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P5JS

What is programming ?

In Simple words Programming language is a way to communicate with computer and devices.

What is P5JS ?

P5JS is a tool for creating awesome graphics on a blank canvas. It's a visual art tool used by not just programmer but also by data scientist , artists.

Getting Started on Web

To use web editor visit

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p5.js Web Editor

A web editor for p5.js, a JavaScript library with the goal of making coding accessible to artists, designers, educators, and beginners.

✱ https://editor.p5js.org/

You can also use

CodeSandbox: Online Code Editor and IDE for Rapid Web Development

No Setup Superfast Multiplayer Updates Live Shared A sandbox needs no setup - use a template to kickstart new projects, or start from a GitHub repo and begin coding in seconds. Accelerating developers and product teams A link is all you

⬡ https://codesandbox.io/

CodeSandbox

Free, instant, collaborative sandboxes for rapid web development

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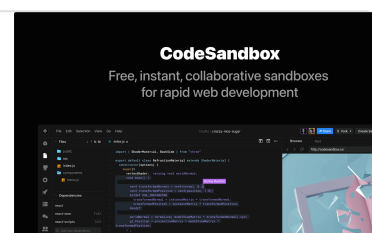
Getting Started on a local system

Download the p5js file from

Create a html file , a sketch file , a css file

Link the p5js script in head tag followed by sketch file. Create a main tag inside the body

```
<head>
<script src="p5.min.js"></script>
<link href="style.css">
</head>
<body>
<Main></Main>
</body>
```
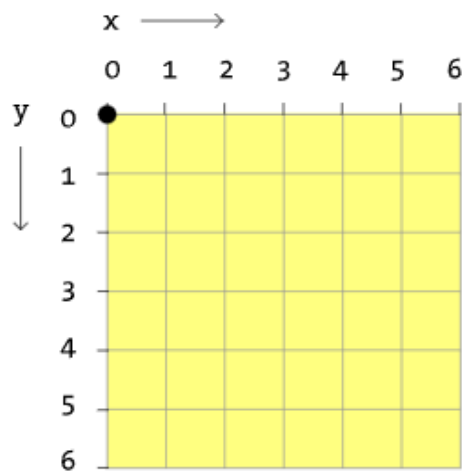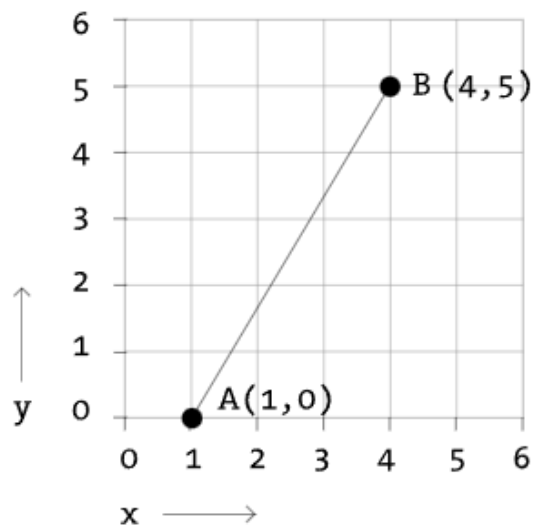
First Sketch

A simple javascript file

```
function setup() {
  createCanvas(400, 400);
}

function draw() {
  background(220);
}
```

Understanding Coordinates and Canvas

- Pixels are used to show graphics and visualization on screen.

