



**MDCO | A Senior Project by Jimmy Fisher**

MOME 448 Senior MOME Project II | Fall 2010 | Professor Austin Shaw

# WHAT IS MDCO?

MDCO is an acronym for Modern-Day Color Organ.

Stemming back to an idea from the 18th century, a handful of artists between the late-1800s and the mid-1900s created machines using instrumental organs and wiring to create a form of motion graphics far beyond their times. Artists such as Louis Bertrand Castel, Bainbridge Bishop, Mary Hallock-Greenewalt, Thomas Wilfred, and Oskar Fischinger used their creativity and imaginations to build these devices that associated specific tones to colored lights. People would come to view these displays and showings as a form of entertainment.

MDCO is a project that utilizes modern techniques in respect to the tradition of the color organ. By using software, MIDI input/output devices, and projection, MDCO brings a new meaning to the term “color organ” and a new realization of an interactive form of motion media design.



# THE NARRATIVE

MDCO's performance follows a general narrative that guides the audio and visual elements.

It's all about the **PROCESS**.

The piece will start and finish the same—with a small dot/blip that will emanate with the audience. The process will be paralleled with a human life, as human life is a process and all about the journey. Although the points of birth and death are vital to existence and the circle of life (no Lion King reference intended), the journey of growth and hitting the landmark moments in life are what truly makes a person whom he or she is.

The visuals in this piece will reflect this life journey. Background imagery will fade in and out while panning of locations that correlate with that stage in life; for instance, a playground for childhood. These will be in black and white, high contrast, very stylized. The animations controlled by the keyboard will be short, interacting vectors that allude to the stage in life in color, action and shape.

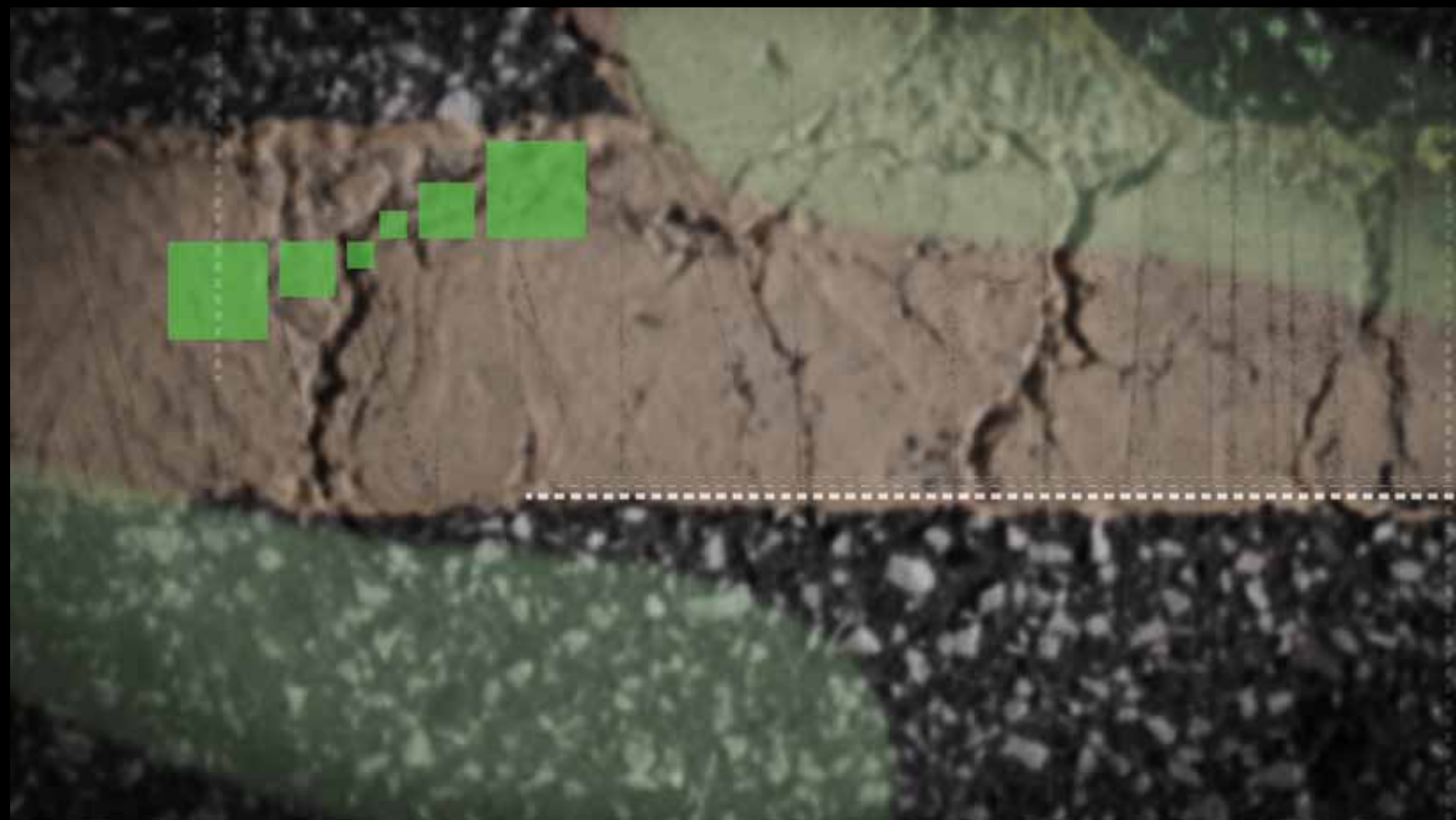
The path will go as follows: birth, a baby stage, learning through childhood and the development that goes along with it, teenage years and angst, graduation and the celebration accompanying it, the real world hitting and its struggles, the mid-life crisis and the chaos it creates, retirement and the slowing down of life and finally, death.

