National University of Computer and Emerging Sciences

Laboratory Manual

For

Operating Systems Lab

(BSE-5C)

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Lab Task [Makefile]

Create 3 files

- main.c
- functions.c
- header.h

header.h file contains following function prototypes

```
void sort(int array[], bool order);
void findHighest(int array[], int postion);
void print(int array[]);
```

functions.c file contains following 3 functions along with their logic

```
void sort(int array[], bool order) {
    > sort in ascending order if order is true
    > sort in descending order if order is false
}

void findHighest(int array[], int nth){
    > find nth highest value
    if nth = 2 find 2nd highest value from the array
}

void print(int array[]){
    > print all elements in the array
}
```

In **main.c** you will accept command line arguments including 3 things

- an array of integers
- order of sort (1 for ascending order and 0 for descending order)
- nth position to get the nth highest number from the array

Use makefile to execute all these files. Your **Makefile** will look like this.

```
main: main.o functions.o
    gcc main.o functions.o -o main

main.o: main.c
    gcc -c main.c

functions.o: functions.c
    gcc -c functions.c

clean:
    rm *.o main
```

Example:

Input: ./main 11 15 13 12 16 14 18 19 20 17 1 4

Output:

```
Array Element:  11 15 13 12 16 14 18 19 20 17
Sorted Elements:  11 12 13 14 15 16 17 18 19 20
The 4 highest value in the array is: 17
```