Homework #7

a) **(6 points)** Implement a function called `outputSorted` that takes an unsorted array of `Person` objects and outputs them to `stdout` in sorted order *using only a* `Heap`. The function should have this prototype:

```
void outputSorted(const Person people[],
        int numPeople,
        int (* compare)(const void *pKey1, const void *pKey2));
```

`outputSorted` should initialize a `Heap` with the given `compare` function, insert the people into the heap, then extract and output each person from the heap. The `person` array should not be modified by `outputSorted`.

Type `Person` should be defined as follows:

```
typedef struct Person_ {
    const char *name;
    int age;
    double height;
} Person;
```

b) **(1 point)** Demonstrate `outputSorted` taking an array of at least 5 unsorted people then outputting those people sorted by **ascending name**.

c) **(1 point)** Demonstrate `outputSorted` taking an array of at least 5 unsorted people then outputting those people sorted by **ascending age**.

d) **(1 point)** Demonstrate `outputSorted` taking an array of at least 5 unsorted people then outputting those people sorted by **ascending height**.

e) **(1 point)** Make sure your source code is well-commented, consistently formatted, uses no magic numbers/values, follows programming best-practices, and is ANSI-compliant.

Turn in all source code, program output, diagrams, and answers to questions in a single Word or PDF document.