OLLSCOIL NA GAILLIMHE
UNIVERSITY OF GALWAY

The University of Galway

Postgraduate Certificate
(Creative Technologies and Emerging Media)

Level 9

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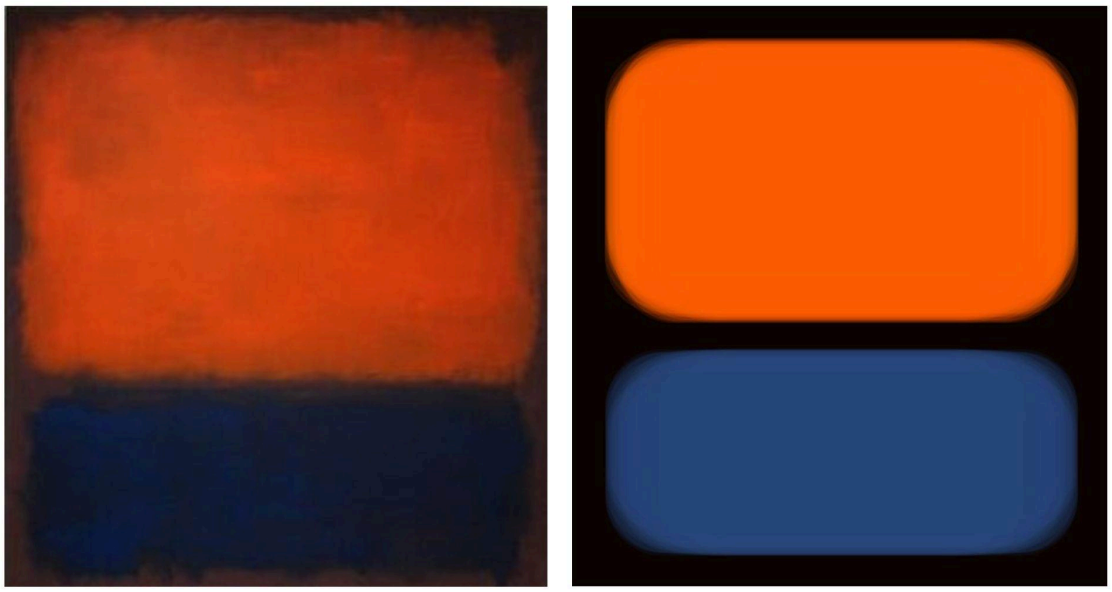
Course:	2526-FM6128 Creative Coding
Assignment:	Final Assignment

Submitted for assessment in Creative Coding

ROTHKO.exe



A pause inside the machine

ROTHKO.exe - Contents

Digital stillness, soft colour, and calm generative systems inspired by Rothko's atmosphere.

LIA • Casey Reas • Ana Montiel • Pauric Freeman • Andreas Fischer • Daithi Magner

3. Introduction

A reflection on visiting the Rothko Room and wondering whether digital art can create similar quiet.

4. Exhibition Development

Exploring slowness in digital media, gentle movement, gradients, and theoretical influences on digital calm.

5. Artwork: Electric Rothko

A generative piece using layered colour fields, slow shifts, and noise-driven motion.

6. Final Reflections

Learning how digital art can be contemplative, emotional, and atmospheric.

