Project #1 – Coin flips
EE 511: Spring 2017

Due: (1 week) at the start of lecture. Late penalty: 15% per day.

1. Simulate tossing a fair coin (a Bernoulli trial) 50 times. Count the number of heads. Record the longest run of heads. Generate a histogram for the Bernoulli outcomes.

    a. Repeat the above experiment 20, 100, 200, and 1000 times. Generate a histogram for each showing the number of heads in 50 flips. Comment on the limit of the histogram.

2. Simulate tossing a biased coin 200 times where $P[\text{HEAD}] = 0.80$. Count the number of heads. Record the longest run of heads. Generate a histogram for the Bernoulli outcomes.

3. Simulate tossing a fair coin 100 times. Generate a histogram showing the heads run lengths.

4. Simulate tossing a fair coin and count the number of tosses until reaching a user-specified positive number of heads.