COMP500 / ENSE501: Week 11 – Exercise:

EXERCISE NAME: *More Save and Sort*

Given the following source code:

```
#define _CRT_SECURE_NO_WARNINGS
#include <stdio.h>
#include <stdlib.h>

int compare(const void* a, const void* b);
```

Write a program that asks the user how many integers they will input, and then allows the user to input each integer. The program must use a heap array to store these values.

After the user inputs all the values, the program must print out the contents of each array element in the style shown below and then save the array to a text file named **`unsorted.txt`** in the same output style.

Next, the program must sort the array using the **`qsort`** function from **`stdlib.h`**, from highest to lowest. A function declaration for the **`compare`** function has been provided. Finally, the program must print out the sorted array.

An example of the program's output is as follows:

```
How many integers to input? 6

Input 1: 47
Input 2: 30
Input 3: 12
Input 4: 3
Input 5: 70
Input 6: 147

Array input was: { 47, 30, 12, 3, 70, 147 }

Unsorted array has been saved to the 'unsorted.txt' file.

Sorted is: { 147, 70, 47, 30, 12, 3 }
```

After executing this example, the following output would be in the **`unsorted.txt`** file:

```
{ 47, 30, 12, 3, 70, 147 }
```

Ensure your source code compiles and follows good programming standards. Ensure your program is well tested.