CSE474 - Assignment 4

1. Ask two of your friends who study at BRACU to give their honest feedback on your project idea. Take notes from them on what can be done better and what can go wrong. You should welcome any constructive criticism from them.
2. Take their consent to insert their names, IDs, and emails in your assignment.
3. Send me a document file with their opinions in it. Each of their feedback should be within 150-200 words. Do not change what they tell you, i.e. send it as it is.

Submit within 7 May, Saturday, 11:59 PM in a single document file.

CSE474 - Lab Task 4

1. Go watch **this video**.
2. Your goal is to compute $\pi = 3.1415...$ by random sampling of the unit disk, as described in the video. You can also consult John Guttag's *Introduction to Computation and Programming Using Python with Application to Understanding Data* (pp. 302 onwards).
3. In your simulation run the code multiple times (for iteration number $N = 10^i$, $i = 1, 2, 3, ...$). See

how the estimate for π improves with increasing N and compute the deviation from the exact result: error = $|\pi - \pi_{estimate}|$. Plot N vs the error.

4. Perform a log-log plot of the error as a function of N and show that the data can be fit to a straight line of slope -½ (this is the crux of the Monte Carlo simulation).

Submit within 7 May, Saturday, 11:59 PM in a single document file.