JOEL'S LECTURES' KEYWORDS

Counting systems: decimal, unary, binary

Computers

> Memory storage:

~ bits, bytes
~ data types: integers, floats, chars, strings

> Co-ordinates: (x,y) pairs

> Image compression: JPEG, MPEG, glitch

> Algorithm: Fast Fourier transform

> Feedback: video, audio, colour

> Nature simulations: cellula atomaton (Conway's Game of life, Nils Aall Barricelli, Stephen Wolfram), boids

JavaScript

> Libraries:

~ what and how to install
~ examples: p5.js, three.js, gui.js etc
~ APIs

> Control flow:

~ flow statements
~ boolean data type
~ conditional statements: if/else, switch
~ iteration: loops (for, while…)

> Scope: global, local

> Functions/methods

> Objects: object oriented programming

> Arrays: 1D, 2D and N arrays

> Class: encapsulation

> Asynchronicity: setTimeout(), setInterval(), callbacks, promises, handling errors

Dimensions: 1D, 2D, 3D, 4D
> 3D: z, storing 3D info (voxels, point clouds), polyhedron

Geometry

> Point, line, angle

> Polygons, polyhedrons, platonic solids

> Sine waves, cosine waves

Colour: digital colour mixing, complementary colours, RGB, HSB

P5.js

> Randomness: random(), noise()

> Time: year(), month(), day(), hour(), minute(), second(), millis()

> Asynchronicity/flow: draw(), preload(), loop(), noLoop(), redraw()

> Events:

~ Mouse & key: mouseX(), mouseY(), mouseIsPressed(), mouseClicked(), mouseDragged(), pmouseX(), pmouseY()… key(), keyIsPressed(), keyTyped()…

> Linear interpolation: lerp(), map(), easing

> Frames: frameCount(), deltaTime()

> Images: p5.Image, createImage(), pixels array, loadPixels(), updatePixels(), image(), loadImage()

References

> Pioneers: Charles Babbage, Ada Lovelace, Panini, Muhammad ibn Musa al-Khwarizmi, Ismail al-Jazari, Alan Turing, Grace Hopper, Margaret Hamilton, Ken Perlin, Seymour Papert, Alan Kay

> Artists/designers: Étienne-Jules Marey, Marcel Duchamp, Umberto Boccioni, James Turell, Richard Long, Nam June Paik, Sol LeWitt, Agnes Martin, Lillian Schwarz, Yayoi Kusama, Teching Hsieh, Anna Ridler