The audience will leave with a sense of journey and understanding of the story created by the music and the visuals and will be able to share with others their own interpretation of the work.

The colors below correlate with the transitional stages of life MDCO will follow.



# STYLE FRAMES



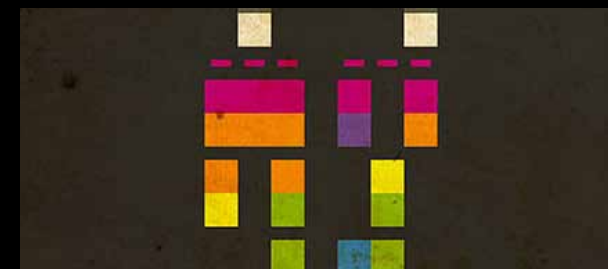
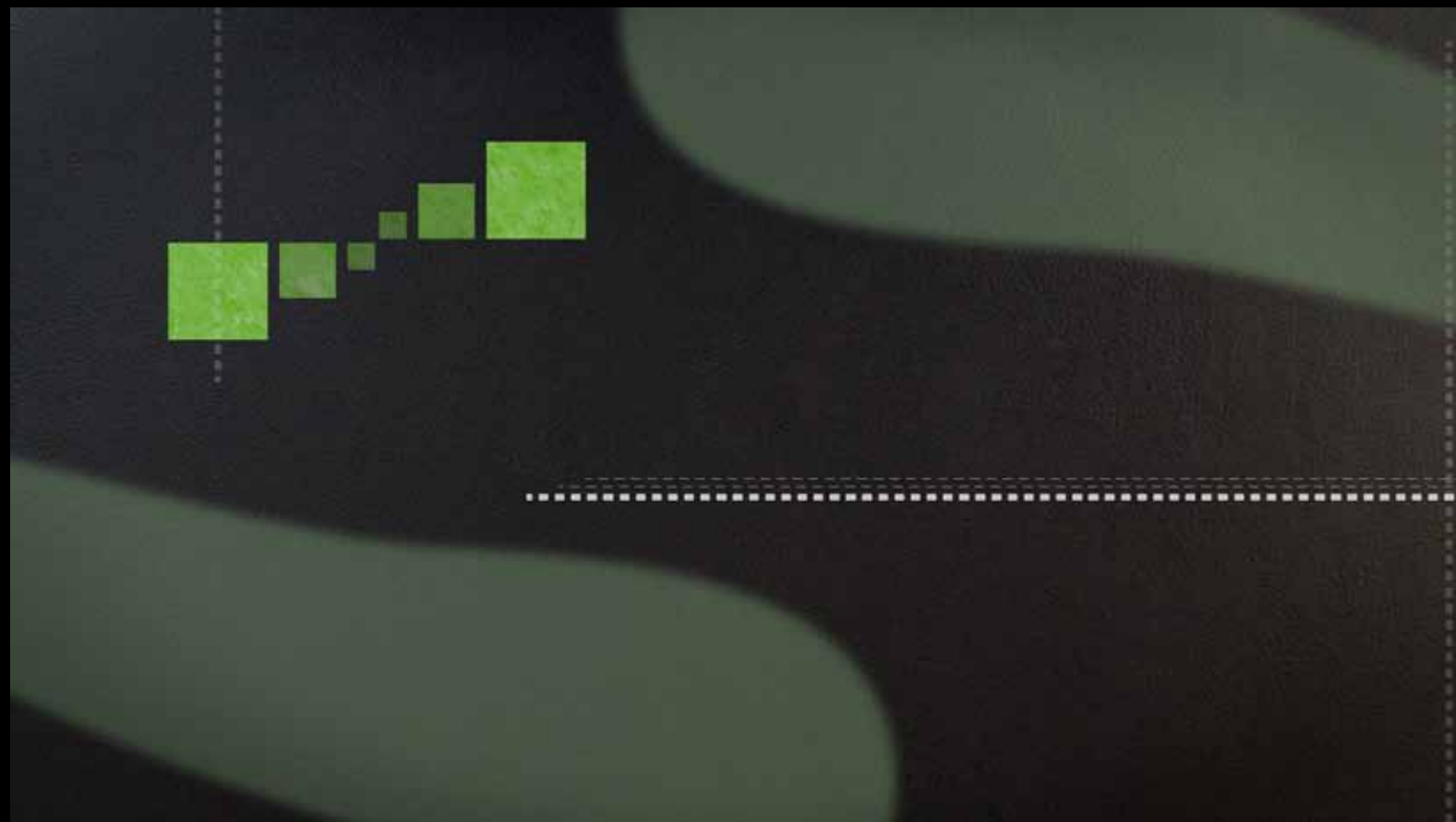
# STYLE 01

This style utilizes a blurred and desaturated image to evoke memories of a specific time period. There is a slight amount of blending with the background shapes, but there is still a distinct separation between the vector animations and the raster background. There is a nice juxtaposition between the photographic detail and the clean vector shapes overlapping it.



