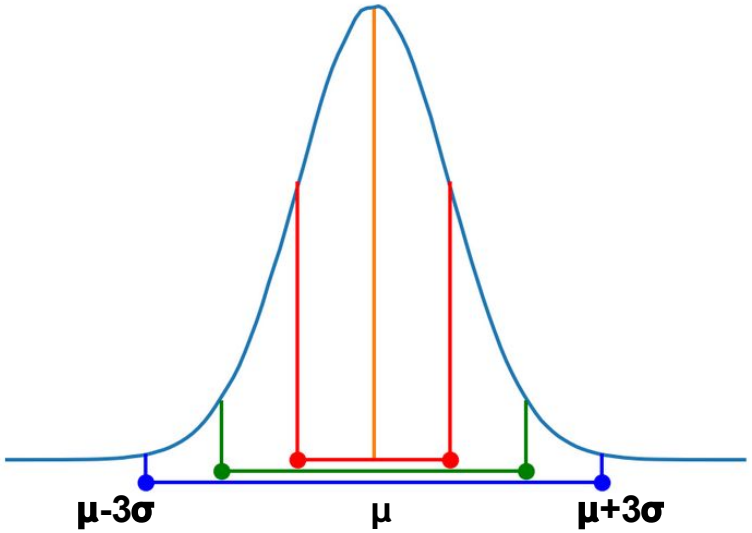


Empirical Rule for Normal Distribution

68.27% of data lies within one standard deviations of the mean.

95.45% of data within two standard deviation of the mean.

99.73% of data within three standard deviation of the mean.



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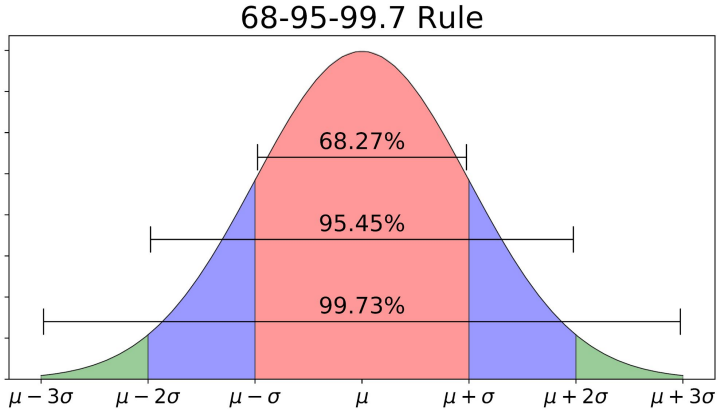
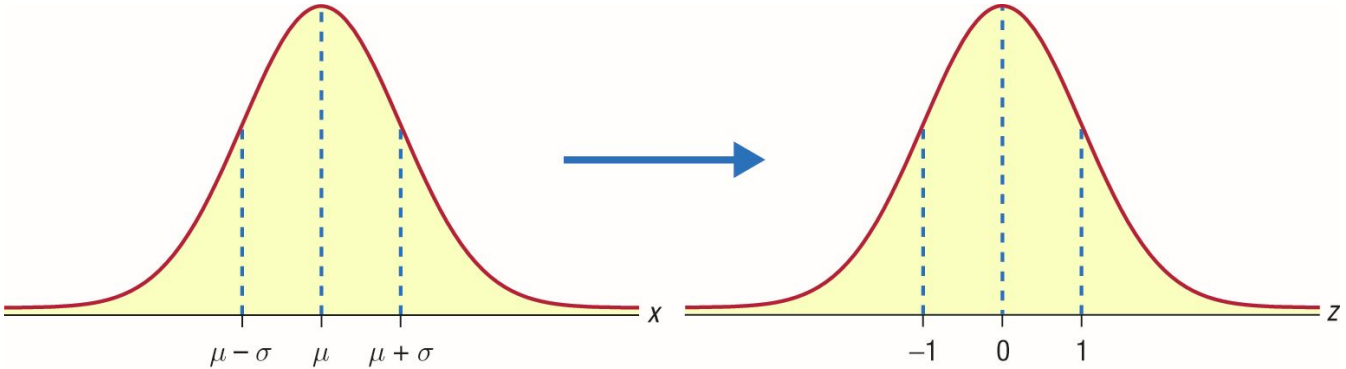


Standard Normal Distribution

$\mu = 0$, $\sigma = 1$



$$z = \frac{x - \mu}{\sigma}$$

Standard Normal Distribution

65 Marks in
Paleontology

80 Marks
In Fashion
Designing

Standard Normal Distribution

65 Marks in Paleontology

Did Rachel Perform better than Ross ?

Can’t Say.

80 Marks In Fashion Designing

Standard Normal Distribution

65 Marks in
Paleontology

Paleontology marks :
μ = 60 **& σ =** 4

Fashion Designing marks:
μ = 79 **& σ =** 2

80 Marks
In Fashion
Designing

Standard Normal Distribution

65 Marks in Paleontology

Paleontology marks :
μ = 60 **& σ =** 4

Fashion Designing marks:
μ = 79 **& σ =** 2

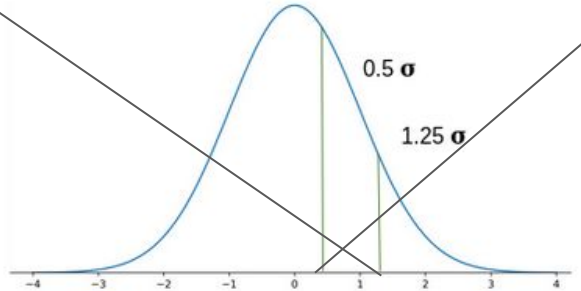
80 Marks In Fashion Designing

$$\frac{65 - 60}{4} = 1.25 \qquad \frac{80 - 79}{2} = 0.5$$

Standard Normal Distribution

65 Marks in
Paleontology

Paleontology marks :
μ = 60 **& σ =** 4
Fashion Designing marks:
μ = 79 **& σ =** 2



80 Marks
In Fashion
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Thank You!