PHS 7045 outline of homework 1.

1. Define all variables that is fixed for the whole simulation. That is, define the total number of samples (N), total number of treatment arms (arms), and the treatment effect of the 4 arms (h0, h1,h2,h3).
2. Define a function (“postDraws”) which generate draws from the posterior distribution and pmax, allocation probabilities, probability greater than control, maximum probability, and number of patients in each arm
3. Define design1 function (“design1”), and run the postDraws functions as much as desired.
4. Define design2 function (“design2”)
   1. Decide how many interim analysis is required based on total number of patients by number of patietns in interim analysis. Set up parameters to inform interim monitoring
   2. Update allocation probabilities and nt for each look iteration
   3. Report final probabilities of best arm and sample sizes

Difference between design 1 and 2?

* In design 2, each interim analysis is dependent on each other. So the allocation probabilities are updating.

What have I learned from the solution that I can apply to my own code?

* He defined postDraws in a way that he can run the postDraws code in the for loop in design 2, even for the initial draws. So he has lesser number of lines of code.