CIS2107
Computer Systems & Low-Level Programming

Lab04. Processing 1D Arrays

Processing 1D Arrays

- ➔ Upload .c file (Arrays1DDemo.c) to Canvas
  - *Test on cis-linux2 server !!!!*

- ➔ Comments at top of the file:
  - Name, Date, Course
  - Homework number (Lab 4 1D Arrays)
  - Statement of problem

Constants aka MACROS Explained

When should you use a `#define` constant?

- ➔ For values that will remain unchanged for the duration of the program
- ➔ For example: a withdraw limit of $1000

What is the proper syntax?

- ➔ `#define CONSTANT 100` **NOTE: no semicolon**

Where does it go?

- ➔ outside of **`main()`**

Random Number Generation

```
#include <time.h>

#define RAND_MIN 0

#define RAND_MAX 100

srand((unsigned)time(NULL)); //only need to call once

rand() % (RAND_MAX+1)+ RAND_MIN;
```

Recommendations

- ➔ Declare an array in **`main()`**
- ➔ Pass that array into your functions
- ➔ Do NOT return the array from the functions, the array in main will already be updated

Example

```
#define SIZE 40

void fillArray(int array[], int size);

int main(int argc, const char * argv[]) {

    int array[SIZE];

    fillArray(array, SIZE);

}
```

Example cont.

```
void fillArray(int array[], int size){
    srand((unsigned)time(NULL));
     for (size_t i=1 ; i<= SIZE; ++i){
         array[i]= rand() % (RAND_MAX+1)+ RAND_MIN;
    }
}
```

Clarifications

Part 5: `findSequence()`

Do not worry about Tom & Jerry!

- ➔ Simply get two numbers from the user
- ➔ Search the matrix to see if that pair of numbers is found
- ➔ If **found**, print the index at which the first number in the pair is located
- ➔ If **not**, print “sequence not found”

Checklist

- Is my output readable?
- Could a user understand what my program is doing if they did not have the lab document in front of them?
- Does my program compile and run on the **`cis-linux2`** server?