Predict the time when an Earthquake might occur.

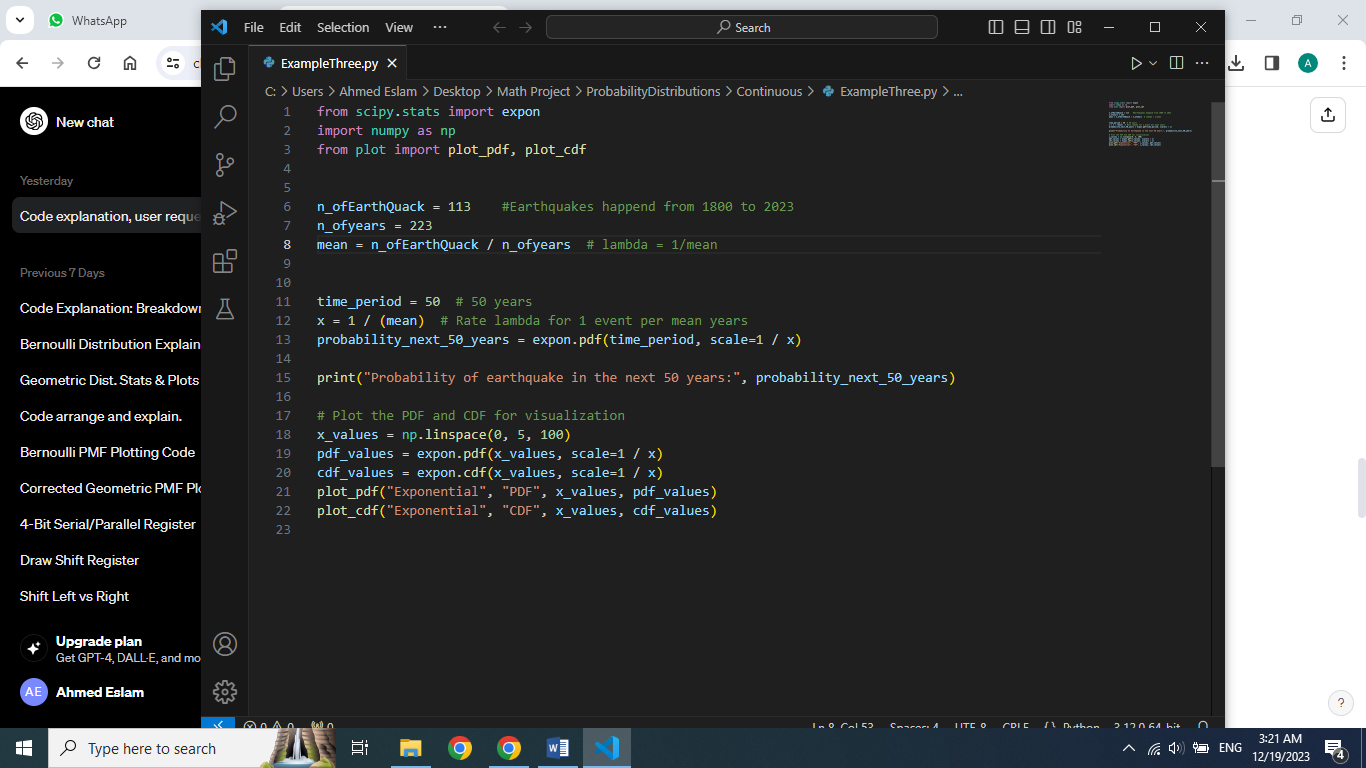
The exponential distribution is often concerned with the amount of time until some specific event occurs. For example, the amount of time until an earthquake occurs has an exponential distribution.

