

University of Massachusetts Dartmouth
Department of Electrical and Computer Engineering

ECE 160

Name: bigsml.cpp

Project CORONA 1 – array processing

due: see <http://ece160.org>

Write a program which prompts the user to enter the number of values to process (a maximum of 100). Next prompt, and allow the user to enter each of the values. Store these values in an array. Print the largest value, the smallest value, and the average (to 2 decimal places) of the values in the array. You must use functions for each of these tasks. The `GetValues()` function is the only function that may change the array.

The prototypes for the functions must be:

```
void GetValues(int x[], int *pN);
int FindBig(int x[], int n);
int FindSml(int x[], int n);
float FindAvg(int x[], int n);
```

`GetValues` should put values in both the `x[]` array and at `*pN`

`FindBig` should return the largest integer in the first `n` elements of `x[]`

`FindSml` should return the smallest integer in the first `n` elements of `x[]`

`FindAvg` should return the average of the first `n` elements of `x[]`

Thus, the main program should exactly something like the following:

```
#define _CRT_SECURE_NO_WARNINGS
#include <stdio.h>
// prototypes as listed above
void main()
{
    int a[100], myBig, mySml, n;
    float myAvg;
    GetValues(a, &n);
    myBig=FindBig(a, n);
    mySml=FindSml(a, n);
    myAvg=FindAvg(a, n);
    printf("The largest value is: %d\n", myBig);
    printf("The smallest value is: %d\n", mySml);
    printf("The average value is: %.2f\n", myAvg);
}
```

A sample run is shown below (user input underlined). Note that user is prompted for value 1, 2, 3, ... as opposed to 0, 1, 2,

```
Enter number of integer values:  5
Enter value 1: 20
Enter value 2: -15
Enter value 3: 90
Enter value 4: 2
Enter value 5: 30
The largest value is: 90
The smallest value is: -15
The average value is: 25.40
```