CS 2213 Advanced Programming Recitation - Exercise

One-D Arrays and functions: Complete the following program. You will mainly implement the MERGE function, and a PRINT_ARRAY function!

```
main()
{
     /* 1.  Declare three integer arrays as follows */

     int  a[50], b[70], c[120];

     /* 2. implement a function set_array_rand(int x[], int n)
     and  call it to generate the values in array a and b
     randomly. */

     set_array_rand(a, 50);
     set_array_rand(b, 70);

     /* 3. using the selection_sort(double x[], int n) function
     we implemented in class, sort the elements in a and b
     arrays.  */

     selection_sort(a, 50);
     selection_sort(b, 70);

     /* 4. implement a MERGE function and call it as follows to
     merge the values in arrays a and b into array c such that
     the values in c will be sorted after merging */

     MERGE(a, 50, b, 70, c, 120);

     /* 5. print the values in array c */
     PRINT_ARRAY("Array c", c, 120);
}


void set_array_rand(int x[], int n)
{
/* 1.  randomly generate elements of x array, e.g, */
for(int i=0; i< n; i++)
     x[i] = rand_int(30, 100);
}

int rand_int(int a,int b)
{
   return rand()%(b-a+1) + a;
}
```

```
void selection_sort(int x[], int n)
{
  int k,j,m;
  double temp;

  for(k=0; k<=n-2; k++)  {
    m = k;
    for(j=k+1; j<=n-1; j++){
        if(x[j] < x[m])
          m = j;
    }
    temp = x[k];
    x[k] = x[m];
    x[m] = temp;
  }
}
```

```
void MERGE(int a[], int na, int b[], int nb, int c[], int nc)
{
/*  merge the values in a and b into c while keeping the values
    sorted. For example, suppose we have the following two
    Arrays a = { 3, 7, 9, 12} and b = {4, 5, 10}
    When we merge these two arrays, we will get
    c = {3, 4, 5, 7, 9, 10, 12}
*/


/* YOUR CODE */

}

PRINT_ARRAY(char *name, int x[], int nx)
{

   /* YOUR CODE */

}
```