## STYLE 02

The key to this style is using a vivid texture to blend more with the vector while still remaining abstracted. There is no clear representational scene behind the vector animations, but it still evokes different aspects of life. Each person would see this as a different thing; maybe a chalkboard, maybe the sidewalk, either way it references childhood (the stage of MDCO this is taken from). There is a sense of grunge and dirtiness that makes the animations more textured and a drop shadow on some of the animations to help some vectors stand out while others blend in.



## STYLE 03

The third style concept continues the journey away from a representational background. A slight texture is all that is shown while the vectors blend and have their own texture. The contrast between the light vectors and dark background could be countered by a light background with light foreground vector animations.





# FINAL STYLE

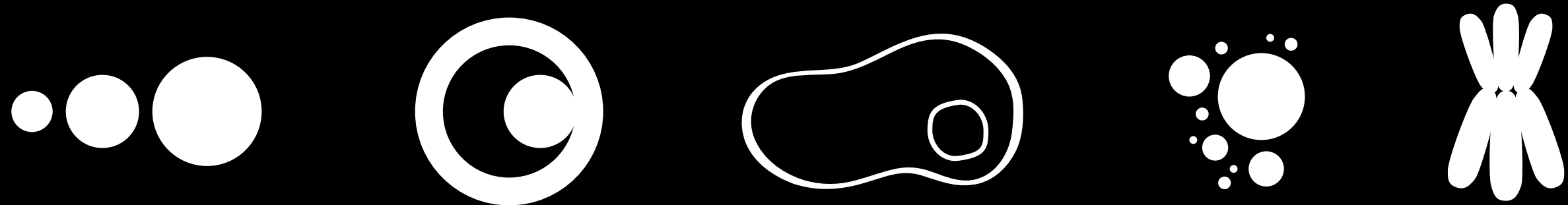
The final style is a combination of styles 02 and 03.

When looking at the styleframes together, it became clear that the photographic element was too dominating and clashed with the vector art. The decision was then made to use both semi-representational backgrounds (like style 02) in conjunction with completely abstracted textures (like style 03) to create a nice contrast and flow to MDCO.

Further studies of each life stage provided key words, phrases, emotions, and visual language that were determined to associate a specific shape set to a life stage. These were ultimately turned into the vector animations that MDCO consists of.



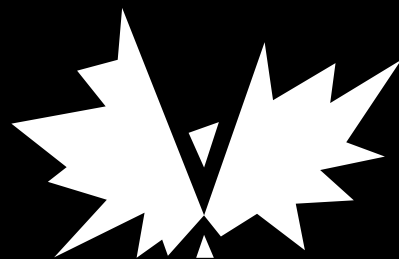
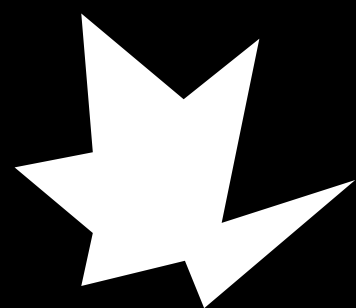
ICONS



# BABY / GROWTH

The stage of learning, growing and discovery.

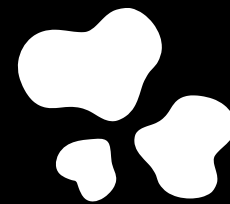
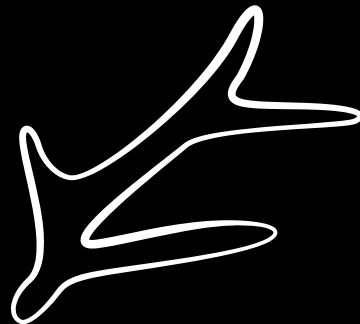
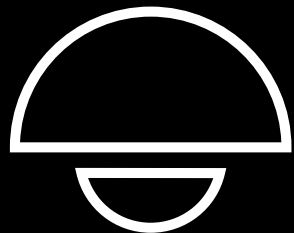
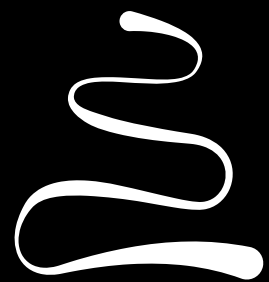
This time period conjured up thoughts of organic, circular and curvy shapes. Some of the imagery evoked thoughts of DNA, organisms, and playfulness.



# TEEN / ANGST

The stage of frustration, rebellion and challenges.

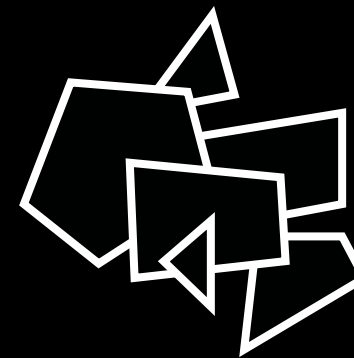
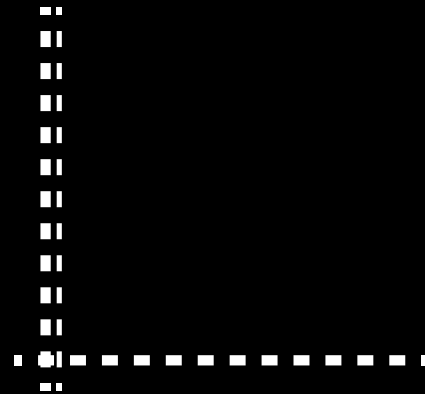
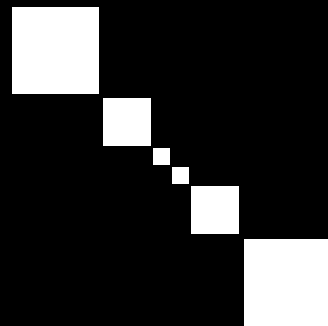
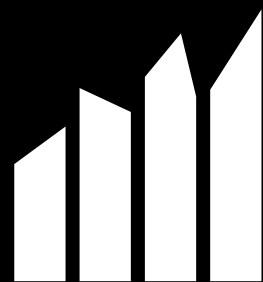
Being a teenager and going through puberty makes a person challenge everything they have even known. These angular, jutting and frantic shapes evoke those emotions that everyone experiences during that difficult time of life.



