Automata programming assignment part 1

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Q1

First subpart(“I’m a mirrorball)
For this subpart the html code is 1.html and javascript code is 1.js and there is lindenmayer.browser.js also included and the image for this subpart is 1.png

Second subpart(“Is that a tree?”)
For this subpart the html code is 2.html and javascript code is 2.js and there is lindenmayer.browser.js also included and the image for this subpart is 2.png

Third subpart(“Anything that can happen will happen”)
For this subpart the html code is 3.html and javascript code is 3.js and there is lindenmayer.browser.js also included and the images for this subpart are 3_1.png, 3_2.png,3_3.png, 3_4.png,3_5.png

Fourth subpart(“Content without context is noise”)
For this subpart the html code is 4.html and javascript code is 4.js and there is lindenmayer.browser.js also included and the image for this subpart is 4.png

Q2
Stick plant

From the given diagram it was clear that the diagram turned right wards initially so we had + sign and then the lengths got repeated (“X”) (axiom) and then it turned left so a “-” sign and length got divided in similar manner so another repetition (“X”) and hence the axiom would be

X = F[+X]X[-X]F[X]

And the diagram also maintained ratios hence we use F = FF
Angle should be 45 because otherwise it would tilt left or right

Santa K(l)osh

Here initially it was inclined to the right hence the axiom must have a “+” sign and from the diagram (in 5 iterations) we can observe that the diagram is behaving like koch curve and hence the production rules for creating koch curve are enough and hence

X = X-X++X-X

And axiom is +X

Angle is 68 (Since diagram is tilted approximately between 60 and 80 But subsequent iterations gave us that best possible angle is 68)

(In other words this diagram looks like the same diagram when koch curve is broken into similar pieces but koch diagram results in polygon and to break it we need to change the axiom)