1. Consider a single-server queue with geometrically distributed packet inter-arrival times and service times as discussed in class, with a service rate of $\mu = 0.75$. Plot the expected queueing delay with respect to the arrival rate λ. Choose $\lambda = [0.2, 0.4, 0.5, 0.6, 0.65, 0.7, 0.72, 0.74, 0.745]$. You should run the simulations for at least 10^6 time slots for each value of λ.

   (Hints: use Little's law to calculate the expected queueing delay, but you need to simulate the queue dynamics to get the expected queue length first.)

   Note:

   - Choose one programming language to do the simulation from C/C++, Matlab, Python, and Java.
   - Report should include the plot, and simulation code and annotations.
   - Submit one single PDF file to the assignment submission folder.