A group of people standing on a pile of rubble

Description automatically generated

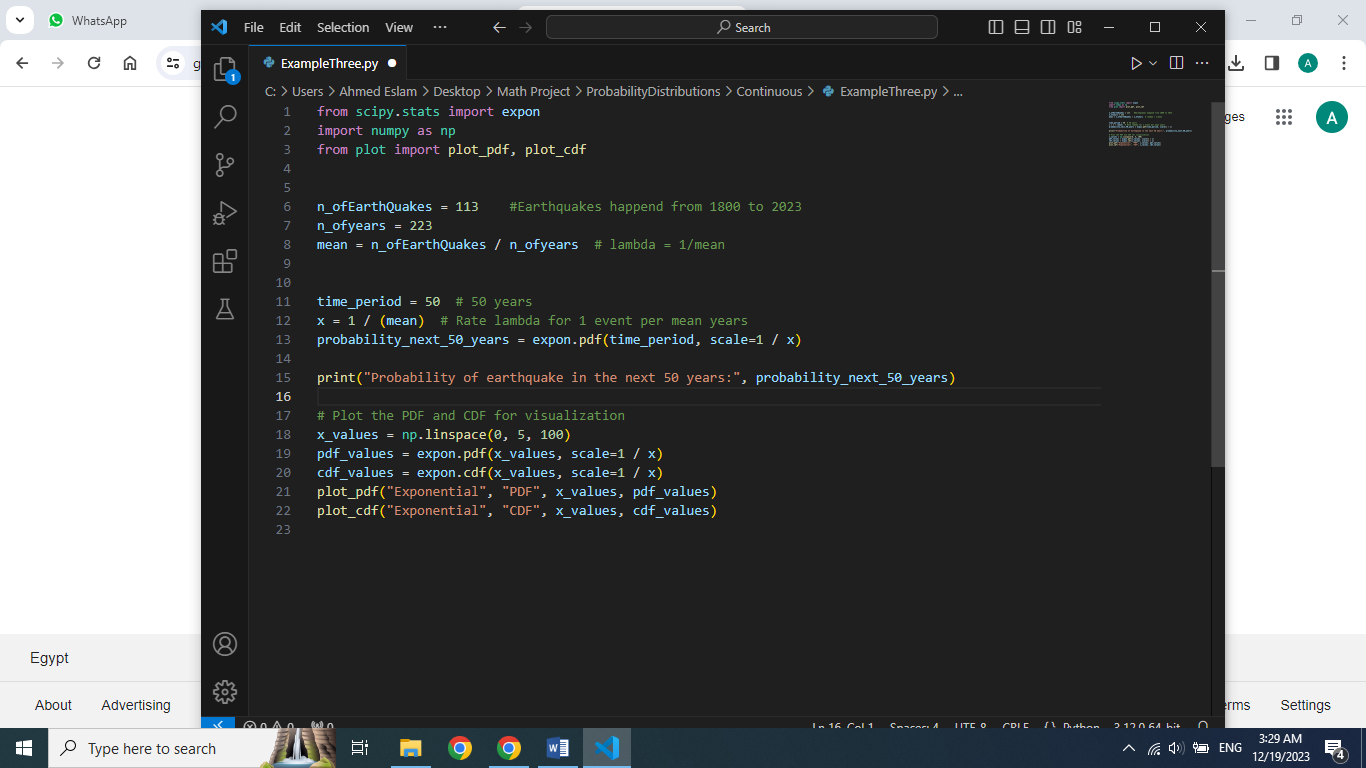
**Explaining Code in details:**

1. Importing needed libraries for exponential distribution



