The probability distribution with a random variable that follows the probability distribution function $f(x) = \frac{1}{\sigma\sqrt{2\pi}}\, e^{-\frac{1}{2}} \left(\frac{x-\mu}{\sigma}\right)^2$ is called normal probability distribution.

While, the distribution of a random variable that has a normal distribution with mean 0 and standard deviation 1 is called standard normal distribution.

The advantages of a standard normal distribution are as follows -

i) The standard normal distribution has a much simpler formula $f(x) = \frac{1}{\sqrt{2\pi}}\, e^{-\frac{1}{z}}(z)^2$, with a constant mean and variance making it easier to understand.