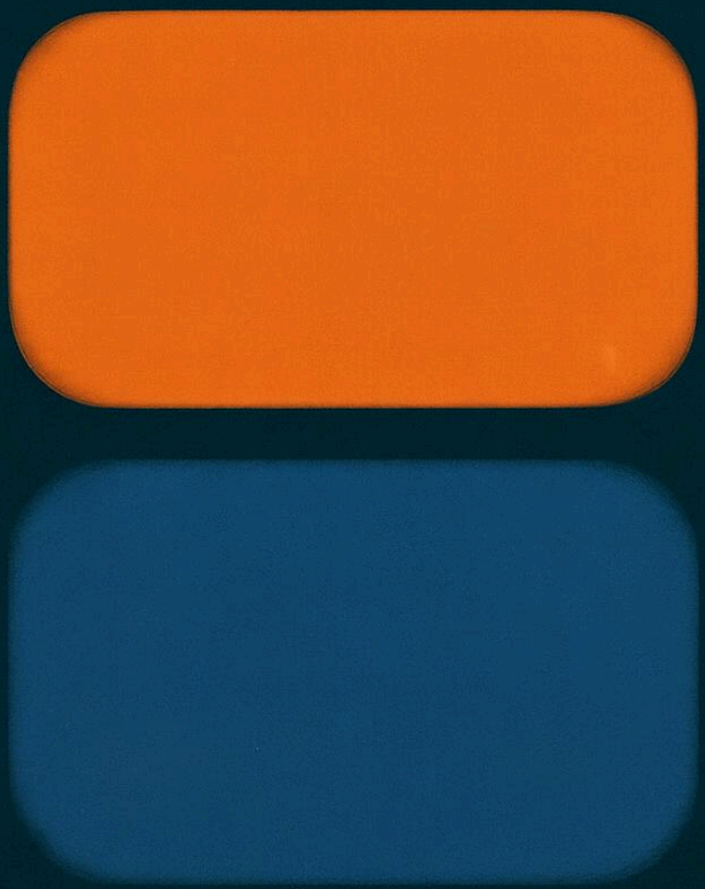
7. Bibliography

1.Curatorial Description

Rothko.exe is an exhibition about finding stillness in a digital world that moves too fast. The artworks use code, soft colour, gradients, and slow movement to create calm, quiet spaces on-screen. The idea came from my personal experiences with Mark Rothko's No.14 (1960) and the Seagram Murals at Tate Modern, where I learned how powerful slow, simple colour can be. Although the exhibition is not about Rothko himself, his paintings helped me notice how digital art can also create atmosphere and emotional depth. The artists in this show each use generative systems in their own way to make work that feels gentle, reflective, and peaceful.

ROTHKO.exe

An exhibition that explores stillness through code, slow gradients, and soft forms.



LIA Casey Reas
Ana Montiel Pauric Freeman
Andreas Nicolas Fischer Daithi Magner

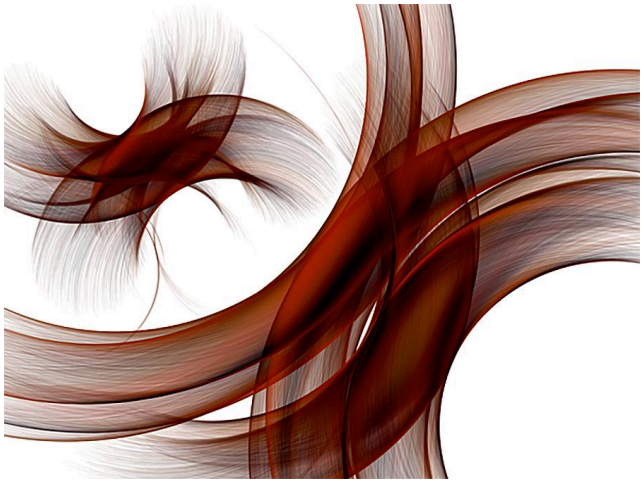
2. Featured Artists

Artist: LIA

Artwork: Arcs 21 (2009)

Arcs 21 – A Continuous Practice in Generative Art Since 1995.

Arcs 21 is a generative, interactive artwork developed by LIA in 2009, built entirely from code that continuously produces shifting abstract forms. Its visual language is intentionally minimal, allowing shapes and motions to emerge and dissolve in a way that invites viewers to project their own emotions and interpretations. Much like Rothko's colour-field paintings, the piece avoids representation and instead focuses on atmosphere, perception, and quiet intensity. By translating this tradition of reductive abstraction into computational processes, Arcs 21 embodies the exhibition's central idea: that simplicity, even in digital systems, can create powerful and contemplative artistic experiences.



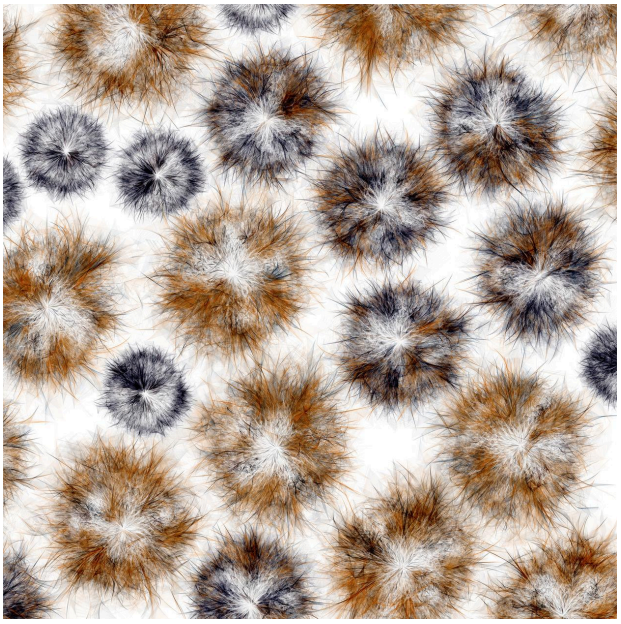
About: LIA is an Austrian software artist who has been exploring generative and digital art since 1995. Working primarily with code, she treats programming as a creative dialogue: ideas are translated into written structures that generate evolving visual forms. Her practice blends the traditions of drawing and painting with the aesthetics of algorithms, resulting in minimalist works built from movement, colour, and abstraction. Through this reduction, LIA encourages viewers to engage with her pieces on a perceptual and intuitive level. Based in Vienna, she remains an influential figure in the field, exhibiting and producing work internationally.

