Design of a software tool for animators

Experiments with moderated surfaces

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APPROVAL SHEET

The Visual Communication Project-2 entitled,
“Design of a software tool for animators” by
Nair Vineeth Anand, 05625803 is approved as partial fulfillment of the requirements of the Masters of Design Degree in Visual Communication

Project Guide

Chairperson

External examiner

Internal examiner

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I would like to express my appreciation & thanks to my guide, Prof. Ravi Poovaiah for guiding me throughout the project. I acknowledge his kind support and encouragement that saw me through my undertaking. Hearty thanks to Prof.Shilpa Ranade, Prof.Anirudha Joshi,Prof.Raja Mohanty & Prof.Kirti Trivedi for their valuable insights on my project in the initial stages.

I extend my sincere thanks to all my well-wishers & friends at IDC whose suggestions & interest propelled my drive to work harder.

Nair Vineeth Anand

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ABSTRACT

Experimental animation is like a bottomless chasm. The possibilities are endless. The key being, anything & everything can be animated. Under the guidance of Prof. Ravi Poovaiah, the basic idea of providing a platform for exploring possibilities, took shape. Variety of styles & diverse use of the medium have always been the key focus in experimental animation. Reaping the power of technology, and combining it with an in-depth thought process laid the base. Artificial intelligence to help the software think & comprehend was another focus point. The challenge was being able to provide a variety of styles and to embed a sense of creative freedom for aspirants wanting to get a glimpse into the world of experimental animation.

Planes or surfaces to play with, was looked at so as to generate interest amongst the users. To be able to control plane parameters and thereby moderate the behaviors of the plane added to the vision. This software concept provides for smart functioning. The motive being to showcase the possibilities in plane moderated experiments and provide for it. The interface aids in creating various animations using water, sand, light grid or paper as the surface.

This is an effort to express my desire to contribute in helping animators and promoting experiments.

A prelude

INTRODUCTION

Animations have always fascinated me. The way the drawings come to life, and the way they move on the screen, is quite an enchanting thought. It was during my short stint with an animation firm, “Kathaa animations pvt. Ltd.”, Mumbai, when I got up close with the process. The tedium & work load associated with it, prompted me to think of solutions. The *“efforts Vs. returns”* imbalance was another issue that caught my attention.

There were so many skilled animators there who wanted to explore more, but couldn’t because of the time constraint and low budgets. At times they complained about the lack of experimental mentality amongst commercial animators. All these that I observed, had left an impression on me. It was here at IDC, that I got the opportunity of making an effort to come out with a solution to address the aforesaid.

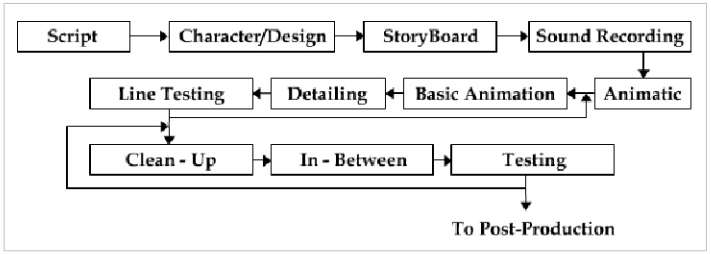
“Why not?”, the basic question that encourages and inspires experimentation, became the foundation for my thought process. And I began my exploratory journey, in search of possibilities!

A basic methodology chart showing the various stages followed during the process

INITIAL THOUGHTS

Traditional animation, sometimes also called cel animation or hand-drawn animation, is the oldest and historically the most popular form of animation. In a traditionally-animated cartoon, each frame is drawn By hand.

THE TRADITIONAL ANIMATION PROCESS



Stages in Traditional Animation

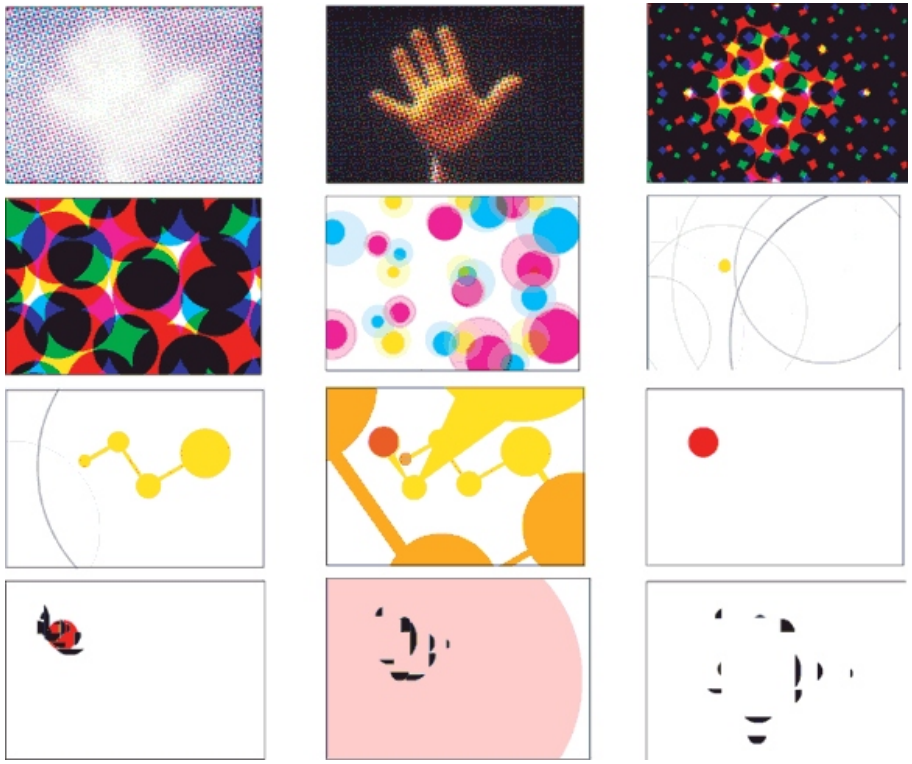
The above flowchart depicts the basic processes involved in any traditional animation process. The script which is a detailed narrative is sent on to the designers, who design characters, the look and feel of the animation. Once the design is complete, the storyboard is constructed. Constructing a storyboard also involves a lot of micro-tasks, like thumbnails, rough storyboard, etc. The sound recording could either happen simultaneously or post story-boarding After the sound has been recorded, the storyboard is combined with the same to produce what is called as an animatic. An animatic typically consists of pictures of the story-board synchronized with the soundtrack.

