CS50 Supersection

Sunday, September 14th

Sections

OHs

The appliance

- Instructions for downloading the new appliance can be found in the pset1 spec

- Download the appliance early!

- Any bugs report to heads@cs50.harvard.edu

Navigating in a Command-line Environment

Quick Batman! to the appliance!!!

Linux Commands

- `ls`: list files / directories
  - `ls -l`: list files / directories with additional information (incl. permissions)
- `cd`: change directory
  - `cd ..` : return to previous directory
  - `cd [PATH]`: enter directory at [PATH]
- `clear`: clear terminal screen
- `mkdir [DIRECTORY_NAME]`: make directory named [DIRECTORY_NAME]
- `gedit [FILE_NAME]`: opens text editor to edit file named [FILE_NAME]
- `mv [FILE_NAME] [DIRECTORY_PATH]`: moves text file named [FILE_NAME] into directory at [DIRECTORY_PATH]
- CTRL + C : terminate program (if infinite loop)
- `cp [FILE_NAME] [NEW_FILE_NAME]`: copy file named [FILE_NAME] as a new file named [NEW_FILE_NAME]
- `make`
- `./`
- `rm, rm -f, rm -rf`

Data Types

Type	Size (bytes)
int	4
float	4
double	8
long long	8
char	1
short	2
string	4
bool	1

Operators

add   +   4 + 2 = 6

subtract   -   4 - 2 = 2

multiply   *   (not x)   4 * 2 = 8

divide   /   (not ÷)   4 / 2 = 2

modulo   %   4 % 2 = 0

                                  4 % 3 = 1

                                  4 % 5 = 4

PEMDAS

Boolean Expressions

equal	==
not equal	!=
less than	<
less than or equal to	<=
greater than	>
greater than or equal to	>=
logical AND	&&
logical OR	||

Conditionals

```
if (condition)
{
    // do if condition is true
}
```
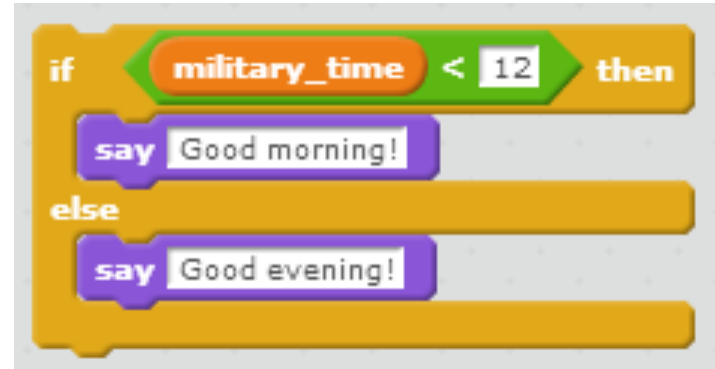
Conditionals

```
if (condition)
{
    // do if condition is true
}
else
{
    // do if condition is false
}
```

Conditionals

```c
if (military_time < 12)
{
    printf("Good morning!\n");
}
else
{
    printf("Good evening!\n");
}
```

Conditionals: Switch Statement

general form:

```
switch (n)
{
    case constant1:
        // do if n is equal to constant1
        break;
    case constant2:
        // do if n is equal to constant2
        break;
    ...
    default:
        // do if n is not equal to any of the above constants
        break;
}
```

Conditionals: Switch Statement

example:

```
switch (n)
{
    case 50:
        printf("CS50 is Introduction to Computer Science I\n");
        break;
    case 51:
        printf("CS51 is Introduction to Computer Science II\n");
        break;
    default:
        printf("Sorry, I'm not familiar with that class!\n");
        break;
}
```

Conditionals: Ternary Operator

general form:

condition ? (*do if condition is true*) : (*do if condition is false*);

example:

string professor = (class_num == 50) ? "David Malan" : "not David Malan";
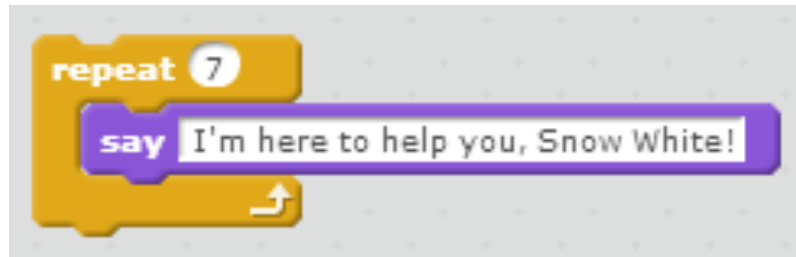
While Loops

```
while (condition)
{
    // do this again and again
}
```

```
do
{
    // do this again and again
}
while (condition);
```

For Loops

```
for (int dwarves = 0; dwarves < 7; dwarves++)

{

    printf("I'm here to help you, Snow White!\n");

}
```

```
// print a table of x's
for (int row = 0; row < 3; row++)
{
    for (int column = 0; column < 4; column++)
    {
        printf("x");
    }
    printf("\n");
}
```

```
xxxx
xxxx
xxxx
```

Problem Set 1: C

- `mario.c`
  - nested for loop (for loop within a for loop)!

- `greedy.c`
  - conditionals!
  - be careful of floating-point values! (will be covered in lecture and walkthrough)


```
       ##
      ###
     ####
    #####
   ######
  #######
 ########
#########
```