# GRADUATION

The stage of freedom, open-mindedness and new beginnings.

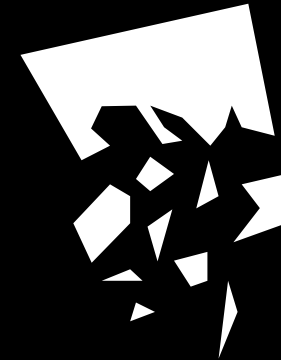
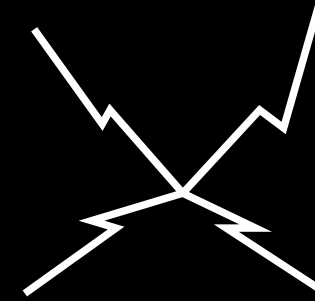
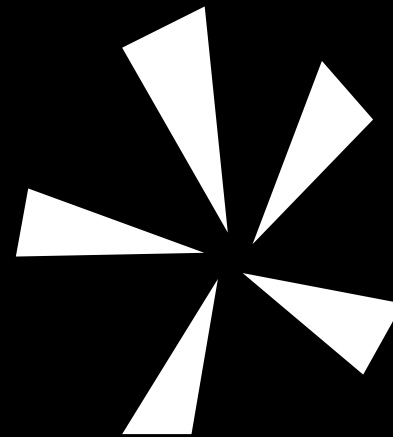
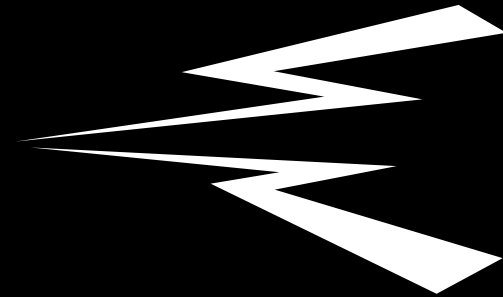
When one graduates from college, there is solid foundation of knowledge with lack of experience. Also, the new freedom to do as they please sets in. These shapes reflect an open mind between solid walls as well as a curvilinear nature that branches out to whatever the world may bring.



# REAL WORLD

The stage of business, work and complication.

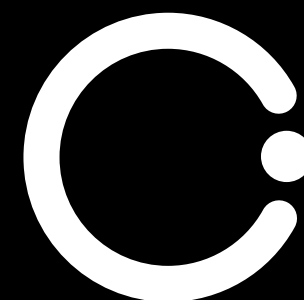
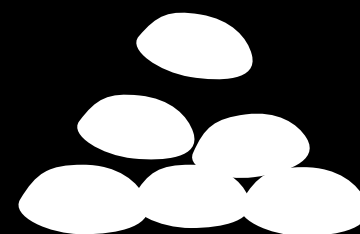
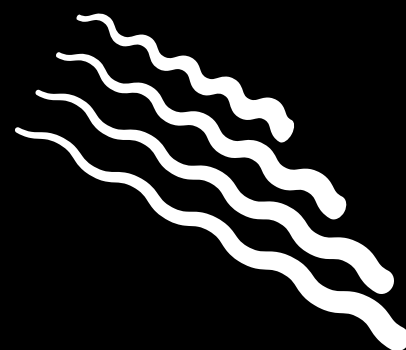
The real world presents challenges that no one could have predicted. The work and business ventures one takes begin to dominate life. These icons reference business, a clean-cut world of buildings and a feeling of growing complexity and chaos.



# MID-LIFE CRISIS

The stage of erratic decisions, feeling of lost control and depression.

When a person hits the middle of his or her life, typically there is a period of time in which there is a feeling of being old. The shapes here reflect spiraling out of control, a feeling of life falling apart, and a strikingly similar feel to being a teenager and having a lot of angst.