Artist: CASEY REAS

Artwork: Process 14 (2008)

Process — REAS.com

Casey Reas is a leading figure in generative art and the co-creator of the Processing programming language. His artworks are built entirely from code, using software as a creative material rather than traditional tools. By defining simple rules and instructions, Reas allows complex, abstract forms to emerge through system-driven behaviour. Works like Process 14 (2008) show how minimal computational structures can produce rich, painterly visual fields, echoing the emotional clarity and abstraction central to this exhibition. His practice demonstrates how simplicity within coded systems can generate powerful aesthetic experiences, making him an ideal contributor to this theme.



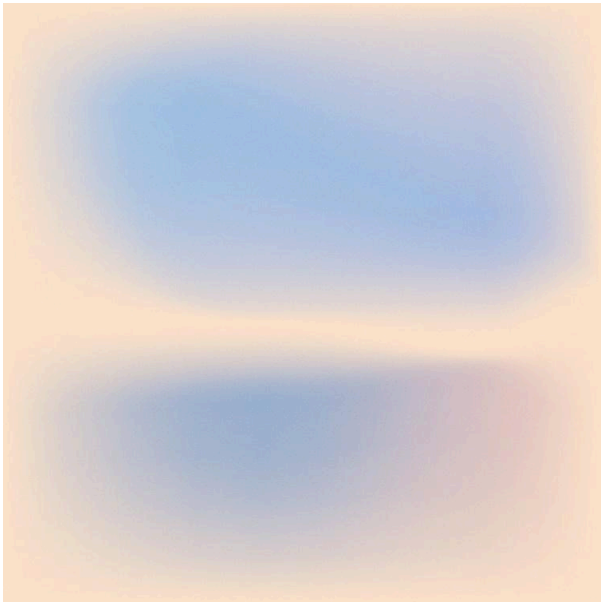
About: Casey Reas is an American artist and educator whose work explores the connection between computational systems and contemporary visual culture. Working across software, installations, prints, and drawings, he creates generative frameworks that unfold over time, often echoing the traditions of conceptual art and drawing. His work has been exhibited internationally in major institutions, and he is widely known as the co-founder of Processing, the open-source platform that transformed creative coding for artists and designers. Reas teaches at UCLA, where he continues to shape both the practice and discourse of software-based art.

Artist: ANA MONTIEL

Artwork: FIELDS 61 : Presence is Expansion. 2018

FIELDS - Ana Montiel

Ana Montiel's work aligns naturally with the exhibition's focus on simplicity and the emotional power of minimal abstraction. Her Fields of Frequency series uses restrained gradients, subtle repetition, and spacious compositions to create quiet, meditative environments. While not generative, her digital approach echoes the logic of computational minimalism: reduction, layering, and controlled variation. The result is work that feels atmospheric and contemplative, inviting viewers into a slow, reflective space. Montiel extends the tradition of colour-field painting into a digital era, demonstrating how minimal, non-representational forms can still hold a rich emotional presence, perfectly supporting the exhibition's core theme.



About: Ana Montiel is a visual artist and designer known for her atmospheric colour-field works across digital and physical media. Her practice explores perception, repetition, and the psychological effects of colour, creating compositions that feel meditative and immersive. Montiel's pieces often blur the line between painting and digital space, using gradients, layering, and minimal forms to evoke mood rather than depict imagery. Rooted in introspection and emotional subtlety, her work embraces calm, openness, and sensory stillness, making her a compelling figure in contemporary abstract art. She is originally from Spain and works internationally.

Artist: PAURIC FREEMAN

Artwork: Skin Liquid State (2020) (Audiovisual composition Video, 2 channel audio)

https://www.pauricfreeman.com/projects

Freeman's work aligns with the exhibition's focus on minimal, powerful abstraction in the digital realm. Skin Liquid State uses generative systems to create fluid, abstract visuals that evolve over time, colour, shape, and movement emerge from code and sound, not from representation. This resonates with the same spirit as abstract colour-field painting: reductive, meditative, emotionally evocative. The work demonstrates how simplicity and computational minimalism can evoke immersive, contemplative spaces. In merging audio and visual data through code, Freeman extends the tradition of abstraction into a dynamic, digital medium, making his work a natural fit for the exhibition's exploration of the power in simplicity.

