Tutorial 2 Tasks:

1. Run 'python bp.py'. Replace the function F on layer 1 (which is now a sigmoid) with a "rectified linear unit" and re-run.

2. Add regularization for W1, W2 (L2 norm) in bp.py and re-run. See, for example, Equation 85 of http://neuralnetworksanddeeplearning.com/chap3.html.

3. Run 'python bptf2.py'. Add regularization and re-run. For the definition of a batch or mini-batch, see Equations 18 and 19 of http://neuralnetworksanddeeplearning.com/chap1.html.

4. In the /Ising/ direction, run 'python conv.py' and then 'python plot.py'.

5. Reduce the number of hidden neurons to 2 and train for around 40000 steps. Plot $W_1X + b_1$ as a function of magnetization m(X), where X is the test set. Convince yourself that the neural network is learning the magnetization.