* The code imports the necessary libraries and modules for performing statistical analysis on data following an exponential distribution.

A screenshot of a computer screen

Description automatically generated

* Now, we set Random numbers it’s size 1000 which is value of k from the Exponential distribution using expon .rvs() function which scale is set to 2.0 ,which is 𝜆 value is 1/scale=0.5

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Description automatically generated

* Calculating statistics such as mean , variance, standard deviation and median using function from expon class.

A screen shot of a computer

Description automatically generated

Output

A screen shot of a computer

Description automatically generated

* Calculating the Cumulative distribution function (CDF) at a given value and the given probability using functions from the expon

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Description automatically generated

Output



The code generates plots of the probability density function (PDF) and cumulative distribution function (CDF) of the exponential distribution. It creates an array of x values using np.linspace() and calculates the

corresponding PDF and CDF values using expon.pdf() and expon.cdf().

A screenshot of a computer program

Description automatically generated

**PDF:**

A screen shot of a graph

Description automatically generated

**CDF:**

A screen shot of a graph

Description automatically generated