

Lab Assignment 8 - 03/05/2009

Name: _____

Section: 8:00 11:00 12:30 6:30

Problem 1: Practice with Dynamic Arrays

For this problem, you will create a file `dynarrays.c` and write the `main` method to perform the following actions. (Hint: after each bullet, compile and run your program to be sure your code is correct to that point.)

- Input a number n from the user.
- Allocate a dynamic `int` array of size n and fill it with zeroes.
- Input $n + 1$ numbers from the user and place the differences between number i and number $i + 1$ into the i th position of your array. This can be done by performing the following actions (a loop will be required):
 1. Input a value into a variable `old`.
 2. Set `i = 0`.
 3. Input a value into a variable `new`.
 4. Place `new-old` into your array at position `i`.
 5. Set `old = new`.
 6. Increment `i = i + 1`.
 7. Loop back to step 3 until all elements of the array are filled.
- Print the contents of your array.
- Input a value j from the user.
- Print the j th value of the array.
- Deallocate the dynamic array (`free`).

Sample Input/Output (the user types any numbers following a colon)

```
Input n: 5
Give me 6 numbers: 2 5 3 7 8 20
3 -2 4 1 12
Give me a number between 0 and 4: 3
The array value at index 3 is 1
```