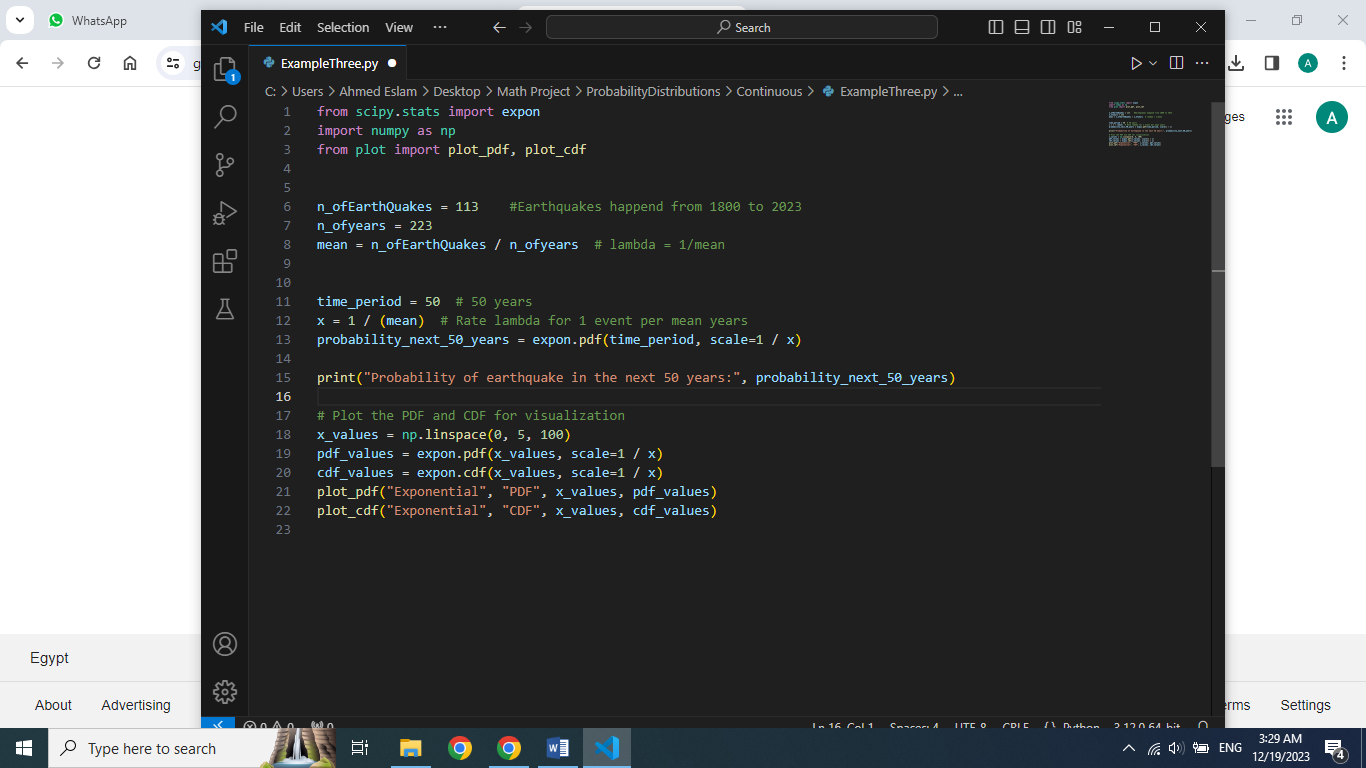
From "scipy.stats" we imported 'expon' for exponential distribution, "numpy" as 'np' for numerical operations and from "plot" we used 'plot\_pdf', 'plot\_cdf' for graphing functions.