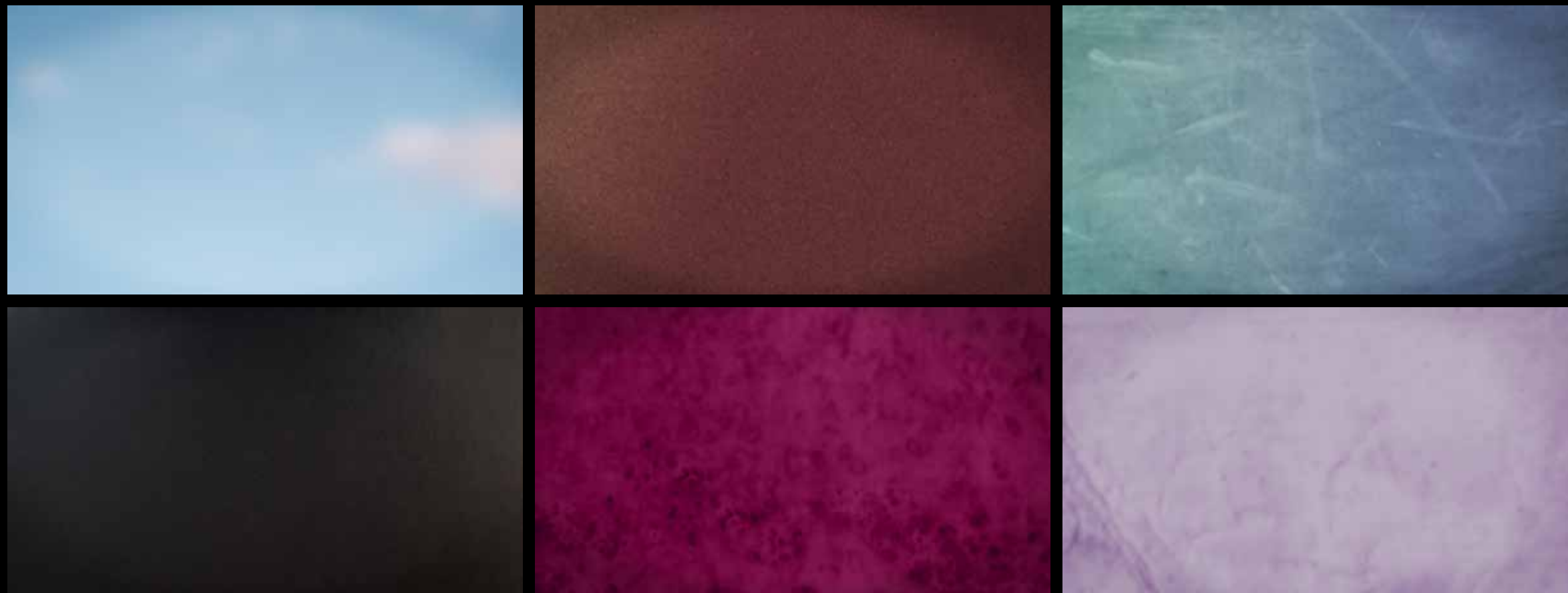
# RETIREMENT

The stage of acceptance, tranquility and resolution.

Once life plays its cards and a person retires, he or she experiences a new sense of relaxation. These icons allude to a gradual decline into the last days and the feeling of completion. Curvilinear shapes are ideal, similar to when one is a child.



# BACKGROUNDS

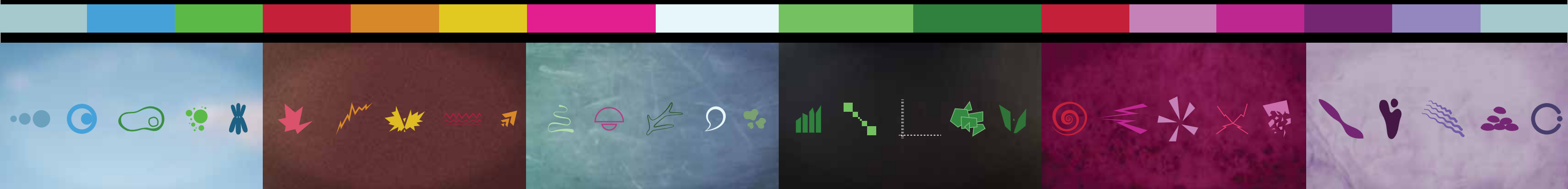


# BACKGROUND IMAGERY

The background imagery is very important as it sets the foundation for the life stages.

By using abstracted imagery and textures that relate to the various life stages MDCO explores, the audience will subconsciously understand the deeper meaning of the piece. Not many will actually think about what the backgrounds mean as the focus will be on the vector animations, but the backgrounds are vital to the understanding and full realization of the piece.

ICONS & BACKGROUNDS TOGETHER



# BACKGROUND TRANSITIONS



# INK WASH TRANSITION

This transition is a clean way to get from one background to the next, utilizing ink washes as a metaphor of the blending of life stages. The original transition was more abrupt, but later changed to better fit the concept of one's life-journey. Above are two of the transitions from the piece.

