CSE 121 -- Introduction to "C"

Programming Assignment #7 20 Points

Name your program: p7.c

This week we will work with the "*struct*" feature, and apply a basic sorting function to an array of structures.

```
#include <stdio.h>

struct person
{
    char first_name[20];
    char last_name[20];
    int  age;
};

void print_person_info(struct person clone);
void sort_by_age(int n, struct person a[]);
```

You need to write the code for these 2 functions. Put the code for these functions after your *main* function.

```
int main (void) {

    int i, n=5;

    struct person student[5] =
    {
     {"Bob",   "Smith",    21},
     {"Jimmy", "John",     18},
     {"Amy",   "Goldberg", 20},
     {"Dan",   "Marlo",    17},
     {"Sally", "Sorrow",   16}
    };

    for(i=0;i<n;i++)
     print_person_info(student[i]);

    sort_by_age(n, student);

    printf("--- AFTER SORTING --------------\n");

    for(i=0;i<n;i++)
     print_person_info(student[i]);

    return 0;
}
```

The *sort_by_age* function should sort the students, so as the youngest is placed in student[0], and the oldest is placed in student[4].

```
 Write your 2 function definitions here.
```

Your output should look something like what's printed below on the left side of the page.

```
Name = Bob Smith
Age  = 21


Name = Jimmy John
Age  = 18


Name = Amy Goldberg
Age  = 20


Name = Dan Marlo
Age  = 17


Name = Sally Sorrow
Age  = 16

 --- AFTER SORTING ----


Name = Sally Sorrow
Age  = 16


Name = Dan Marlo
Age  = 17


Name = Jimmy John
Age  = 18


Name = Amy Goldberg
Age  = 20


Name = Bob Smith
Age  = 21
```

Here's a little function to sort an array of integers. You can use this as an example of how to sort a list of ages, but the ages you need to sort are in a structure, not an array.

```
void sort(int n, int a[])
{
   int i, j, temp;

   for(i=0; i<n-1; i++)
   {
      for(j=i+1;, j<n; j++)
      {
         if(a[i] > a[j])
         {
            temp = a[i];
            a[i] = a[j];
            a[j] = temp;
         }
      }
   }
}
```

Use the following command to submit your p7.c code

cp p7.c /home/faculty/skoss/cse121/your_UID