2. Setting parameter for the Exponential distribution



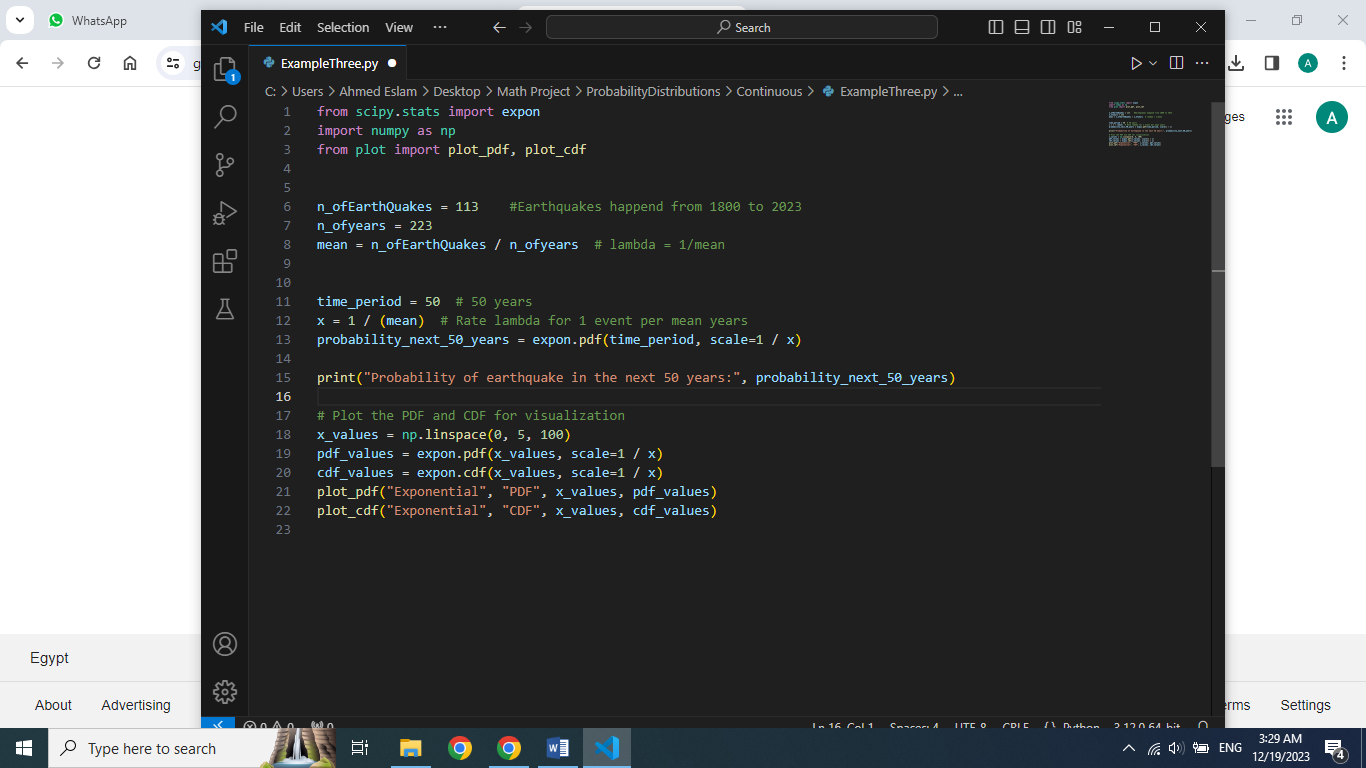
Mean is the rate of earthquakes per year, which is used as the rate parameter lambda for exponential distribution

3. Setting variables, calculating PDF and Printing Probability



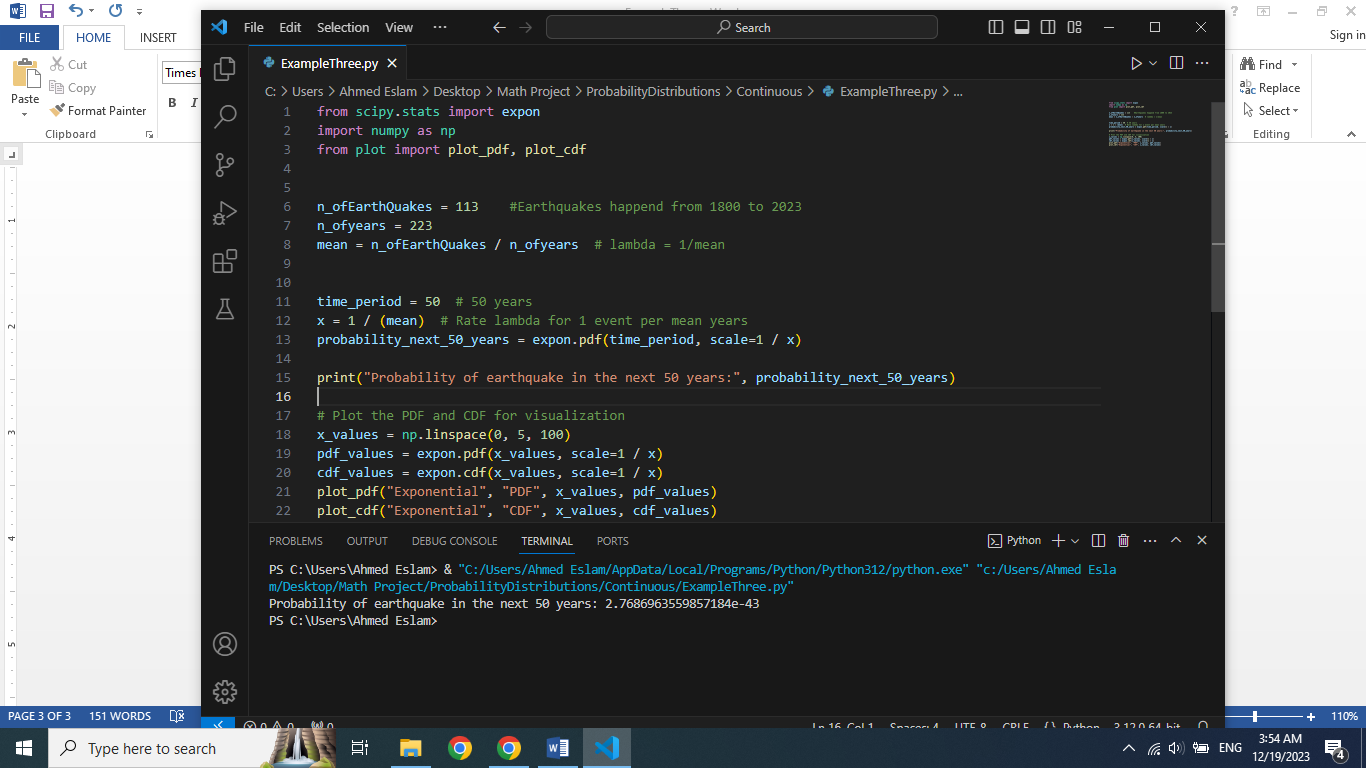
The variable "time\_period" is set to 50 years and then calculating x parameter and use "expon.pdf" for the Probabilty Density Function for the 50 years last printig it.

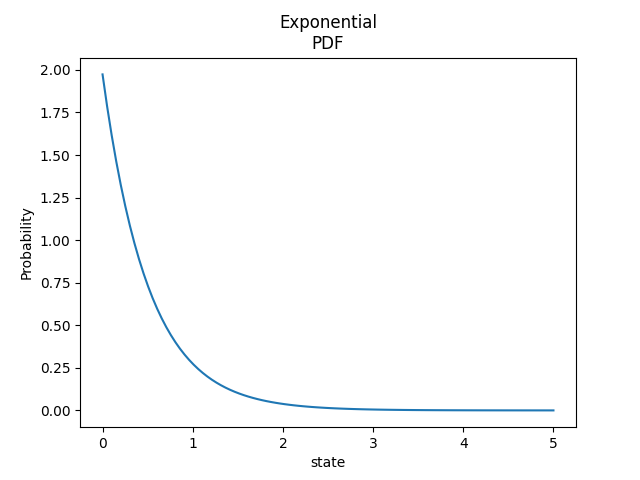
4. Graphing PDF and CDF



Output

1. Probability of occurrence Earthquake in the next 50 years



2. PDF and CDF Graphes