BOARDS

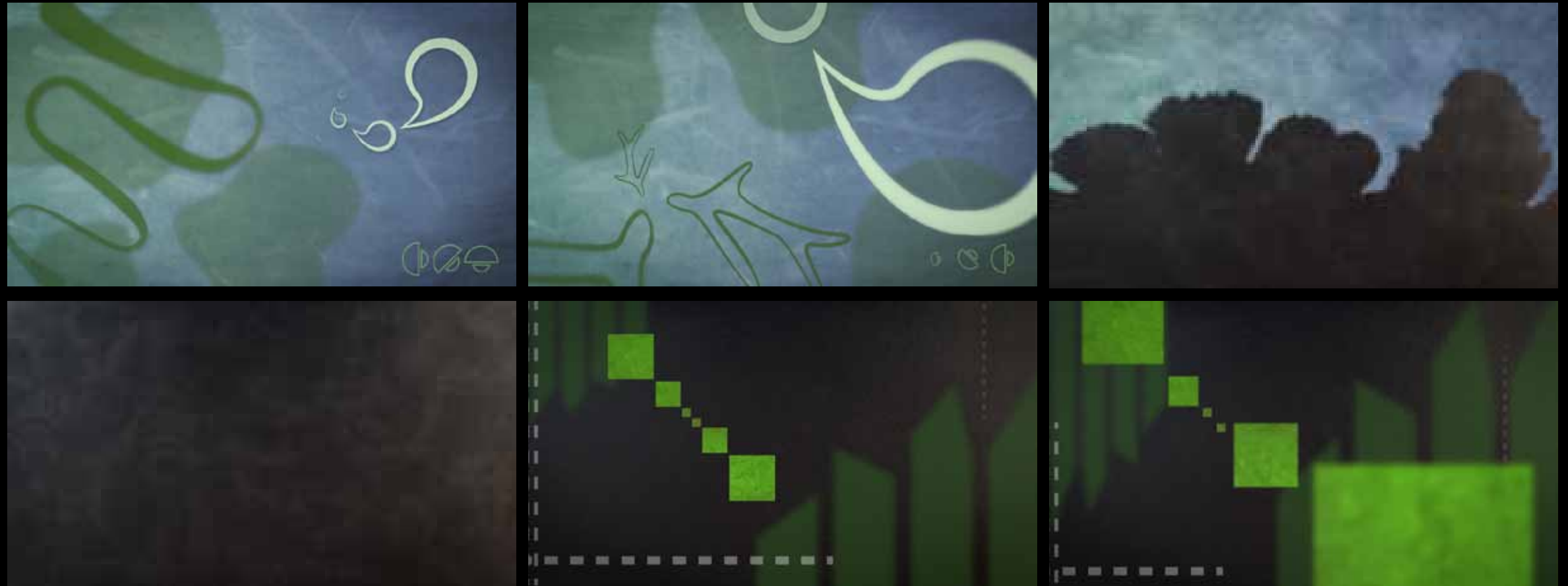
# GENERAL LOOK

It is tricky to board an improvised, intuitive piece. This is the result.

Due to the fact that this piece is essentially an improvised piece using different visual assets, one can see why traditional boarding would pose a complication. However, the same way that color organ artists in the past created compositions that were even notated in some instances, it was possible to create some visuals to communicate the general look of MDCO even if it isn't exactly what the audience experiences during its performance.







# LOOK AND TRANSITION

This example shows animations and transitional techniques between two of MDCO's stages.

A few things to note: A simulated depth of field will be utilized to create a sense of depth and dimension. Also, the transition will resolve one stage and move to the next smoothly. The various assets used will have slight variations so that the same shapes can be used to create a handful of different motions.