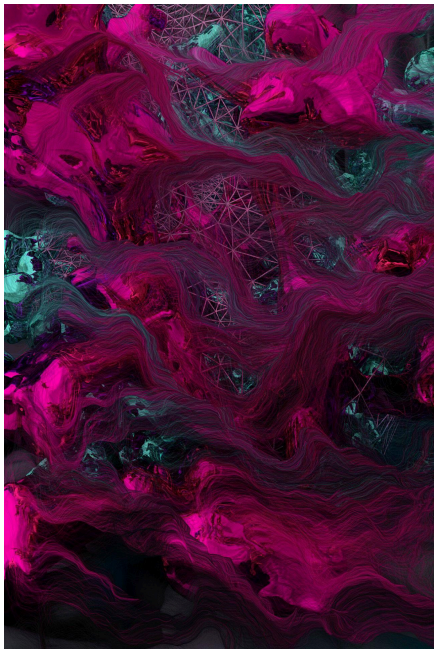
About: Pauric Freeman is an Irish new-media artist and interaction designer whose work spans audio-visual performance, realtime generative graphics, and interactive installations. He translates sound, data, and algorithmic logic into visual compositions, often using tools like TouchDesigner and modular synthesizers. His practice investigates perception, how sound and image combine to alter consciousness and evoke mood. With a background in electronic music and creative coding, Freeman creates immersive, abstract environments where form, colour, motion, and sound merge into unified sensory experiences.

Artist: ANDREAS NICOLAS FISHER

Artwork: Schwarm VI

https://studioanf.com/bfa-x-schwarm-vi-generative-3d-artwork/

Schwarm VI generates abstract compositions via code: particles drift, interact and leave overlapping trails, producing softly blended colour-fields and evolving textures. The result reads like a digital colour-field painting minimal, non-representational, atmospheric and meditative. Its generative, algorithmic origin underscores how computational systems can evoke the same emotional and perceptual depth found in traditional abstraction. As a still (or paused) frame, the output behaves as a modern “digital canvas,” directly resonating with the exhibition's emphasis on simplicity, abstraction, and the expressive potential of code-based art.



About: Andreas Nicolas Fischer is a Berlin-based generative artist who works across software, prints, video, and installations. Using custom algorithms, he transforms computational processes into abstract visual compositions, exploring how code can produce form, light, texture, and colour without manual painting. His practice investigates the boundary between digital systems and aesthetic abstraction, often rendering works that blur atmospheric light and shifting geometry into minimalist, emotive imagery. Fischer’s work reveals how generative systems can create visually rich, contemplative spaces, positioning him as a significant figure in contemporary digital abstraction.

3. Introduction

This project began with my visits to the Rothko Room at Tate Modern when I lived in London. Sitting with the Seagram Murals made me think about how stillness can feel powerful. When I started working with p5.js, I wondered if digital art could also create quiet moments. That question shaped this exhibition.

4. Exhibition Development

The idea for **ROTHKO.exe** emerged from recognising a tension between the fast pace of digital culture and the slow, contemplative experience I have always valued in painting. Digital environments encourage rapid consumption: we scroll without pausing, switch between applications instantly, and absorb visual information at a constant, unreflective speed. This creates a perceptual state that Abigail De Kosnik (2016) describes as part of the “always-on” nature of digital life, where content moves continuously and attention rarely settles. In contrast, my encounters with abstract painting, particularly with Mark Rothko’s work, have always been defined by stillness, duration, and emotional absorption. When I visited the Rothko Room at Tate Modern, especially the nine *Seagram Murals*, I found myself entering a kind of suspended time. The soft edges, deep hues, and quiet luminosity produced a sense of calm that felt completely at odds with the accelerated rhythm of contemporary media.

This contrast sparked the central question behind the exhibition: *Can digital art produce a similarly contemplative experience?* Rather than assuming digital systems are inherently fast, loud, or overstimulating, I became interested in artists who use generative tools to produce atmospheres of slowness and quiet. Early in my research, I noticed that digital tools are in fact extremely capable of creating softness. Techniques such as low-opacity layering, subtle gradients, Perlin noise, and noise-driven motion are perfectly suited to generating slow, evolving visuals. These methods allow for forms that drift rather than jitter, colours that dissolve rather than snap, and compositions that reward extended looking. Contrary to the stereotype of digital media as harsh or artificial, many generative works exhibit behaviours that feel organic and meditative.