INITIAL THOUGHTS

After the animatic has been done and approved by the director, the animation begins. The process starts off with the animator creating the basic animations at first and then details are induced into the drawings. Post detailing, the drawings are put in sequence and played to test. This is called as Line testing. During line testing, timing glitches and animation flaws are pointed out. These are then corrected by the animator. This is an iterative process. After the line test has been successful, the drawings are cleaned up by the Clean-Up artists. This is the stage wherein the lines and strokes are perfected. In-betweening follows next. During this, the In-between artists insert key-frames wherever they feel there are motion jerks. After In-betweening has been done and approved by the animator, the final testing is done. If at all there are any mistakes that arise out of this test, then the change has to be done at the clean-up and In-between level.

On completion of the above mentioned stages, the drawings are sent for the Post-production

INITIAL THOUGHTS



Experimental animation is a form of “Free” cinema. This form of animation germinates in the heart of the medium itself. There have been abstract films which existed as back as early 1920s - 1930s. New styles, lengths and techniques are the attributes of such form of animation. This is one form where the artists enjoy working in the artists-technicians overlap. There have been a plenty of efforts to computerise the process too. There were times when the artists used to collaborate with software engineers and come out with software packages to suit their style and technique. Its like a vast sea of new ideas, subjects and techniques. Variety is the key word in this genre of animation. Animating almost anything and everything could be a line that very well defines its capabilities. Hence posing the difficulty to generalise the process as such.

INITIAL THOUGHTS

Some of the experimental animators and their techniques that I find of particular interest are as follows..

HORACE TOWNER PIERCE, “SPIRAL SYMPHONY”
A film depicting a series of paintings.

LAURENT CODERRE, “RUSTING WORLD”
A film made entirely using nails.

AL JARNOW, “SOLID GEOMETRY”
A film made entirely using nails.

CAROLINE LEAF, *Sand animated films*

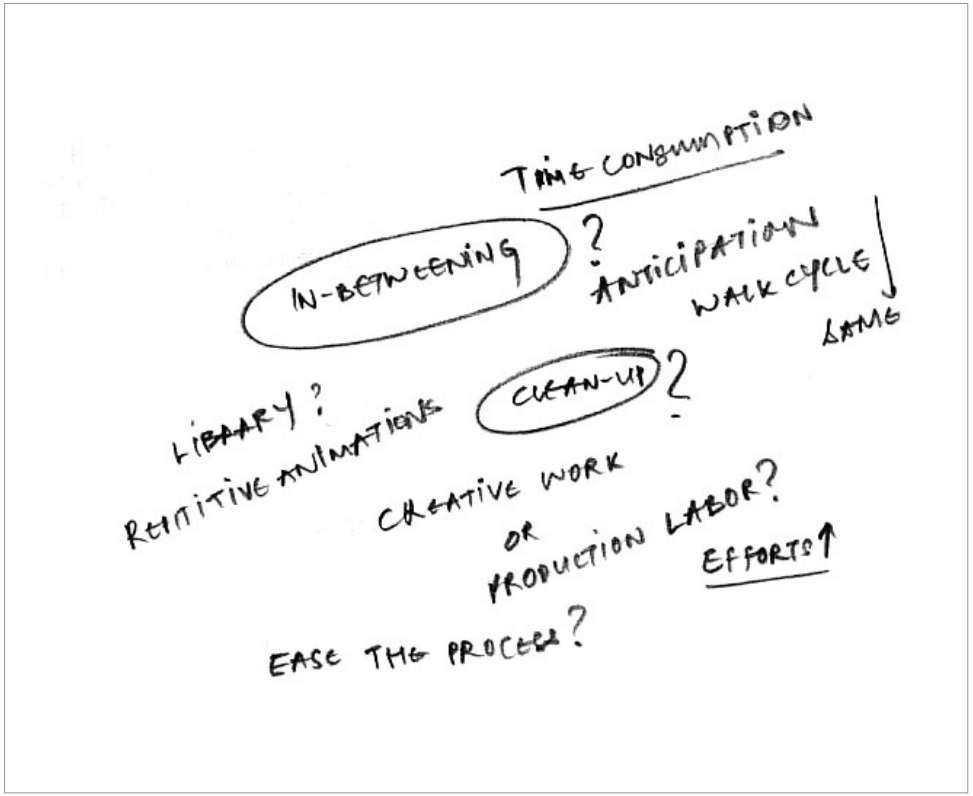
PAUL GABICKI, *Complex diagrammatic films*

DAVID EHLRICH, *Films using hard-edged geometric forms, holography*

ROSE BOND, *Painting directly on a 35mm film*

PETER FOLDES, “HUNGER”
Full figurative animation was used. The first time a computer was employed to generate the In-betweens.

INITIAL THOUGHTS



A part of the initial brainstorming notes

Studying the animation process and getting an insight into the problems that an animator faces were my basic focus points to conduct the user study. I approached this particular small-time animation firm. After observing the animator at work, I got some viewpoints which are elaborated below.