# TECHNICAL INFORMATION

# HARDWARE

To accomplish MDCO, a few pieces of equipment are utilized. The 88-key electric piano used is a Yamaha P-120 and acts as the instrument and MIDI triggering device. A MIDI-to-USB adapter called the M-Audio USB Uno acts as the middle-man between the piano and the computer, a MacBook Pro.

On the day of the first public performance, MDCO utilized the projector and sound system on-site. Adapter cables from the projection and headphone jack outputs on the computer were connected to the system for a mirroring control.





Resolume Avenue

Version 3.3.1 rev3055

Resolume Avenue is the fruit of labor by Edwin de Koning and Bart van der Ploeg with help from Tim Walther and Daniel Berio.

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ASIO & VST PlugIn Technology by Steinberg Media Technologies GmbH

[aufTAKT] Beat tracking by zplane.technology

LibLZF by Marc Alexander Lehmann

# SOFTWARE

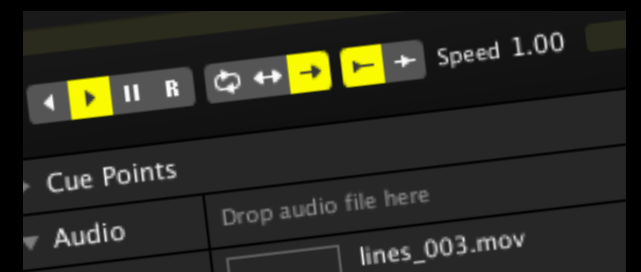
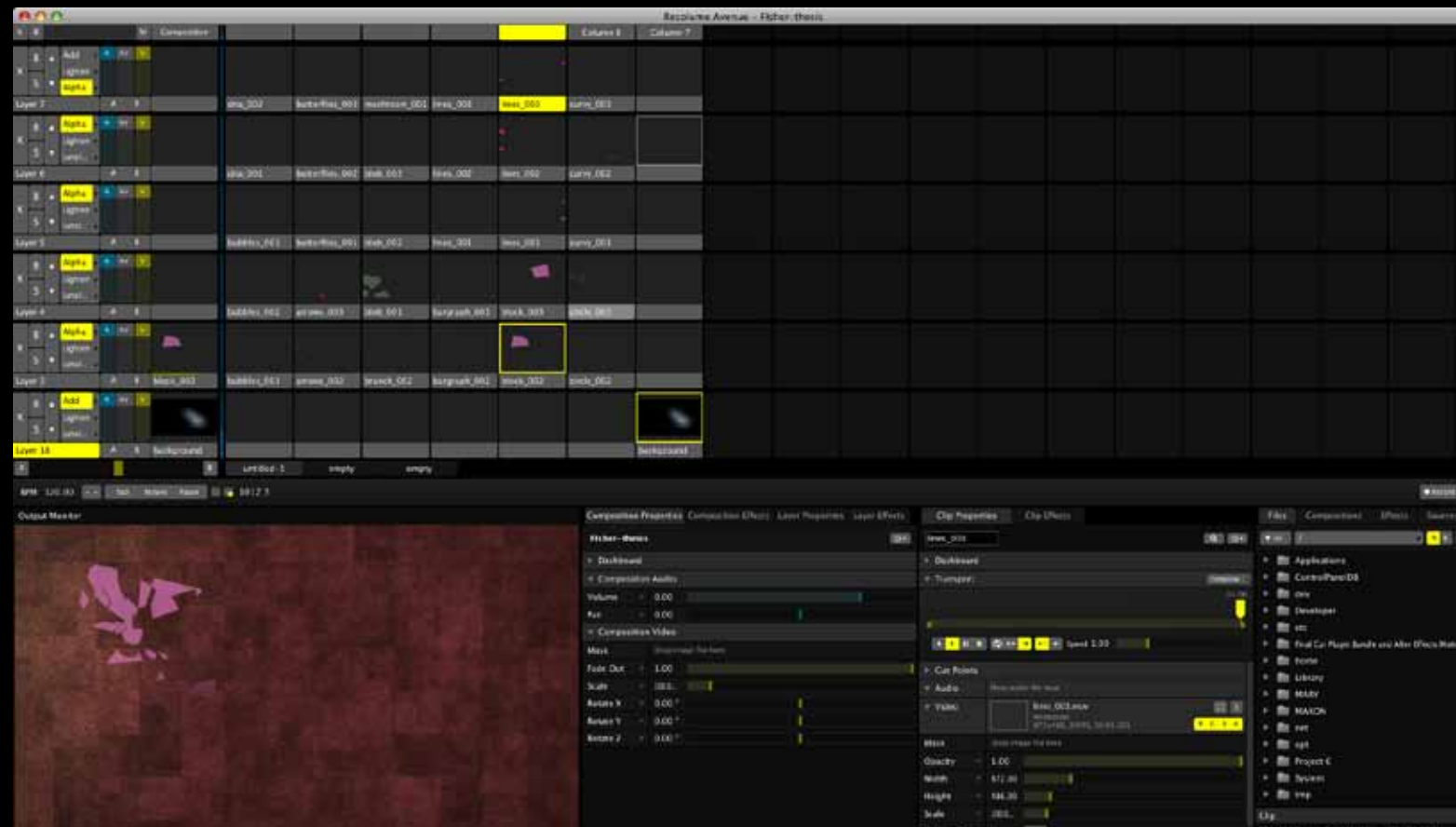
The primary software used for the performance of MDCO is called Resolume Avenue. It is the result of a collaborative effort between four programmers and tailored to the needs of video jockeys (VJs).

