Computation as an Expressive Medium

Lab 6: String Theory

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Agenda

- More classes
- Strings and fonts
- Assignment 3
- Project 3
class Cookie
{
    int numChips;

    Cookie(int chips)
    {
        numChips = chips;
    }

    void drawCookie()
    {
        ellipse(numChips, numChips, 10, 10);
    }
}
class ChocolateCookie extends Cookie {
    int amtChocolate;

    ChocolateCookie(int amt) {
        super(amt);
        amtChocolate = amt;
    }

    void drawCookie() {
        fill(188, 143, 143);
        super.drawCookie();
    }
}
class ChocolateCookie extends Cookie {
    int amtChocolate;

    ChocolateCookie(int amt) {
        super amt;
        amtChocolate = amt;
    }

    void drawCookie() {
        fill(188, 143, 143);
        super drawCookie();
    }
}

class Cookie {
    int numChips;

    Cookie(int chips) {
        numChips = chips;
    }

    void drawCookie() {
        ellipse(numChips, numChips, 10, 10);
    }
}
class ChocolateCookie extends Cookie
{
    int amtChocolate;

    ChocolateCookie(int amt)
    {
        super(amt);
        amtChocolate = amt;
        this.drawCookie();
    }

    void drawCookie()
    {
        fill(188, 143, 143);
        super.drawCookie();
    }
}
Strings are not made of Threads
String details

char someletter = 'b';

String somewords = "Where are my pants?";
String methods

String fish = "Bass";
String expletive = fish.substring(1, 4);
char letterA = fish.charAt(1);
String bigFish = fish.toUpperCase();
String smallFish = fish.toLowerCase();

http://processing.org/reference/String.html
String s1 = "I love the ";
String s2 = "chupacabra.";
String sentence = s1 + "delicious " + s2;

println(sentence);
// outputs:  I love the delicious chupacabra.
Concatenation with numbers

String anothersentence = s1 + 3 + " rd" + s2;
// "I love the 3rd chupacabra."

anothersentence = s1 + nf(7,3) + " " + s2;
// "I love the 007 chupacabra."

anothersentence = s1 + nf(3.14159,3,2) + " " + s2;
// "I love the 003.14 chupacabra."
Strings and Arrays

String[] a = { "One", "string", "to", "rule", "them", "all..." };
String tolkien = join(a, " ");
// tolkien == "One string to rule them all..."

String b = "Another string to bind them..."
String[] tolkien2= split(b, " ");
// tolkien2 == { "Another", "string", "to", "bind", "them..." }
Special characters

- **tab**: "\t"
- **new line**: "\n"

String twolines = "I am on one line.\n I am \t on another."

I am on one line.
I am on another.

- **other escape characters** include "\\" "\""
Fonts

Use this tool to create bitmap fonts for your program. Select a font and size, and click 'OK' to generate the font. It will be added to the data folder of the current sketch.

ArialMT
Arial-Black
Arial-BoldMT
Arial-BoldItalicMT
Arial-ItalicMT
ArialNarrow
ArialNarrow-Bold
ArialNarrow-DulItalic
ArialNarrow-Italic
ArialNarrowMS

The quick brow

Size: 48

Filename: ArialMT-48

OK Cancel
PFont tnr = loadFont("TimesNewRomanPSMT-48.vlw");

textFont(tnr, 44);
text("To Boldly Go", 10, 40);
Basic Font Display

PFont tnr = loadFont("TimesNewRomanPSMT-48.vlw");

fill(255, 0, 0);
textFont(tnr, 44);
text("To Boldly Go", 10, 40);
Basic Font Display

PFont tnr = loadFont("TimesNewRomanPSMT-48.vlw");

fill(255, 0, 0);
textAlign(RIGHT);
textFont(tnr, 44);
text("To Boldly Go", 10, 40);
void setup()
{
    PFont tnr = loadFont("TimesNewRomanPSMT-48.vlw");

    fill(255, 0, 0);
    textAlign(RIGHT);
    textFont(tnr, 44);
}

void draw()
{
    pushMatrix();
    translate(300, 0);
    scale(1.1);
    text("To Boldly Go", 10, 40);
    popMatrix();
}
switch

switch (k) {
    case 8:
        println("Backspace");
        break;
    case 127:
        println("Delete");
        break;
    default:
        println("Everything Else");
        break;
}

if (k == 8) {
    println("Backspace");
}
else if (k == 127) {
    println("Delete");
}
else {
    println("Everything Else");
}
key – not letters

```java
void keyPressed()
{
    char k;
    k = (char) key;

    switch (k)
    {
    case 8:
        println("Backspace");
        break;
    case DELETE:
        println("Delete");
        break;
    default:
        println("Everything Else");
        break;
    }
}
```
void keyPressed()
{
    if (key == 'a' || key == 'A')
        // do something
}
Review

- Class supplement
- Strings
- Fonts
- switch and key
Assignment 3

A3-01: Create a subclass of PImage that implements a mosaic(int blockSize) method. The blockSize parameter specifies how big the mosaic block is (e.g. blockSize = 4 would mean the mosaic block size is 4 pixels by 4 pixels). The mosaic method should replace each block of pixels in the image (e.g. if blockSize = 4, each block of 4 by 4 pixels) with the average color value of the pixels in that block. Look at the Pixelate->Mosaic filter in Photoshop for an example of what this image operation does. Demonstrate your new class by drawing an image with several different block sizes. Include your example images with your submission.

A3-02: Write a small app that demonstrates kinetic text. Your app should allow the user to type something and the text moves around in some way while they type. For example, the user might type text on a line, but slowly the words or letters start drifting apart, or perhaps the line starts bending, or the words and letters flutter to the bottom of the screen, etc. Of course you shouldn't exactly copy any of the typographic examples in Processing or that you find on the web (though using such examples for inspiration, as a place to start modifying code, etc. is fine).
Project 3

Literary machines are potential literature, procedurally producing textual traces in response to interaction. Examples of literary machines include interactive fiction, nodal hypertexts, interactive poetry (often with animated typography) and chatterbots. Create a literary machine. The literary machine must include algorithmic elements, such as animated typography, generated text, conditional responses as a function of the previous interaction trace. It must respond to external inputs (e.g. user interaction). Your piece may include conjunctions of text and imagery.
Project 3 - Translated

- Do something snazzy with text
- Make it interactive
- Give it literary value
- Use images (optional)