# Simulating Neuronal Activity and Plasticity

This project demonstrates a simple simulation of neuronal activity and synaptic plasticity using Python.

- \*\*Input neurons\*\* fire stochastically.

- \*\*Output neuron\*\* fires based on input and synaptic weight.

- \*\*Hebbian learning rule\*\* is applied: synaptic weight increases when both input and output neurons fire together.

The notebook simulates activity over 100 time steps and visualizes:

- Input spikes,

- Output neuron activity,

- Changes in synaptic weight over time.

This is a basic model designed to illustrate neuroplasticity — a foundational concept in brain development, learning, and neurorehabilitation.