The screen shot above shows the basic interface. Essentially, there is a grid made up of rows and columns. Each row is a separate layer whereas each column is a part of that layer. Multiple layers can be played simultaneously, but only one column per row can play at a time. For MDCO's purposes, the background was on one layer and then each life stage took up a column. This was the most concise and memory-efficient way of setting Resolume up.



# SOFTWARE (continued)

A MIDI-mapping mode exists that allows the user to program specific triggers to the various functions of Resolume. For MDCO's purposes, each video was given a different key. Three technical issues occurred: 1) It was decided that the background would be triggered on the keyboard as a glitch in the software led to it accidentally being shut off at times. 2) The last octave of the keyboard would not read so an alternate method using a second bank of triggers was used by switching the piano from two instruments selected to one. 3) As a backup, the lowest key on the piano was reserved to shut off all currently playing animations with the exception of the background layer.

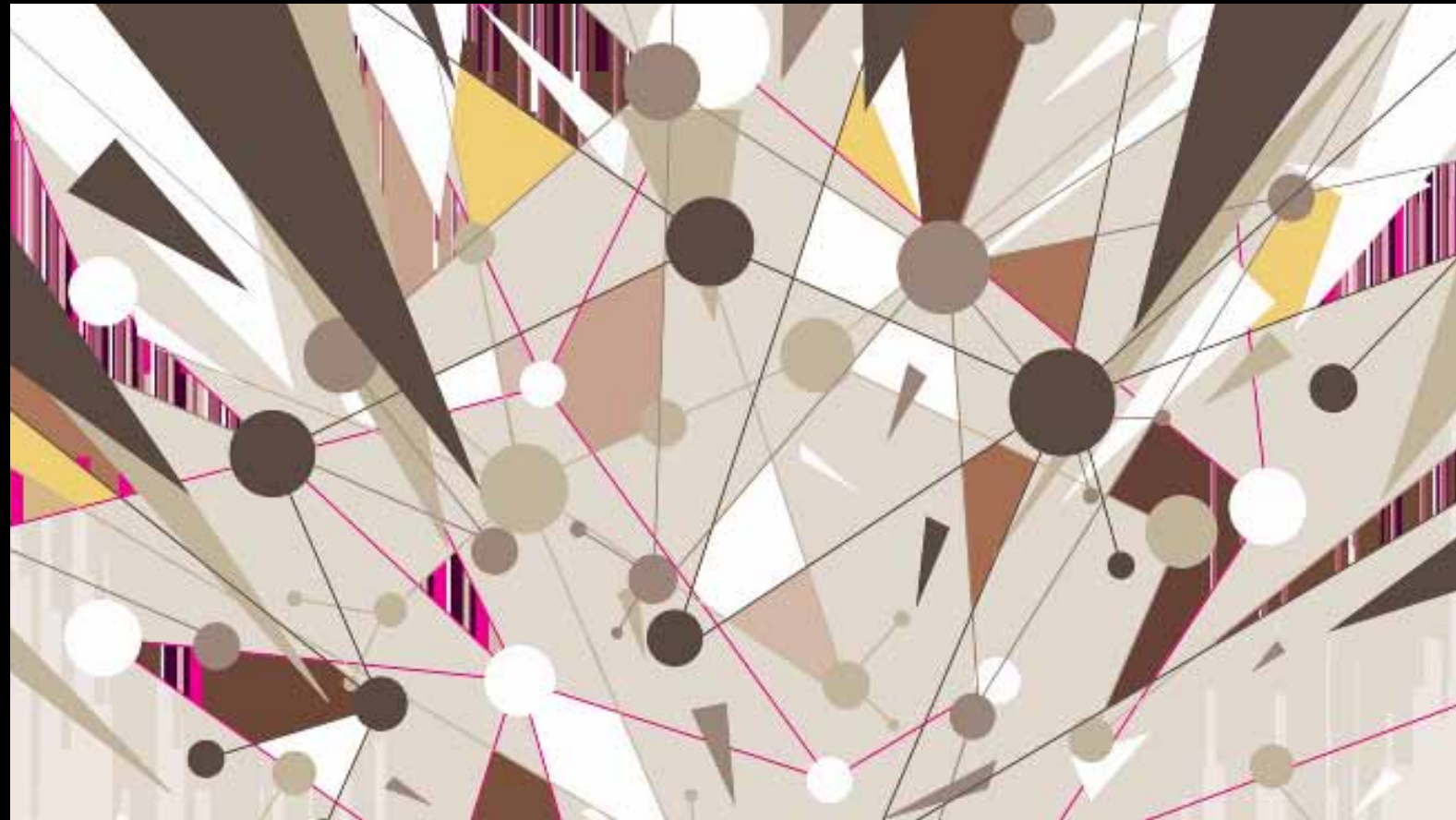


## SOFTWARE (continued)

Once the software was programmed, pressing any key on the keyboard selected one of the 80+ videos to play over the background. This is shown (as seen above) with a yellow outline on that video's square. As every layer was set to read the alpha channel of the animation and the animations all were rendered out with at most 90% opacity, all of the layers were opaque. This created a great visual style as everything overlapped one another.

FINAL RESULT

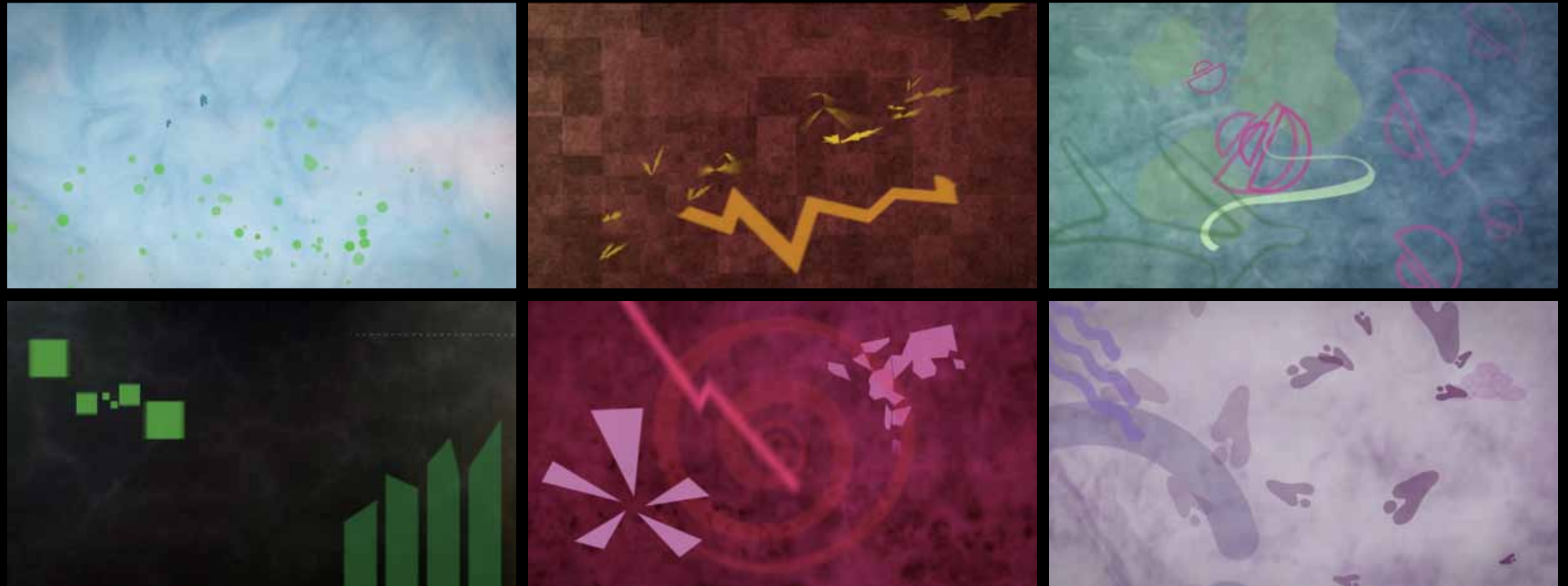




# SENIOR SHOW

Our Senior Project II class put on a show called 'Point A'. The name represented our graduation representing our starting place in the world rather than an ending point of college. Attended by about 50 people, we screen all of the pieces as well as had musical performances.





# FINAL PIECE

The final result of this project went exactly according to plan. I ended up borrowing a friend's projector to perform MDCO on the wall of the space. The piece, as stated previously, was triggered on the spot, resulting in a fantastic journey. After the show, I allowed the audience to come and 'play' with MDCO; watching people get joy out of my work and being able to participate in the product.

THANK YOU.

