

CS50 Section 2

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Agenda

Intros

Norms and Expectations

Arrays

Functions

Command-Line Arguments

Problem Set Review

Introduction

- Sam Green
- Junior (2017)
- Cabot House (quad life!)
- Computer Science & Statistics joint concentrator.
- Returning TF to CS50
- Former member of the heavyweight crew team, now enjoying a life of freedom.



Norms & Expectations

From me:

- Support
- Availability
- High expectations
- Clear feedback

From you:

- Meeting in the middle
- Reading the pset spec before section
- Reading comments on your problem sets!
- Participate 😊

Warmup (1)

Write a program to print “SLG” on 10 times.

Warmup (2)

- What is a data type?
- What is typecasting?
- Convert 01101 to decimal (what's decimal?)
- Any other questions?

Arrays (1)

Structure: <datatype> <name[<size>]

Examples:

char alpha[26]

int score[5]

Arrays (2)

“Initialize” aka set up in two ways:

```
int score[2];
```

```
score[0] = 0;
```

```
score[1] = 1;
```

or:

```
int score[] = {1,2,3,4,5};
```


Arrays (3)

We can “index into” aka access an array using:

```
int score[] = {1,2,3,4,5};
```

```
int num = score[3];
```

Exercise: Arrays (1)

Write a program that creates an array of strings, and then prints out the array's members each on its own line.

Exercise: Arrays (2)

- a) Write a program that creates an int array of size 10, fills it with the numbers 10-19, and then prints these out.
- b) Now change it to a string and print out each character!

Functions

- (1) Take Something In
- (2) Do Something
- (3) Spit out an answer aka “return a value”

Why functions?

Functions (2)

Important things to know:

Return types

Name of functions

Parameter types

Prototypes

Scope

Exercise: Functions (1)

Write a function that takes in a string “name” from the user and prints out “Hi <name>, this is my first function.”

Exercise: Functions (2)

Write a program with a function

Command-Line Arguments

Command Line Arguments are passed into the main function of the program when it runs.

```
int main(int argc, string argv[])
```

What is argv[]?

What is argc?

Exercise: command-line arguments

- (1) Write a program that prints out the program's name.
- (2) Write a program that prints out the first character of every command line argument passed to it.

Exercise: Synthesis

Write a program that calls 1 function if the command line argument “one” is passed in, calls another function if the command line argument “two” is passed in, and does nothing otherwise. The functions can do whatever you want!

Review of Today

- Arrays
- Functions
- Command-line Arguments
- Questions?

PSet Review

- Initials
- Caesar
 - atoi function
 - Tips: start by writing a program that rotates each letter by one, and then change it to the full cipher.
- Vigenere'
 - Start with your Caesar program and notice the similarities.
- Every week has the same hint: tackle the problem sets in small steps!