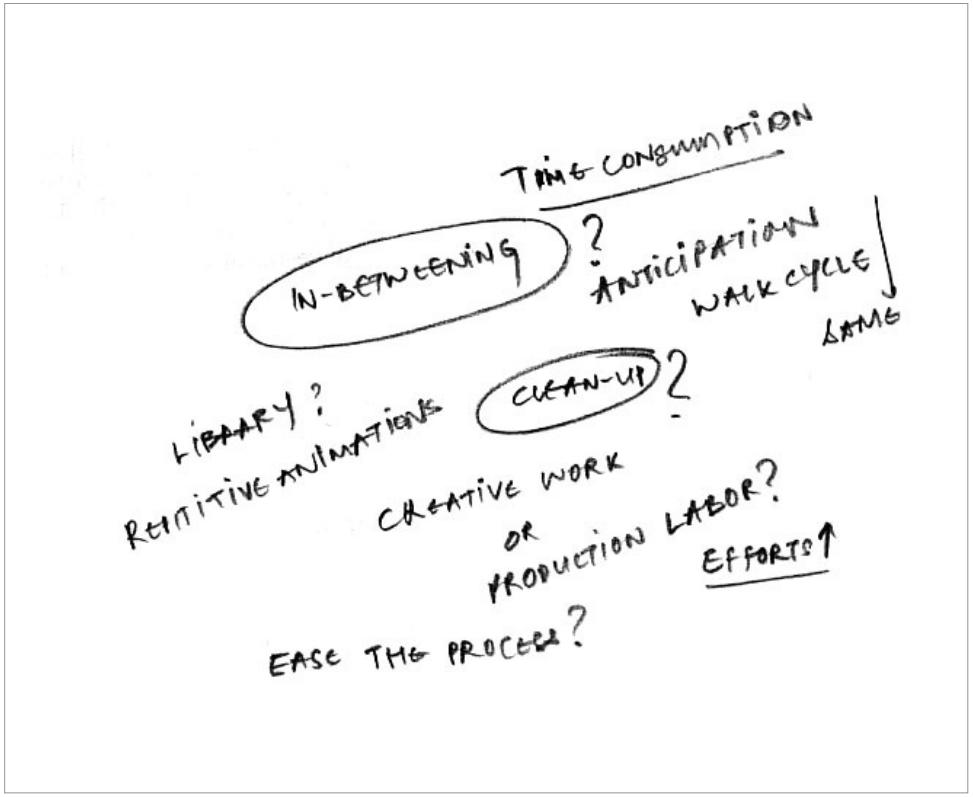
IN-BETWEENING HASSLES

By intelligent in-betweening, he desired quality tweenings. Unlike the shape and motion tween that is possible with FLASH, he wished to have some sort of a system where-in he could just sketch the key-frames and the computer would do the in-between key-frames for him. Some sort of auto key-framing.

CLEAN-UP : UNINTERESTING & TIME CONSUMING

Clean-up according to him is a time consuming process. Moreover this process is skill- based and doesn't require the creative attention of the animator.

INITIAL THOUGHTS



A part of the initial brainstorming notes

ANIMATORS: MORE CREATIVE WORK

Cutting down the assignment of animators in skill-based processes would give animators more time to work on creative aspects of the animation.

LIBRARY OF REPETITIVE ANIMATIONS

According to this animator, he insisted on having some sort of a library or an archive of common and repetitive animations like the walk cycle, laughter, giggle and anticipation.

GOALS & USER GROUP

After having looked at the traditional animation process, and considering the users' view points, the following came out as the areas of emphasis.

INTELLIGENT IN-BETWEENING

Even though utmost challenging & difficult, intelligent in-betweening still remains a task Herculean. There are a lot of technical issues and constraints that I might need to address and resolve during this endeavour. Hence this challenging module is high on priority.

REPETITIVE ANIMATION LIBRARY

This is yet another significant module. Considering the wide range of cut down that this particular facility could induce is tremendous. To generalise the motions and to archive them would be challenging.

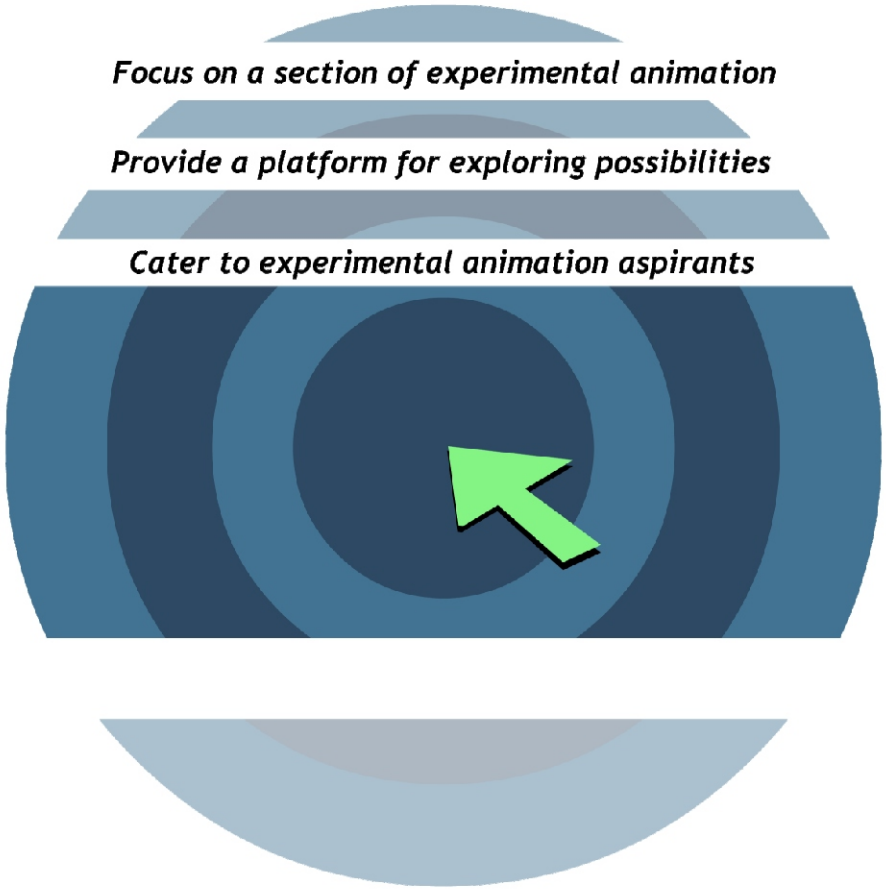
EXPERIMENTAL ANIMATION EXTENSION

This particular module would provide the animators with options to come up with their own style of animation. With this module, if possible I would also like to incorporate key techniques of different experimental animators.

GOALS & USER GROUP

MISCELLANEOUS FUNCTIONS

Some miscellaneous but helpful functions would entail an auto-fleshing module. This particular module would aid the animator in detailing out the drawings. The other would be to generate perspective character models. Form the input side and front profiles of the character, to generate all the intermediate poses would be challenging.