Thinking about digital stillness led me to explore theoretical ideas around presence and reproducibility. Walter Benjamin’s *The Work of Art in the Age of Mechanical Reproduction* (2008) addresses how technological media transform the aura of an artwork. Although digital works can be infinitely reproduced, generative art complicates Benjamin’s distinctions: because each iteration is generated in real time, it is technically reproducible yet never identical. A generative artwork does not have a single “original”,

but it produces a continual stream of unique states, each one momentarily holding an aura of presence. This helped me understand why slow, gradually changing digital works can feel alive, even though they are made of code.

Remix theory also became important to the development of **ROTHKO.exe**. Lawrence Lessig (2008) and Eduardo Navas (2012) argue that contemporary creativity is built through reuse, reinterpretation, and transformation of existing material. My interest in Rothko was not about replicating his paintings, but about understanding how his sensibility, the softness, the atmosphere, the emotional depth, could be translated into a digital idiom. This theoretical framing helped me articulate why the exhibition draws on historical abstraction while presenting artworks that are unmistakably digital.

To further strengthen the curatorial context, I looked at artists and exhibitions that treat digital media as a space for reflection rather than distraction. LIA's *Arcs 21* uses gradual motion and simple geometric forms to produce a calming, almost meditative experience. Casey Reas's *Process 14* explores generative systems that behave like living organisms, but at a slow, painterly pace. Ana Montiel's *Fields* series emphasises soft colour transitions reminiscent of atmospheric studies. Pauric Freeman's *Skin Liquid State* incorporates sound-responsive visuals that pulse gently, creating a bodily sense of quiet rhythm. Andreas Nicolas Fischer's *Schwarm* works use particle simulations to build dense, slowly shifting colour fields. Each of these artists demonstrates that digital systems can be used not for acceleration but for subtlety.

Their works also link to a broader conversation about digital accessibility and creative openness. De Kosnik (2016) and Sobande (2020) discuss how digital tools allow for more participatory forms of creativity, and Waysdorf & Reijnders (2018) describe how digital environments create new forms of cultural engagement. Tools like Processing and p5.js embody this accessibility: they allow artists, beginners, and coders alike to experiment with abstract forms and generative logic. This makes digital abstraction a continuation of the modernist tradition, but in a more democratic context. Rather than a specialised, exclusive field, abstraction becomes something that can be explored by anyone with a browser and a few lines of code.

By bringing these threads together, digital temporality, generative slowness, remix theory, accessibility, and the emotional resonance of colour, the exhibition **ROTHKO.exe** frames digital stillness as a meaningful cultural proposition. In a world that moves too fast, creating spaces for quiet looking feels not only relevant but necessary. The featured artists demonstrate that digital art does not have to mirror the acceleration around it; instead, it can offer an alternative: a space of softness, presence, and reflection.

5. ARTWORK: Electric Rothko

Description: Electric Rothko is a p5.js generative artwork that transforms Rothko's colour-field aesthetics into slow, digital motion. Transparent layers and Perlin-noise movement create gently shifting fields of warm and cool colour, producing a calm, atmospheric composition that feels as though it is quietly breathing.

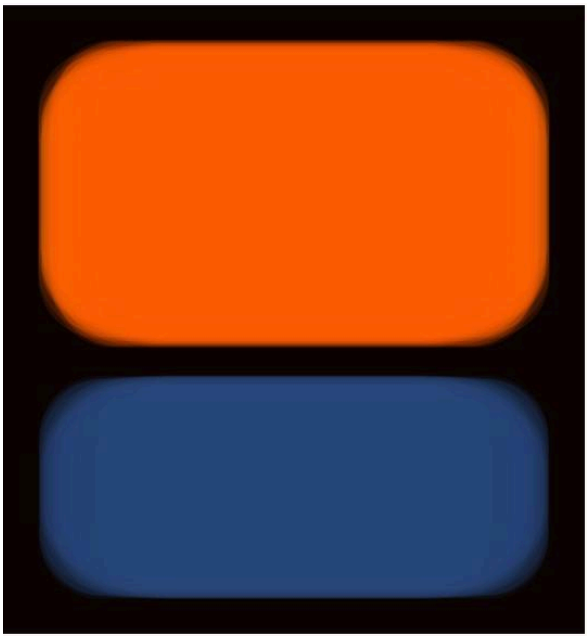
Link: p5.js Web Editor | Final Assignment

Overview:

Electric Rothko is a generative artwork created in p5.js that explores how digital systems can evoke a sense of softness, atmosphere, and emotional stillness. The piece takes structural inspiration from Mark Rothko's *No.14* (1960), but it does not attempt to imitate his paintings directly. Instead, it interprets Rothko's language of colour fields through algorithms, transparency, and slow computational change. The work consists of two large digital fields, an upper area of warm reds and oranges, and a lower area of deep blues, that gradually shift over time through hundreds of layered, semi-transparent shapes. The result is a screen-based composition that appears to breathe.

