SCPP CS Project

Lecture 10

Quiz
Magna Doodle Upload
Converting to ints
Random numbers
Activity: Who Nose?
Getting input
Activity: Number Guessing Game

1. Your friend is working on magna-doodle. He wants a drawing area where if you click on it, it draws an ellipse and if you click on the erase button, it clears everything. But it's not working! Can you help him out?
a) Draw what the board looks like.
b-e) There are (at least) four things wrong in the code below. What are they?

```
void setup() {
size(500,500);
fill(255,0,0);
rect(50,100,100,100); // drawing area
fill(0,0,0);
rect(0,200,50,50);  // eraser button
if( mouseX > 50 && mouseX <150 && mouseY > 100 && mouseY <200){
   if( mousePressed == false ) {
     fill(0,0,0);
     ellipse(mouseX,mouseY,10,10);
   }
   else if( mouseX < 0 && mouseX < 50 && mouseY >200 && mouseY <250 ) {
      fill(255,0,0);
      rect(0,200,50,50);
   }
 }
}
```

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First:
1. SSH Tectia Client
   – unix.qatar.cmu.edu
   – your qatar id
   At the command prompt, type the following
   • mkdir www
   • fs sa www system:anyuser rl

1. Mode Java → JS
2. Filezilla
   – unix.qatar.cmu.edu
   – your qatar id
   – port 22
3. Drag web-export folder into www remote folder
4. www.qatar.cmu.edu/~USERNAME

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Carnegie Mellon Qatar

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round(some decimal number);

e.g.

int num;
num = round(4.9);

Lecture 12

Why are random numbers useful?

double a;
a = random(5); // returns value from 0-5 (exclusive)

But it's a double! What if we want a random int?

Lecture 12

Make your finch nose have a random color.

How many variables do you need?
What should the range for the random numbers be?

Start by putting all your code in setup.

When you have it working, move everything but the Finch initialization* into draw.

*Will the finch object need to have global or local scope?

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Let's show some text on the screen!

```
void setup() {
  size(500,500);
}
void draw() {
  text("Hello",100,50);
}
```

How do we change the color?

One more data type: String

```
String hello;
hello = "hi";
text(hi,100,50);
```

Let's get something from the user!

```
String userInput;
void setup() {
  size(500,500);
  userInput = "";
}
void draw() {
  text("Hello",100,50);
  text(userInput,100,100);
}


void keyPressed() {
  userInput = userInput + key;
}
```

Lecture 12

Let's convert something from the user!

The int() function can convert a String to an int.
str() takes a character and makes it a String.

```
String userInput;
void setup() {
  size(500,500);
  userInput = "";
}
void draw() {
  fill(255);
  rect(0,0,500,500);
  fill(0);
  int x = int(userInput) + 5;
  text(x,100,100);
}

void keyPressed() {
  userInput = str(key);
}
```

Lecture 12

Number Guessing Game:

Create a random integer between 0 & 9 (inclusive).

Have the user guess the number.

If the user's guess is too high, turn the Finch's nose red and have it buzz a low note for 2 seconds.

If the user's guess is too low, turn the Finch's nose blue and have it buzz a low note for 2 seconds.

If the user is correct, turn the Finch's nose green and have it buzz a high note for 2 seconds.