Revised

GOALS & USER GROUP

The initially stated goals addressed the issues of lowering the production cost, as well as speeding up the process of traditional animation. But I realized that the focus on experimental animation was reduced. *"Did I want to look at the commercial aspect or did I want to lay emphasis on providing a platform for creative freedom?"*. The question kept me thinking. And I remodeled my set of goals and stated them as follows.

GENERATE INTEREST IN EXPERIMENTAL ANIMATION

Experimental animation is still a domain where many animators are insecure about setting foot on. The charm of experimental animation lies in the fact that there is abundance of variety. Moreover, experimental animation also encourages a lot of creative liberties & explorations. So I decided to focus on thinking up an interesting product to address the same.

PROVIDE WAYS TO CREATE & ANIMATE

Creation & animation are key to experimental animation. I wished to provide means to create as well as animate in a novel way.

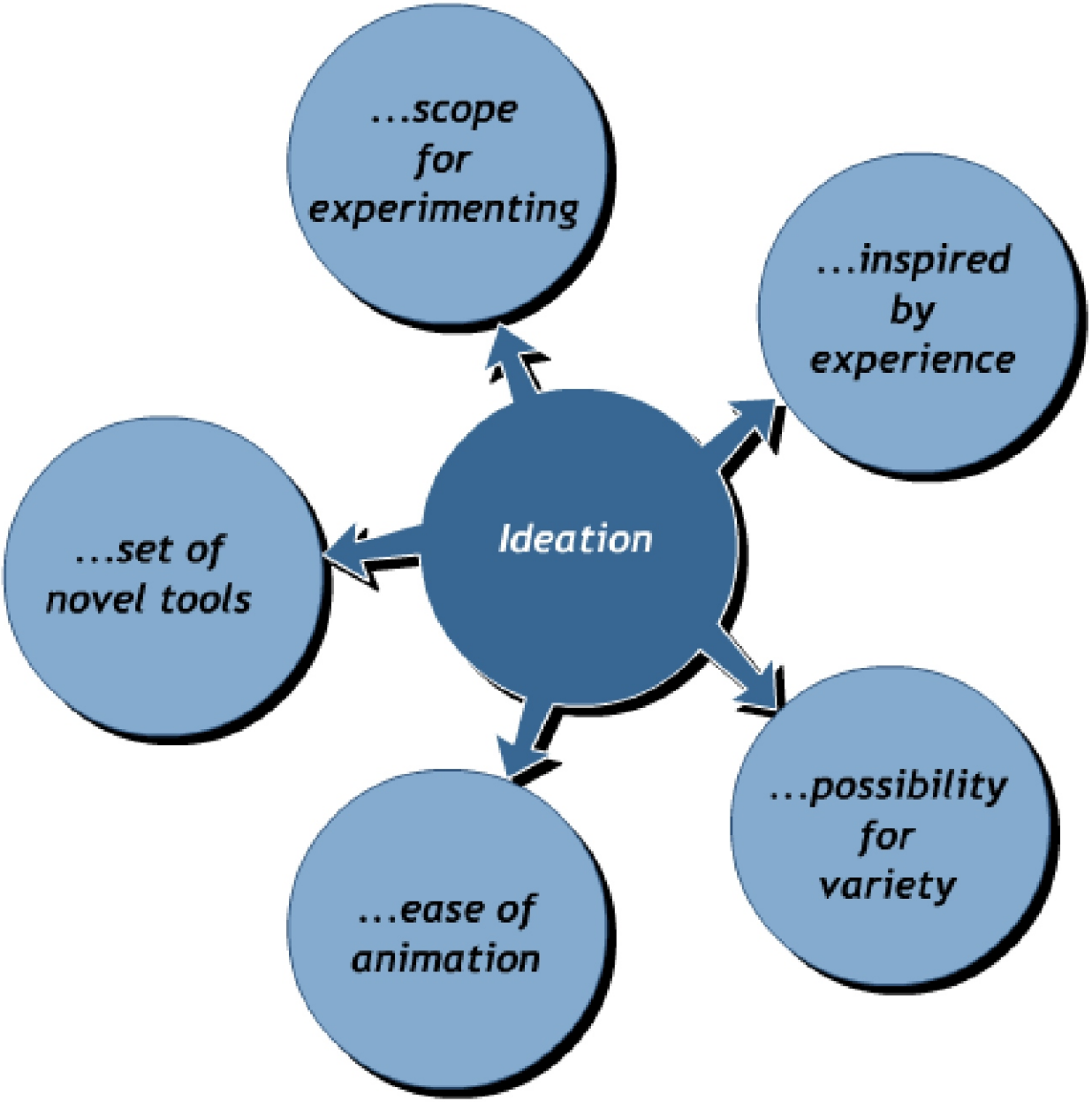
A GLIMPSE INTO THE POSSIBILITIES

With experimental animation, possibilities are boundless. I wanted to direct my efforts into aiding in creating possible ways of animation with different media.