- cartesian system is used in computer graphics but the origin of the coordinate start from the top-left corner of the screen.
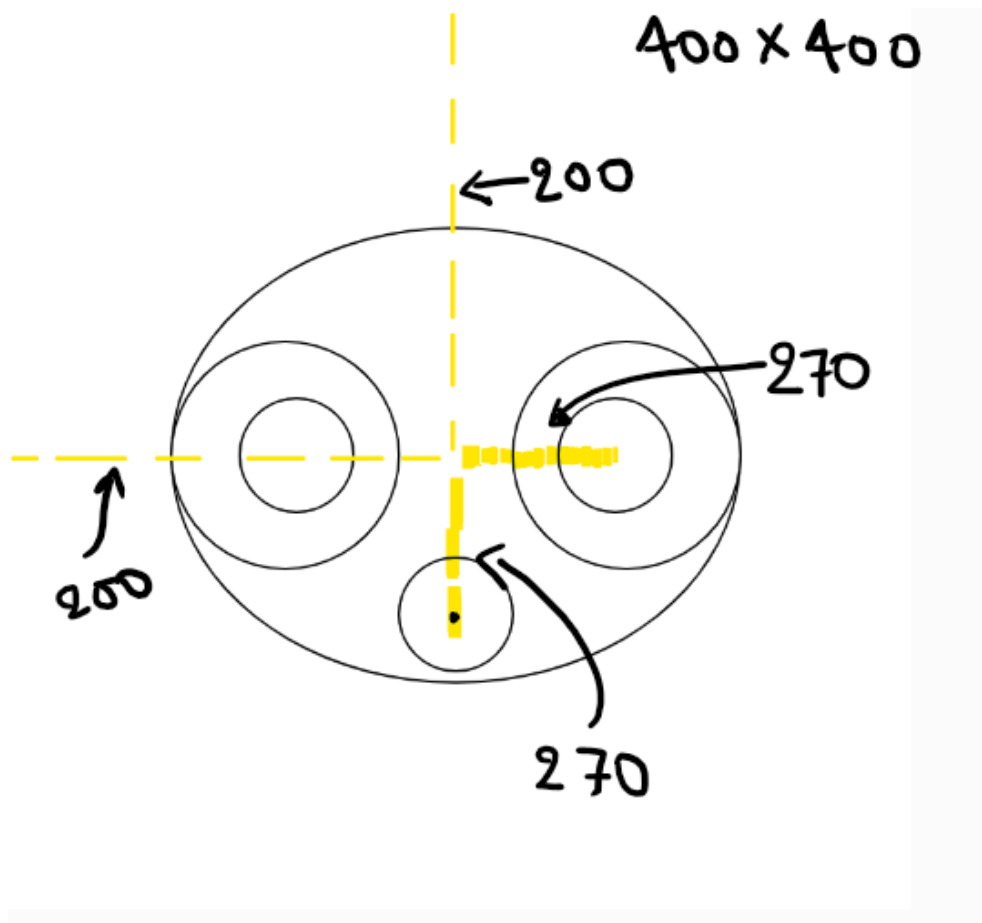
Computer

Simple Shapes

- Point - point()

- Ellipse - ellipse()

- Circle() - circle()

- Rectangle - rect()

- Line - line()

- Triangle - triangle()

Colors

- stroke()

- background()

- fill()

- colorMode()

- noStroke()

- noFill()

Comments in Javascript

Variables and Data types

Computer stores data (i.e number , character etc.) in **memory locations** . Variables are the storage location where data is stored. It stores value that **changes** as per the use. *It is like a box where you can store a fixed amount of data , but data may vary.*

Literals are the values or data that we assign to the variables.

Var , Let and Const are the three keywords used to declare variables in javascript. Variables can be strings or number .

- Strings

- Numbers

- Floating Numbers

- Boolean

Some example to demonstrate

- Linear Motion in 1D

- Linear Motion in 2D

- Oscillatory Motion

- Circular Motion

Functions and Methods

Functions are like machines. They can execute a set of instructions on data or variables and return the result. In simple words they are like machines which takes input and return output after processing. Methods are similar to function and there is no major difference. A method, is a set of instructions that perform a task. The difference is that a method is associated with an object, while a function is not. Objects in programming language is similar to real world object they have some properties or behaviour.

Conditions

Loops

Mouse and Keyboard interactions

Typography

Dynamic Typing Effect

2D transformation

- rotate()
- scale()
- translate()
- push()
- pop()

3D transformation

For reference

reference | p5.js

p5.js a JS client-side library for creating graphic and interactive experiences, based on the core principles of Processing.

https://p5js.org/reference/