Rothko No.14

The conceptual motivation for *Electric Rothko* began with a personal experience. When viewing Rothko's *Seagram Murals* at Tate Modern, I was struck by the sensation that the paintings were subtly alive. The colours seemed to pulse with a quiet internal movement, even though the canvases were still. This perceptual effect is partly due to layering and pigment saturation, but it also relates to the way viewers' eyes adjust to large fields of colour over time. I later encountered a similar sensation when watching Pauric Freeman's *Skin Liquid State*, where audio-responsive forms shift across the screen with a mesmerising, organic rhythm. The connection between these experiences, one analogue, one digital, inspired me to explore whether generative art could produce a similar feeling of breathing colour.



Electric Rothko

Technically, the piece is built through a system of repeated draws, each one placing a semi-transparent rectangle whose colour is chosen from a narrow palette. Over time, these layers accumulate to form soft gradients, blurred transitions, and slow-moving boundaries between colours. Perlin noise drives both the motion and the subtle variation of the colour fields. Because noise produces smooth, continuous values, the motion never feels abrupt. Instead, it creates the sense of internal drift. Edges soften as new layers blend into previous ones, and the colours gradually evolve across minutes rather than seconds. This places the viewer in a mode of slow perception, mirroring the temporal experience of staring at a Rothko.

An important aspect of the artwork is that it does not loop in a predictable way. The algorithm continually generates new variations, meaning the piece is always in a state of becoming. This connects to Benjamin's discussion of aura: although a digital work can be reproduced infinitely, the generative process produces fleeting uniqueness. Each moment of *Electric Rothko* exists only once. This shifting presence encourages a type of looking that is attentive and contemplative, rewarding viewers who spend time with the work.

In developing the piece, I drew from the approaches of the other artists featured in **ROTHKO.exe**. From LIA, I adopted the idea that simple shapes layered over time can produce unexpected atmospheric effects. From Casey Reas, I learned how procedural systems can create painterly textures that emerge from rules rather than manual composition. Montiel's use of soft gradients influenced the colour transitions in *Electric Rothko*, while Freeman's audiovisual sensitivity inspired the slow pulsing motion. Fischer's particle-based fields informed how I approached texture and depth within the digital colour areas. *Electric Rothko* therefore functions as the curatorial anchor because it synthesises these techniques and sensibilities into a single work.

The creation process was iterative and experimental. I spent significant time adjusting opacity values to achieve the right level of softness, exploring different noise scales, and balancing the colour palette so that the warm and cool fields harmonised without overpowering each other. I also tested the piece on multiple screens to ensure the subtle shifts remained visible and atmospheric. Coding became a form of painting, layering, blending, and adjusting, except the brush was Perlin noise and the pigment was digital colour.

Ultimately, *Electric Rothko* expresses the core theme of the exhibition: digital stillness. It demonstrates that generative art can produce emotional depth, atmospheric colour, and contemplative experiences that resonate with the traditions of abstract painting. The work bridges analogue influence and digital process, showing that softness and slowness can be coded just as meaningfully as they can be painted.

6. Final Reflections

Working on ROTHKO.exe helped me understand how digital art can create emotional and contemplative experiences similar to painting. When I first started the project, I didn't know if generative art could hold the same sense of presence I felt in the Rothko Room at Tate Modern. But through research, selecting artworks, and creating Electric Rothko, I learned that digital art can be slow, gentle, and absorbing in its own way.

Reading theorists like Benjamin, Lessig, Navas, De Kosnik, Sobande, and Waysdorf helped me see digital art as part of a bigger conversation about creativity, remixing, and access. These ideas made me think differently about how digital stillness fits into contemporary culture.

Working with p5.js showed me how simple choices - soft colours, slow pacing, layered shapes - can create strong emotional effects. I learned that writing code can be expressive and atmospheric, not just technical. Making Electric Rothko taught me how important subtle movement and controlled randomness can be in generative work.

Overall, this project combined my personal experiences, creative coding work, and the academic ideas I studied. It showed me that contemplative art can exist on screens as well as canvases, and that slowness in digital art can be meaningful. In a world that moves quickly, creating an exhibition about digital stillness felt both important and relevant.