GOALS & USER GROUP

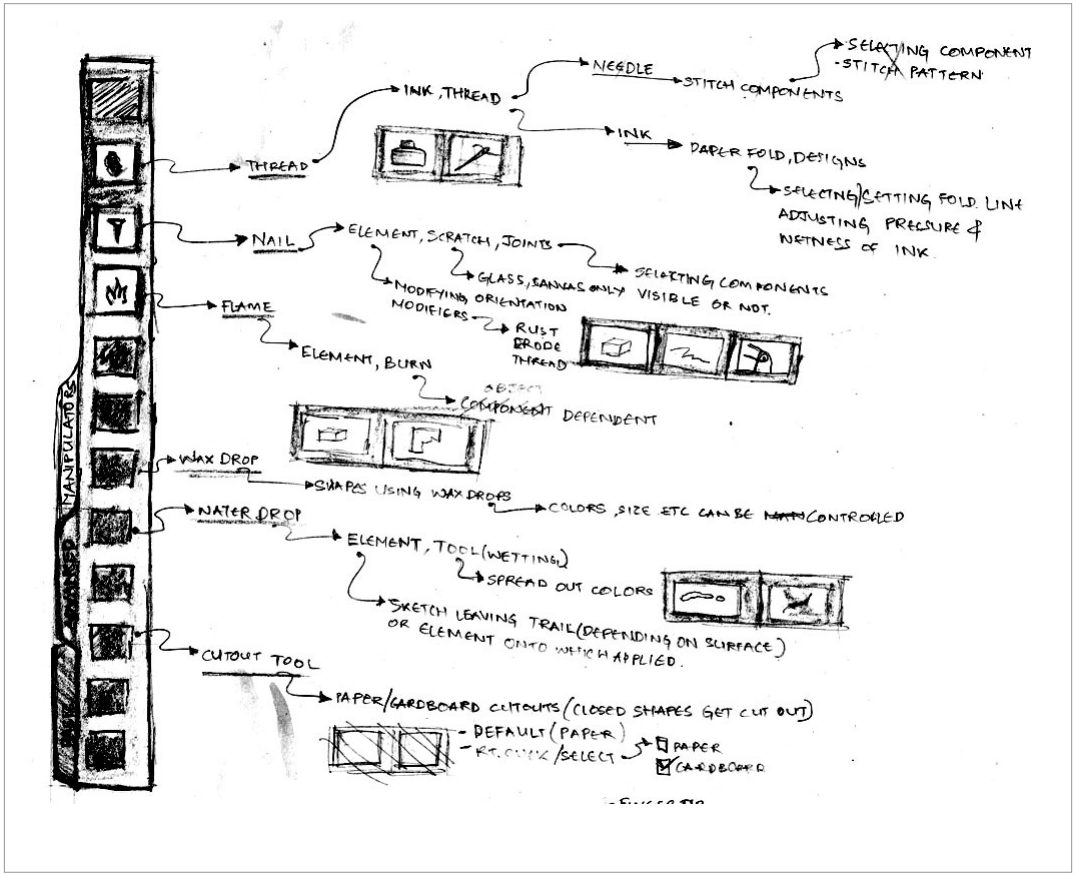
USER GROUP

The user group I wanted to cater to is quite wide-ranged. Spanning from experimental animation aspirants,to novice animators, who wish to venture into exploring possibilities.



A chart depicting the various parameters kept in concern during the ideation process.

IDEATION



A part of the idea scribbles

During my initial ideation stage, I came across numerous ways to cater to experimental animation. Since I had left off looking at traditional animation process as the area to address, I had to look for possibilities in experimental animation. Most of all my ideas centered around the following features

POSSIBILITIES INSPIRED BY EXPERIENCE

As a kid, I used to indulge in a lot of experiments to create interesting imageries. I thought of possibilities to map those styles as an interesting animation prospect. For instance; creating a shape using ink & thread, or making impressions of extrusions on paper using a lead.

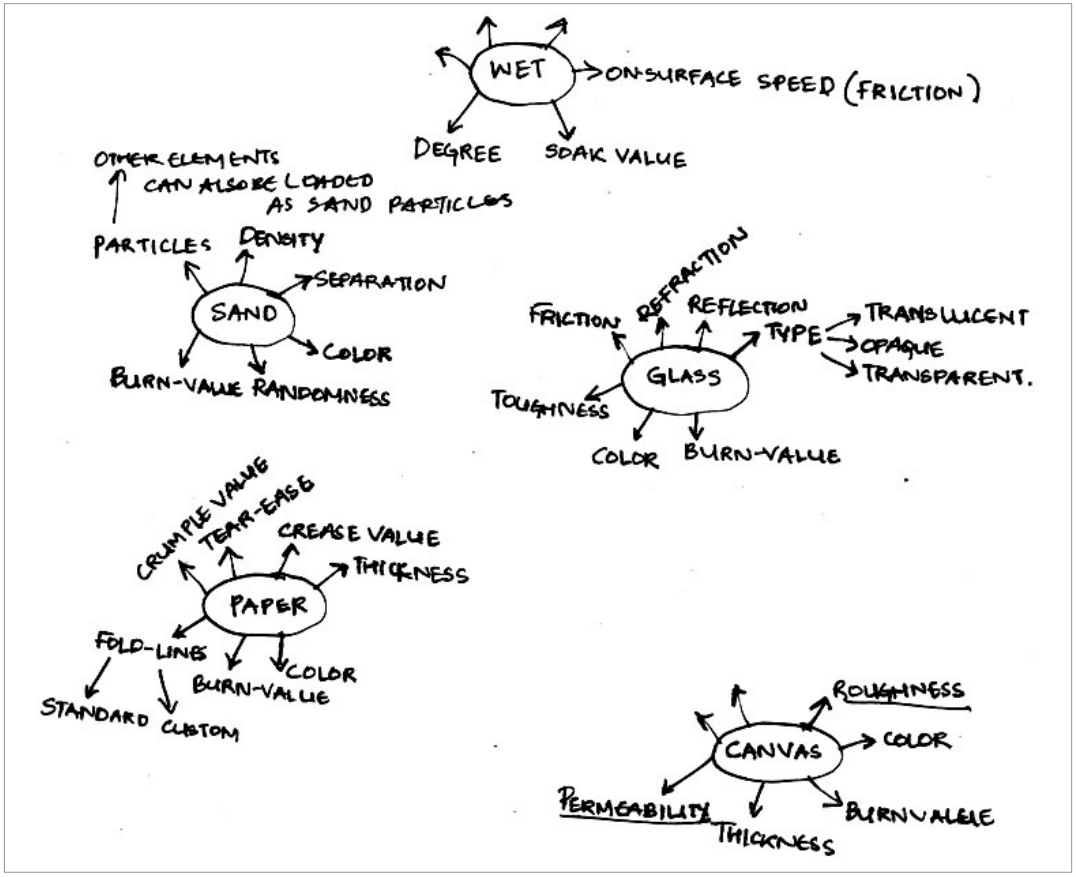
MAXIMUM SCOPE FOR EXPERIMENTING

To provide maximum flexibility with a given set of tools, was a key aspect I thought of addressing. As a result I came out with the idea of using a preset number of tools in combination, to deliver variety.

SET OF UNUSUAL TOOLS

Apart from the usual basic tools, I started thinking of tools from our environment. This was again sticking to the fact that in experimental animation, you can animate almost anything & everything. For instance, to have a thread tool, which behaves like a thread.

IDEATION



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EASIER METHOD OF ANIMATION

To have ease of animation was a focus point throughout my ideation process. So I started thinking of ways to have the simplest structure for animation. Combining various features from different packages, I made an effort to arrive at a solution.

