

CS 2123 Data Structures Recitation - Exercise

One-D Arrays and functions: Complete the following program. You will mainly implement `SELECTION_SORT (...)`, `MERGE (...)`, and `PRINT_ARRAY (...)` functions!

```
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
    (see ch02.ppt), 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;
}
```

```

/* YOUR CODE */

void SELECTION_SORT(int x[], int n)
{
    int k,j,m;
    double 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}
    */

}

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

}

```

You must submit your work using Blackboard Learn and respect the following rules:
