CS1050 – Prelab 5
Fall 2019

Concepts to Practice
- Arrays
- Passing arrays to functions
- Symbolic constants

Description
For the prelab assignment, you will declare an array in your main() function called Distances. Distances should be an int array of size 5. You should define a symbolic constant called ARRAY_SIZE and use this constant rather than ever passing a hard-coded 5 to any function or any array declaration.

Your program should prompt the user for up to 5 (ARRAY_SIZE) distances to be stored in your Distances array. The program should collect the distances from the user by calling a function called EnterDistances(). It should then call a function called AverageDistances() to find the average distance that was entered. Finally, the program should print out all of the distances that have been entered by calling a function called PrintDistances() and then print out the average.

The main() function in your program should:

1. Print a message welcoming the user to the Distances Program.
2. Call the EnterDistances() function to allow the user to enter values to be stored in your array.
3. Call the AverageDistances() function to calculate the average of the entered distances.
4. Call the PrintDistances() function to print all of the distances that were entered.
5. Print the average that was calculated.
6. Print out a message thanking the user for using the program.

Functions You Must Write
You may write any functions you wish to implement this program, in **addition** to the following functions. However, you **must** implement the following functions:

- **void EnterDistances(int array[], int size)** – This function takes an array that has size elements. The function prompts the user to enter values until all size elements have been filled.
- **float AverageDistances(int array[], int size)** – This function returns the average of the elements in the array. The average should be accurate to 2 decimal places.
- **void PrintDistances(int array[], int size)** – This function prints out the elements in array.
- **int main(void)** – Of course, you need to write a main() 😊.

Hint

Remember that arrays are passed to functions sort of similar to "pass by reference". So, if I pass an array called "myarray" to a function by using its name, this is the same as passing the address of the first element of that array (&myarray[0]). This is important, because it means that a function receiving an array as an argument can make changes to the values contained in that array.

```
jimr@JimRHadesCanyon:~/CS1050/FS2019$ compile Prelab5.c
jimr@JimRHadesCanyon:~/CS1050/FS2019$ ./a.out
welcome to the Distances program!

Please enter distance #1 and then hit enter: 11
Please enter distance #2 and then hit enter: 27
Please enter distance #3 and then hit enter: 15
Please enter distance #4 and then hit enter: 2
Please enter distance #5 and then hit enter: 17
Distance #1: 11
Distance #2: 27
Distance #3: 15
Distance #4: 2
Distance #5: 17
Average distance=14.40


Thank you for using the Distances program!
```