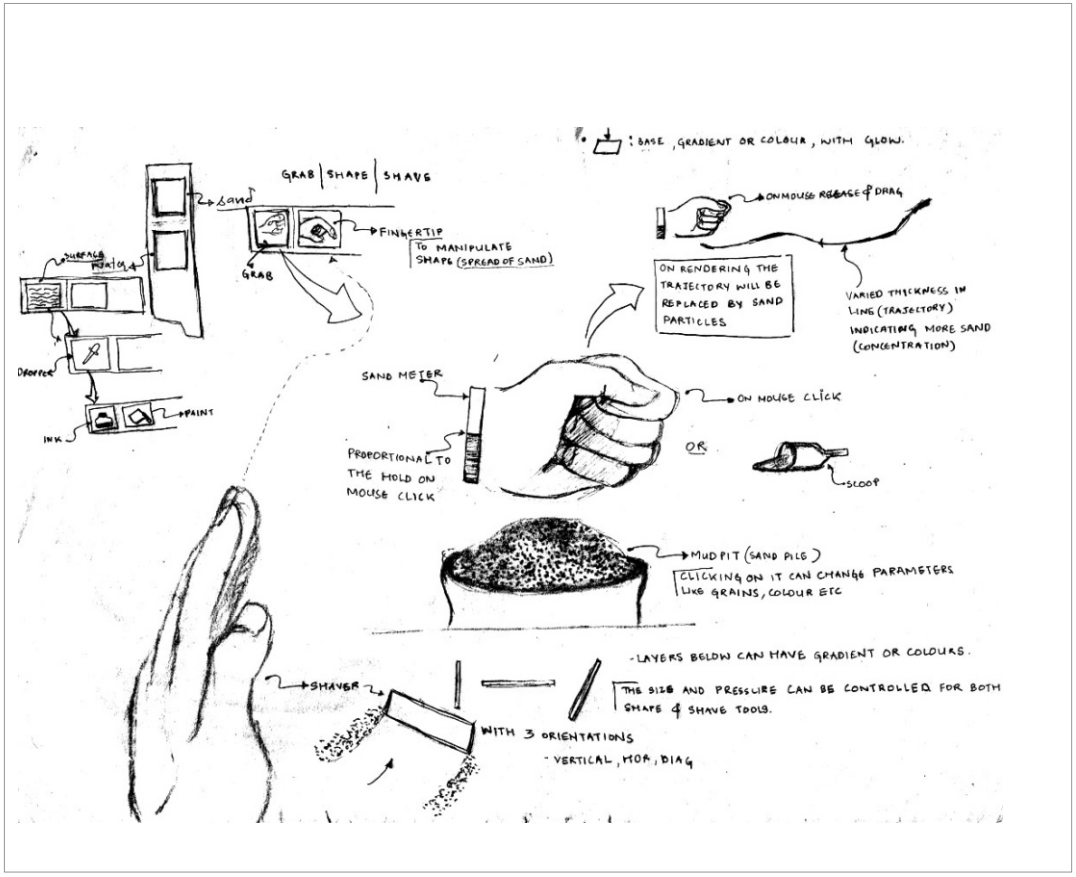
MULTIPLE ROLES FOR TOOLS & ELEMENTS

Variety could be induced in numerous ways. The most challenging task I realized was to have tools that could be used as elements and elements that could be used as tools. I thought about a lot of possibilities on along these lines too. But soon I learnt that it was leading into a lot of complications and I was now in a complex domain.

EMULATE A STYLE OF EXPERIMENTAL ANIMATION

The easiest and the most direct thought that I came across was to emulate an existing experimental animator's style. With so many animators who had ventured into experimental animation, I thought of coming out with a virtual simulation of their process.

IDEATION



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MODIFIERS

The idea was to list out certain modifiers like for instance, flame, water-drop, etc. to work on the initially thought out tools and elements. To have a set of modifiers which could be applied to the tools as well as the shapes created by these tools seemed fascinating.

TOOL-TIP VARIANTS

Another area I started looking at was “tool-tip”. I could provide for further more variety in styles if I could somehow work-out a provision for changing the tool-tip of the tools. I came out with ideas wherein I could use the elements (shapes) as tool-tips. This could have been a cyclic process altogether.

But, soon, I realized that I was straying away from my stated goals. I was thinking on lines which would lead me to a lot of complicated solutions, even though pretty much serving the purpose I aimed for. I learnt that I was focusing more on inducing variety in styles rather than looking at simple innovation to solve my stated problems. I should rather have been thinking about ways to cultivate interest by providing some means to play with and control

This lead to an evolution in my thought process, and I started thinking away from the regular.

.

IDEATION

Rather than giving the users a set of primitive tools to create everything from scratch, why not give a base for them to build on?

