Random DNA Sequence Generator

```c
/**
 * generateSequence
 */

Parameters:
char* seq: DNA sequence to generate. (Output)

Side Effects:
Upon returning, seq will contain randomly generated sequences of A, C, G, and T. The caller is responsible for allocating the strings of size seqLength. The strings will be null-terminated.

Returns: void

#include <math.h>
#include <string.h>

void generateRandomSequence(char* seq, int seqLength,
                           double pa, double pc,
                           double pg, double pt)
{
    int i;
    double random;

    double PA = pa;
    double PC = pc;
    double PG = pg;
    double PT = pt;

    for (i = 0; i < seqLength; i++)
    {
        /* Generate a number between 0 and 1. */
        random = (float)rand() / (float)RAND_MAX;

        /* See which slot it falls into. */
        if (random <= PA) { seq[i] = 'A'; }
        else if (random <= PC) { seq[i] = 'C'; }
        else if (random <= PG) { seq[i] = 'G'; }
        else { seq[i] = 'T'; }

        seq[i] = '\0';
    }
}
```