BT6270: Computational Neuroscience

The details of Assignment-1 are given below  
 **Assignment description:**

We have attached the MATLAB code which simulates the Hodgkin Huxley model. You need to run, and modify this code so as to find and plot the following:

1. Threshold values for the external applied currents I1, I2, and I3 in which shift of dynamical behavior from one to another is seen, such as *no AP, finite number of AP's, Continuous firing and then followed by distortion resulting in no more APs*.
2. A graph which depicts the firing rate (frequency) as you change the applied external current (i.e. Iext vs. Firing rate (f)). You can make this plot either in Matlab or Python.

**General Instructions:**

* A valid submission requires a compressed  zip or tar file named as “<ROLLNO>A1.zip” containing the following files:
  + A detailed report which includes the values asked for, the assumptions made, your observations, and the plots required.
  + The Matlab /python code used to generate the plot required (Iext vs f).
  + Any other user defined functions which would be required for this main code to run.
* Please email the TAs the completed assignment (zip or rar file) with the subject: “ BT6270: Assignment - 1”. The email IDs of the Tas are given below,

Sayan Ghosh - [sayanghoshbme@gmail.com](mailto:sayanghoshbme@gmail.com)

Sundari Elango – bt18d202@smail.iitm.ac.in

* Please note this is an individual assignment. Please do not share your assignment with other students.

**Please note the deadline for Assignment-1 is 04/09/2023, 23:59. Delay in submitting the assignment will only be accepted if found valid, and should be informed to one of the TAs at least 3 days before the due date.**