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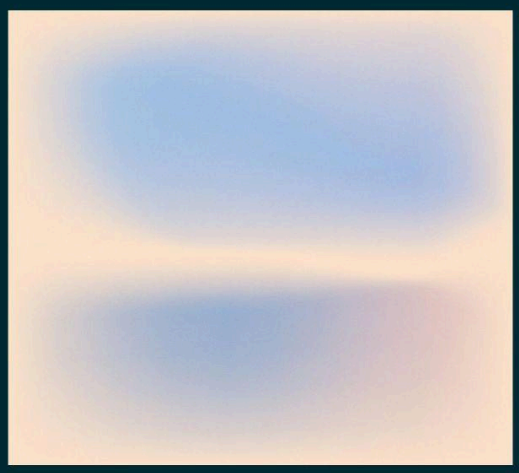
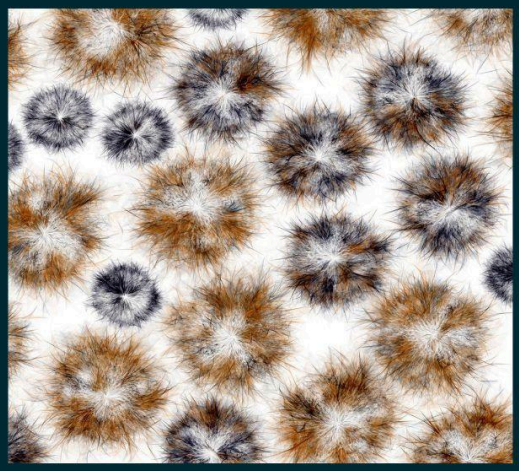
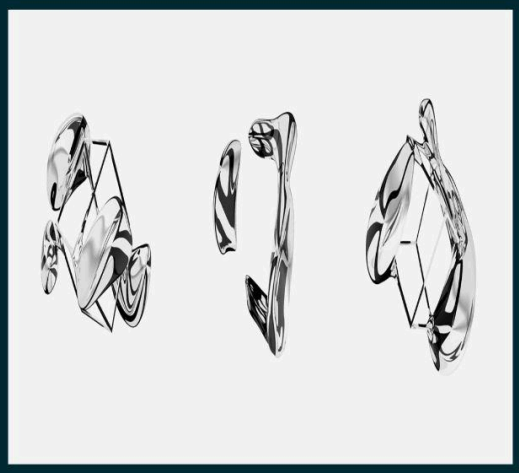
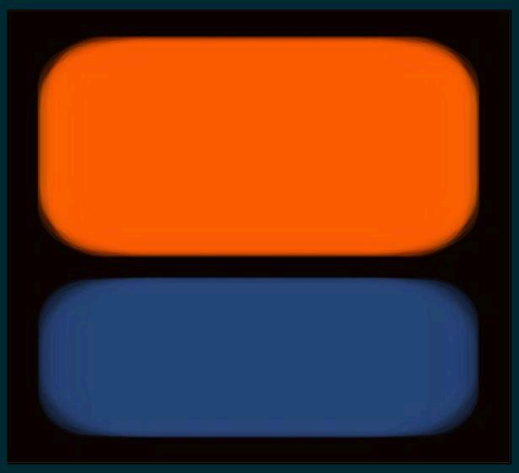
ROTHKO.exe