BUILDING BLOCKS

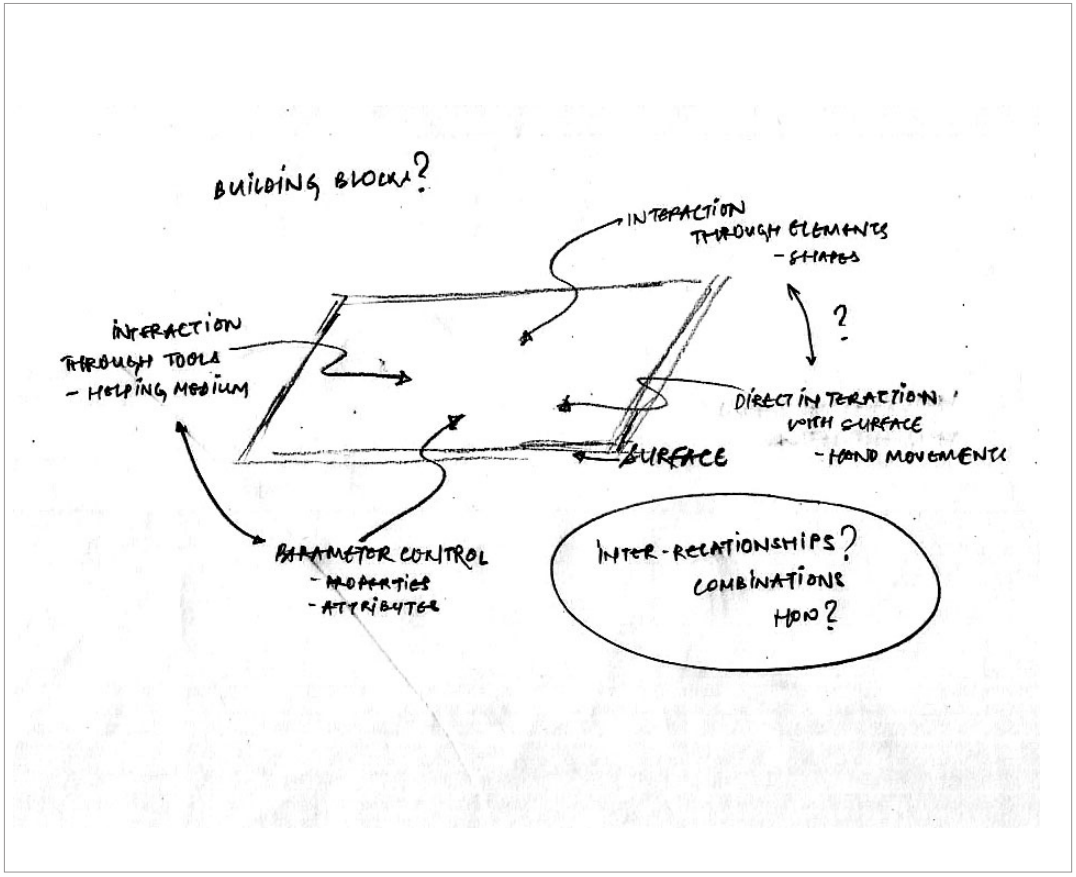
To put together what exists already, and produce amazing results, emerged fascinating. This idea furthered my thought process.

SURFACES

To have a plane simulating certain surfaces and to let the users control the way these behave. Figuring out which surfaces & why? Was another challenge following this thought.

DISTINCT COMBINATIONS

In order to have some sort of a variety, possibility for a lot of combinations was the key. This brought me down to the basic components of the solution.



A part of the idea scribbles

IDEATION

SHAPES, MODIFIERS & PLANES

A combination of shapes, modifiers and surfaces, with a lot of parametric control and cyclic application formed an idea.

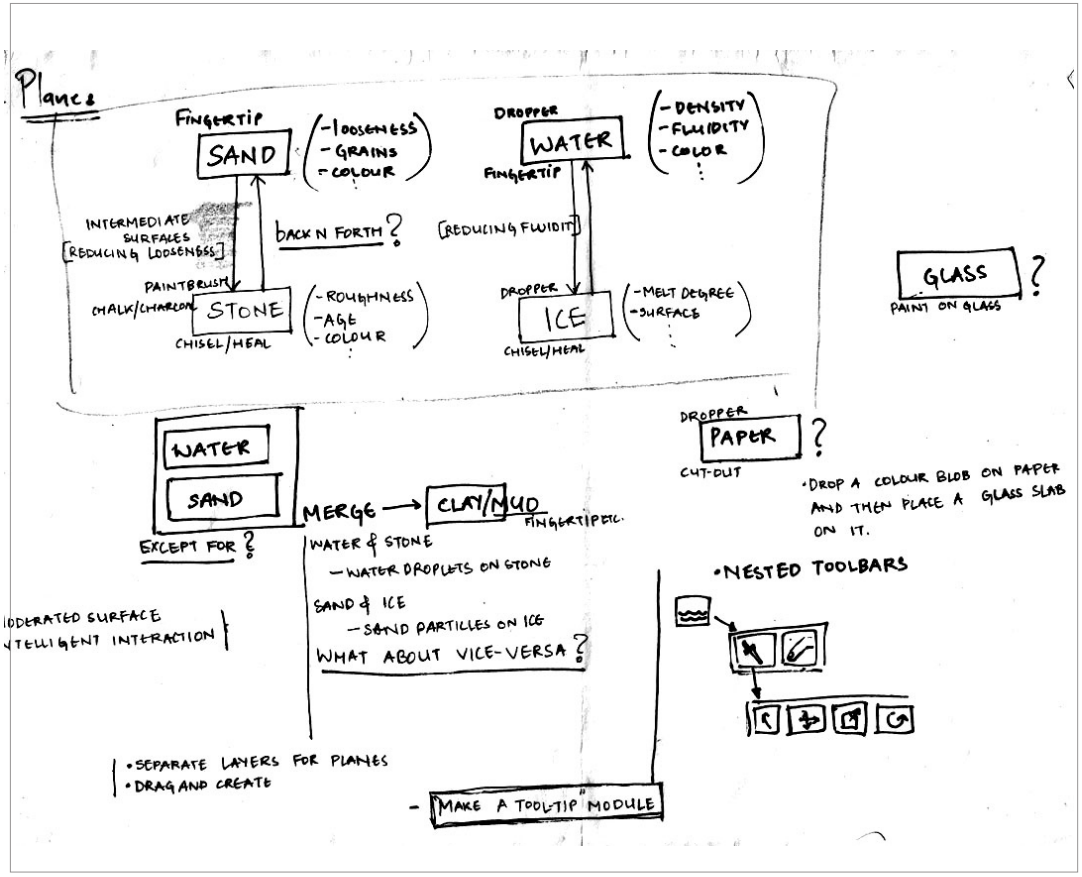
INHERIT PROPERTIES

Another idea that was building in my mind was to create a possibility wherein there could be inheritance of object properties. A method by which we could selectively command components to inherit properties from each other.

EASE & FAMILIARITY

The motive to keep the interaction with the software easy and familiar was a point I thought I should address. With familiarity, I meant to use icons easily recognizable, and to use terms which the users can relate to easily.

IDEATION



A part of the idea scribbles

SIMPLE SOLUTION, COMPLEX RESULTS

The key was to think up a solution with as much simplicity as possible, but producing complex results. I had to hold my ideas against going too complicated.

CHANGING SURFACES

On manipulating certain parameters, I wanted to derive a distinct surface altogether. For instance, on reducing the looseness of the sand surface, I could derive a stone surface.

