Project description:

This sketch is a p5.js based processing sketch. The basic function is drawing. There are two mode that’s available: mouse mode and hand mode. The mouse mode allows the user to draw using mouse while the hand mode allows the user to draw using their hand through webcam. The mode is switch via button on the page. The hand mode uses ml5.js and handpose library. The handpose library is a pre-trained machine learning algorithm that detects individual finger along with it’s joints. This project made use of the key points for index finger and thumb. Only when you have your index finger higher than your thumb can you draw with line. This is being done via comparing the y position of the index finger with thumb finger. The hand mode also took the key point of the top of the index finger as the position of the drawing. It replaces the mouseX and mouseY in the mouse mode with key position of index finger. Other function such as changing the stroke weight, colour, shape of the drawing and reset the canvas is also available. There are two shape that available to use: line and square. The square is made of vertexes and it’s supported on both hand mode and mouse mode. There’s a hint section on the bottom of the canvas where it will tell the user if the top-left vertex has been selected and if the square has finished drawing. The user has 1 second to move their finger to next location to select the top-left vertex. The time is built based on frameCount and with the help of the time, I managed to delay the detection rate when user is drawing rectangle so that they have time to find their top-right vertex. To detect finish drawing squares, it’s been set that if user didn’t move their hand more than threshold (10) and the time between previous update timer is more than 2 seconds, it will consider the square as finished drawing. The last function is to save the current canvas (the drawing and webcam) as an image and download it to user’s computer.

User guide:

This program is written in JavaScript and require processing p5.js mode to run. The hardware requirement is a USB camera or a building camera with functional keyboard and mouse. To start drawing, the default mode is mouse drawing mode with line option where you can simply draw thing on the left half of the canvas and the right half of the canvas is for webcam display. The purpose of the webcam is to show how the user can drawing with their hand. Their movement in the webcam will be reflected on both webcam section and drawing board to give them a reference of drawing. To switch modes or selecting different colour, stroke width, shape or reset the canvas, use the button on the bottom of the canvas. To save the current canvas, press lowercase ‘s’ to save and download the canvas as a png image. The image will contain both canvas and webcam footage.

You are only allowed to draw rectangle use top-left vertex as the fix point and drag down or left to draw the rectangle. It might be an easier version of the first assignment but because it’s in different language, it’s not yet fully developed. More function could be added to enrich the application.

Source:

Also available on GitHub if the zip file is not working.