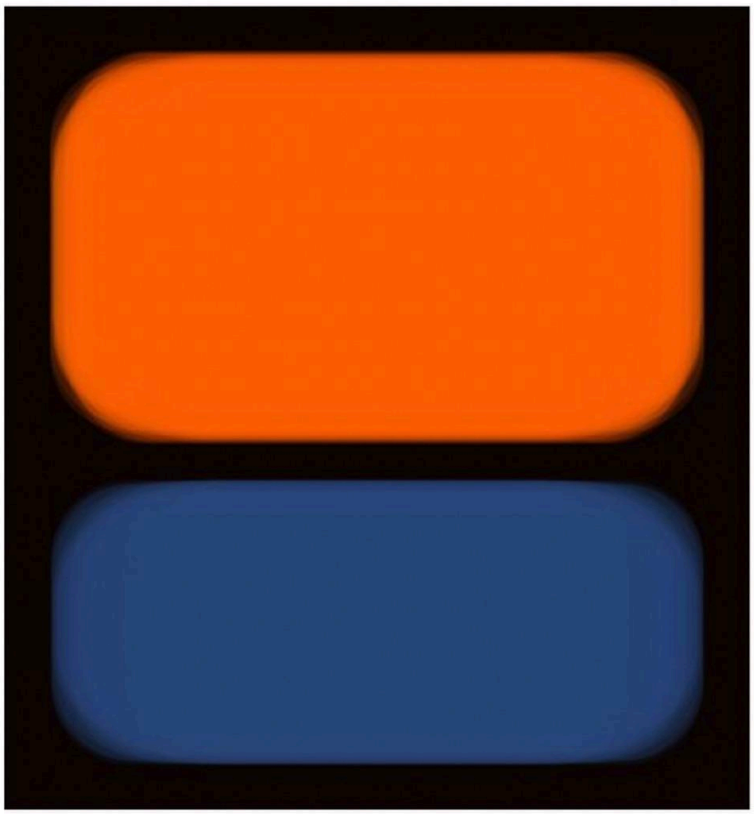
ARTWORK: Electric Rothko

by Daithi Magner
Made in p5.js

```
// My interpretation of how a Rothko painting feels up close.
// The colours feel like they move, and there's a sense of sound.
// Clicking the canvas makes the image "breathe" and the tones fade in.

let NUM_LAYERS = 120; // how many rectangles to draw in each block

// SOUND: two oscillators and a flag
let oscTop, oscBottom;
let soundStarted = false;

function setup() {
  createCanvas(536, 580);
  colorMode(HSB, 360, 100, 100, 100);
  noStroke();

  // SOUND oscillators
  oscTop = new p5.Oscillator("sine");
  oscBottom = new p5.Oscillator("sine");

  // Start with zero volume
  oscTop.amp(0);
  oscBottom.amp(0);
}

// One click starts the audio and turns on the oscillators
function mousePressed() {
  if (!soundStarted) {
    userStartAudio();
    oscTop.start();
    oscBottom.start();
    soundStarted = true;
  }
}

function draw() {
  background(15, 80, 5); // deep background colour

  let t = frameCount * 0.009; // time value for animation

  // Layout and margins for the two main blocks
  let margin = width * 0.06;
  let innerX = margin;
  let innerY = margin;
  let innerW = width - margin * 2;
  let innerH = height - margin * 2;

  let gap = innerH * 0.05; // space between blocks
  let topH = innerH * 0.55; // height of top block
  let bottomH = innerH - topH - gap;

  // Pulsing values for gentle breathing motion
  let pulseTop = 1 + 0.55 * sin(t * 0.8);
  let pulseBottom = 1 + 0.6 * sin(t * 0.75 + 1.5);

  // Slow colour shifts
  let hueShiftTop = 8 * sin(t * 0.3);
  let hueShiftBot = 10 * sin(t * 0.28 + 2.2);

```

```
  // Slight saturation changes over time
  let satPulseTop = 1 + 0.25 * sin(t * 0.9 + 0.4);
  let satPulseBot = 1 + 0.3 * sin(t * 0.85 + 2.1);

  randomSeed(12345); // keep the random look consistent

  // Update the sound according to the pulsing motion
  if (soundStarted) {
    // Frequencies based on the pulse values
    let topFreq = map(pulseTop, 0.4, 1.6, 50, 95);
    let botFreq = map(pulseBottom, 0.4, 1.6, 30, 60);

    oscTop.freq(topFreq);
    oscBottom.freq(botFreq);

    // Volume also responds to the pulsing
    let topAmp = map(pulseTop, 0.4, 1.6, 0.05, 0.35);
    let botAmp = map(pulseBottom, 0.4, 1.6, 0.05, 0.35);

    oscTop.amp(topAmp, 0.05);
    oscBottom.amp(botAmp, 0.05);
  }

  // Draw the top block
  drawField(
    innerX,
    innerY,
    innerW,
    topH,
    18 + hueShiftTop,
    85 * satPulseTop,
    90,
    pulseTop
  );

  // Draw the bottom block
  drawField(
    innerX,
    innerY + topH + gap,
    innerW,
    bottomH,
    215 + hueShiftBot,
    80 * satPulseBot,
    40,
    pulseBottom
  );
}

function drawField(x, y, w, h, baseH, baseS, baseB, pulse) {
  push();
  rectMode(CENTER);
  translate(x + w / 2, y + h / 2);

  let cornerR = w * 0.12; // soft corner radius

  // Draw many translucent rectangles to build the texture
  for (let i = 0; i < NUM_LAYERS; i++) {
    let rw = w * random(0.7, 1.0);
    let rh = h * random(0.7, 1.0);

    let hCol = baseH + random(-4, 4); // slight hue variation
    let sCol = baseS + random(-8, 8); // slight saturation variation

    let bCol = baseB * pulse + random(-5, 5); // brightness affected by pulse
    bCol = constrain(bCol, 0, 100);

    fill(hCol, sCol, bCol, 12); // low opacity for build-up effect
    rect(0, 0, rw, rh, cornerR);
```

```
127 |   }
128 |
129 |   pop();
130 | }
```



Electric ROTHKO

https://editor.p5js.org/Daithi/sketches/QynIJ9Y8V