



CS50 Walkthrough 1

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Walkthroughs

- When?

- Sundays in Emerson 7-8:30pm
- Videos on website

- Purpose

- To guide you through the week's assignment
- To answer your questions about the problems
- To break assignments down into manageable bites



Grading

- Correctness (3-5 pts)
 - follows specifications, lacks bugs
- Design (3-5 pts)
 - Clear, efficient, elegant, logical
- Style (3-5 pts)
 - commented, indented, variables well-named
 - http://wiki.cs50.net/Style_Guide
- poor/fair/good/better/best

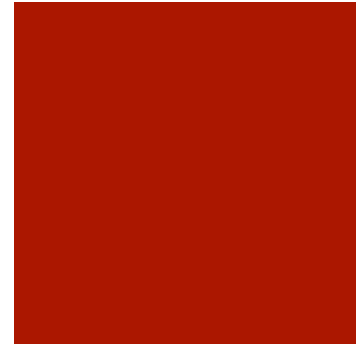


Problem Set 1

- Linux + the command line environment
- O hai, Nano!
- Free Candy
- Time for Change
- I Saw You



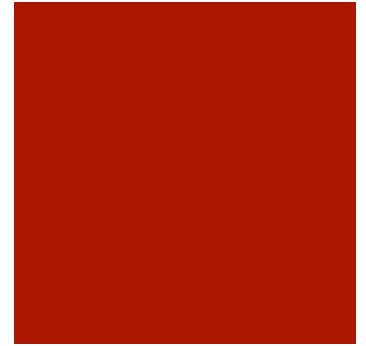
Linux + Command Line



- Terminal/ PuTTY
 - instructions on cs50.net
- Command Line
 - ssh
 - mkdir
 - cd / cd ..
 - pwd
 - ls
 - passwd
 - logout

O hai, Nano!

- nano hello.c
- hai1.c
- gcc -o hello hello.c
- ./hello

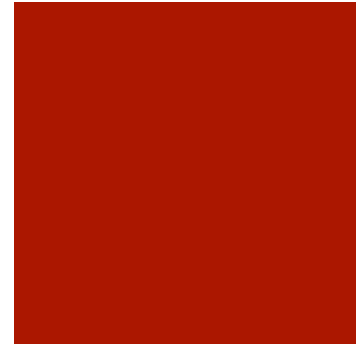


Free Candy

- Seriously, in the CS50 Lounge: MD G123



skittles.c



- pseudorandom number generation
 - rand
 - srand
 - time(NULL)
 - modulo
- command line user input
 - printf
 - GetInt()
 - Loop
- including libraries by including header files
 - cs50, stdio, stdlib, time

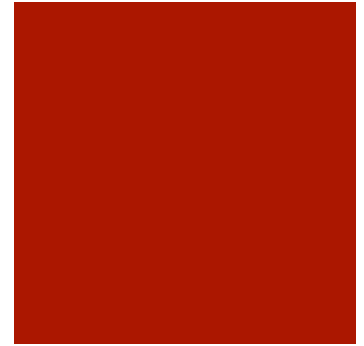
Free Code!

```
#include <cs50.h>
#include <stdio.h>
#include <stdlib.h>
#include <time.h>
```

```
int
main(void)
{
    // seed PRNG
    srand(time(NULL));

    // pick pseudorandom number in [0, 1023]
    int skittles = rand() % 1024;

    // TODO
}
```



TODO

username@cloud (~/pset1): **./skittles**

O hai! I'm thinking of a number
between 0 and 1023. What is it?

0

Nope! There are way more Skittles than
that. Guess again.

1

Nope! There are way more Skittles than
that. Guess again.

-1

Nope! Don't be difficult. Guess again.

1023

Nope! There are fewer Skittles than
that. Guess again.

42

That's right! Nom nom nom.



Building Blocks

- printf
- GetInt()
- “thinking”
 - once you get the number from the user, what do you do?
 - loop
 - what kind?



GetInt() example



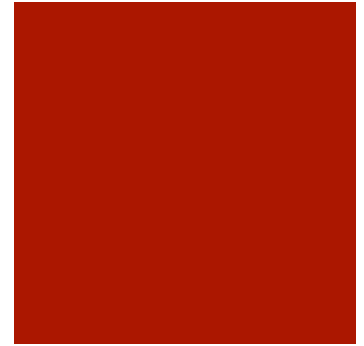
```
int
main(void)
{
    // ask user for an integer
    printf("Give me an integer between 1 and 10: ");
    int n = GetInt();

    // judge user's input
    if (n >= 1 && n <= 3)
        printf("You picked a small number.\n");
    else if (n >= 4 && n <= 6)
        printf("You picked a medium number.\n");
    else if (n >= 7 && n <= 10)
        printf("You picked a big number.\n");
    else
        printf("You picked an invalid number.\n");
}
```

Time for Change

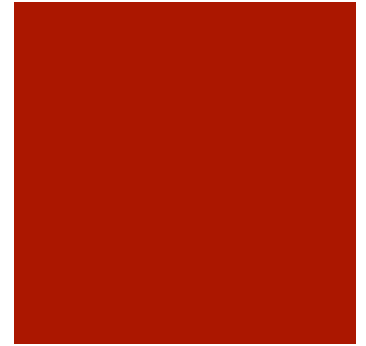


Building Blocks



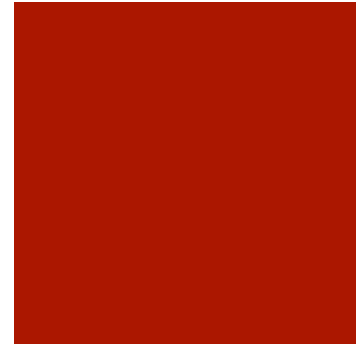
- GetFloat()
 - convert to cents (float → int)
 - don't forget to round, not truncate!
 - to learn how to use round(), see its man page!
 - careful: it returns a double that you must cast to an int
- Check user input -- no negative change!
 - loop – what kind?
- Algorithm

Let's be greedy



- greedy algorithm
 - \$0.41 = quarter, dime, nickel, penny = 4 coins
- loop
 - figure out which coins to give
 - division + modulo / subtraction
- counter
 - keep track of how many coins you give

Stalking



www.isawyouharvard.com

Who is Spotting Whom



chart



```
username@cloud (~/.pset1): ./chart
```

```
M spotting F: 3
```

```
F spotting M: 4
```

```
F spotting F: 1
```

```
M spotting M: 2
```

```
Who is Spotting Whom
```

```
M spotting F
```

```
#####
```

```
F spotting M
```

```
#####
```

```
F spotting F
```

```
#####
```

```
M spotting M
```

```
#####
```

chart.c



- User input (non-negative!)
- Calculate percentages
 - ex. 5, 5, 0, 0
 - each 5 is 50% of the 10 spottings
 - those bars should measure 50% of 80 #s
 - each 0 is 0% of the 10 spottings
 - those bars should measure 0% of 80 #s
 - round percentages down (float->int)
- Draw
 - loop – what kind?
 - printf

Questions?

