The World Health Organization Identifies Gaming Disorder as a Mental Health Condition

“The WHO’s impending beta draft… classifies gaming disorder as a pattern of behavior with ‘impaired control over gaming,’ in terms of its frequency, intensity, duration, and the capacity to quit. The disorder… is characterized by giving increased priority to gaming over other daily activities.

“The WHO’s decision highlights a schism among psychologists: some think the new designation is a welcome one, but others don’t see enough evidence to justify it.

“As our video game experience expands with virtual reality (VR) and augmented reality (AR), the argument gets even murkier.”

• [https://futurism.com/world-health-organization-identifies-gaming-disorder-mental-health-condition/](https://futurism.com/world-health-organization-identifies-gaming-disorder-mental-health-condition/)
Administrivia

- **Assignments:**
  - Lightbot Functions [hw] due today *before 11:59 pm* (1/8)
  - Taijitu [lab] due before lab on Thursday (1/11)

- First “big ideas” lecture this week: Binary
  - Reading due before lab on Thursday (1/11)
  - Brief discussion in lab on Thursday
Processing

- Our programming language for this course
  - Text-based language that is good for visuals and interaction
  - Try to focus on ideas and techniques, not the specific commands
  - No language is perfect – Processing has its fair share of quirks and deficiencies 😞

- It is both a programming environment (where you type) and a programming language
  - You are writing Java code, but they have made a lot of things easier
What You See

- You type your code here.
- Start debugger.
- Play/execute.
- Stop/terminate. 
- Default name.
Interactive Line Drawing
Line Drawing Code

```java
void setup() {
    size(500, 500);
    background(0, 0, 255);
}

void draw() {
    if (mousePressed) {
        stroke(255, 255, 255);
        line(150, 150, mouseX, mouseY);
    }
}
```

Other helpful environment features:
- Parentheses matching
- Error messages
- Semi-colon indicates end of statement
- Case-sensitive: `mouseX ≠ mousex`

There is color coding
Comments Are Critical!!!
The Processing Reference

Reference. Processing was designed to be a flexible software sketchbook.

Structure
() (parentheses) , (comma) . (dot) /* */ (multiline comment) /// /* (doc comment) // (comment) ; (semicolon) += (assign) [] (array access) {} (curly braces) catch class draw() exit() extends false final implements import import loop() new noLoop() null popStyle() shape()

Shape
createShape() loadShape() PShape

2D Primitives
arc() ellipse() line() point() quad() rect() triangle()}

Curves
bezier() bezierDetail() bezierPoint() bezierTangent() curve() curveDetail() curvePoint() curveTangent() curveTightness()
Aside: Processing Files

- Processing files have extension `.pde`
  - File names *cannot* contain dashes (`-`) use underscore (`_`) instead
- To run a Processing file, it *must* be in a folder of the same name
  - If it’s not, then Processing will create the folder for you
Understanding Color

- In electronic systems, color specified using the RGB color model
  - Red, Green, Blue

- Each pixel on your screen is made up of 3 tiny lights, one red, one green, one blue
  - Specify the intensity of each light using an integer between 0 and 255
    - 0 is completely off
    - 255 is highest intensity
Processing’s Color Selector

1. Use color slider to get to different color ranges
2. Use color field to select color
3. Copy RGB values from here

⑥ Open color selector
Guess the Color

- `color(R, G, B);`
- `color(255, 0, 0);`
- `color(0, 255, 0);`
- `color(0, 0, 255);`
- `color(0, 0, 0);`
- `color(255, 255, 0);`
- `color(255, 0, 255);`
- `color(0, 255, 255);`
Guess the Color

- `color( R, G, B);`
- `color(255, 0, 0);` // red
- `color(0, 255, 0);` // green
- `color(0, 0, 255);` // blue
- `color(0, 0, 0);` // black
- `color(255, 255, 255);` // white
- `color(255, 255, 0);` // yellow
- `color(255, 0, 255);` // magenta
- `color(0, 255, 255);` // cyan
Color Functions

- `background(R, G, B);`
  - Covers the entire drawing canvas with the specified color
  - Will draw over anything that was previously drawn
Color Functions

- `stroke(R, G, B);`
  - Sets the color of the stroke of a *line* or *line around a shape*
  - Can change line size using `strokeWeight(#);`
Color Functions

- `fill(R, G, B);`
  - Sets the *inside* color of a shape *(note: you cannot fill a line)*

```java
void setup() {
  size(500, 500);
  background(255, 255, 255);
}

void draw() {
  strokeWeight(5);
  stroke(0, 255, 0);  // green
  fill(255, 0, 255);  // magenta
  rect(100, 250, 125, 125);
}
```
Color: “Grays"

- When the values for RGB are all the same, then the color will be white, black, or some shade of gray
Color: “Grays"

- When the values for RGB are all the same, then the color will be white, black, or some shade of gray
  - For brevity, can specify just a single number instead

```java
void draw() {
    stroke(255, 0, 0);
    fill(0);
    rect(25, 25, 50, 50);
    fill(60);
    rect(25, 100, 50, 50);
    fill(120);
    rect(25, 175, 50, 50);
    fill(180);
    rect(25, 250, 50, 50);
    fill(255);
    rect(25, 325, 50, 50);
}
```
The Color “State” of Your Program

- Recall that programs are executed sequentially (i.e. instruction-by-instruction)

- `stroke()` and `fill()` apply to all subsequent drawing statements
  - Until a later call overrides

- Hidden color “state” that knows the current values of `stroke()`, `strokeWeight()`, and `fill()`
  - In complex programs, can be difficult to keep track of
  - Early rule of thumb: always explicitly set colors before each drawing element
Coordinate System

Math:

```
origin (0,0) is center
```

Processing:

```
origin (0,0) is upper-left
```

```
Drawing: Line

Example:

```plaintext
line (1, 2, 5, 2);
line (5, 2, 5, 5);
```
Drawing: Rectangle

- Default *mode* is **CORNER** (upper-left)

Example: `rect (1, 2, 4, 3);`  
`rect (3, 3, 1, 1);`
Drawing: Ellipse/Circle

- Default mode is CENTER

Example:
```cpp
ellipse (x, y, width, height);
```
Peer Instruction Question

- Which of the following drawings corresponds to the Processing code below?

```
strokeWeight(10);
stroke(75, 47, 131); // UW purple (line)
fill(183, 165, 122); // UW gold (inside)
ellipse(100, 100, 100, 200);
```

A. B. C. D.
Activity: Taijitu

- How do you build a complex drawing out of these simple shapes?

Example: `rect (1, 2, 4, 3)`; `ellipse (3, 3, 4, 6)`;