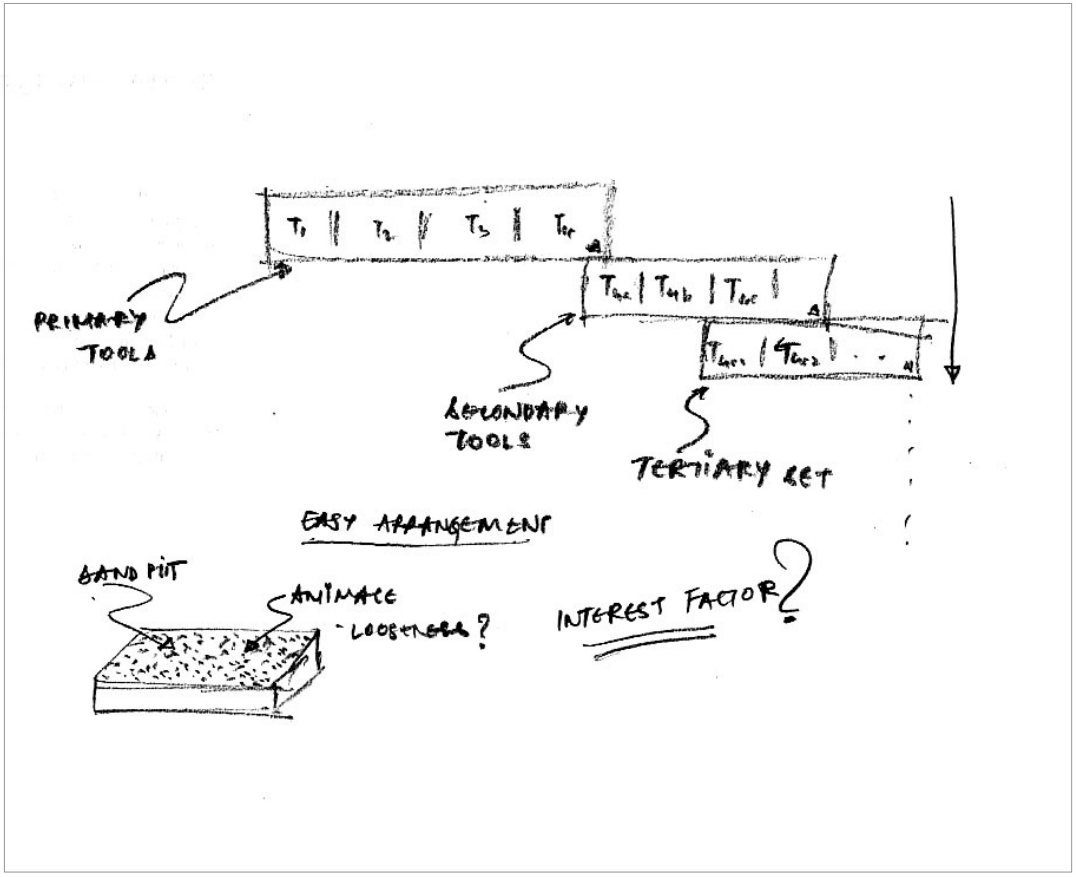
DYNAMIC TOOL-SETS

Since the surface could change, I thought of having a dynamic set of tools, which would be surface specific. For instance, the stone surface could have tools like a chisel, or chalk, which could be used to create amazing elements (shapes) and animated.

COMPOSITE SURFACES

To have different surfaces, and then to make them merge into each other, would render a different composite surface altogether. For instance, the sand surface could merge into the water surface and form clay or mud. These composite surfaces would have their own set of tools, further.

IDEATION



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NESTED TOOL-BARS

Since the ideas had a plethora of tools, I decided to think of an easy arrangement. Nesting came out to be the obvious and most efficient arrangement of tools. Since the idea of nesting went in sync with my ideas, I decided to try on those lines.

Now that I had zeroed in on some rough thoughts and ideas, I started visualizing possibilities. *“What would I do with a sand filled pit?” “How would I be able to animate on any surface?” “What would be interesting?”*. Flooded with such questions, I directed my efforts to answer them creatively.

CONCEPT

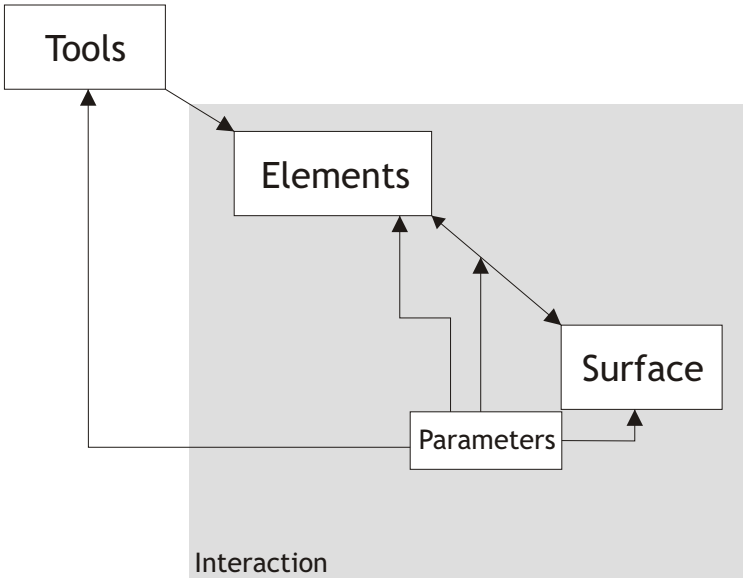


Figure depicting the basic skeleton

Taking further the idea of having moderated surfaces, the basic skeleton of the concept can be summarized as depicted. Three basic components, tools, elements & surface and their interaction modes comprise the solution. There will basically be four distinct modules, each dealing with a different surface. The details are...

TOOLS

The basic set to create elements. A simple set of popular tools with additional features. Each tool will also have its own properties that can be controlled as well. This adds to the possibility of variety in styles.

ELEMENTS

The shapes created by the tools comprise this part. These shapes also have individual parameters, based on the type. The control of these parameters further adds to the range of possible outcomes.

SURFACE

The shapes created by tools are placed on the surface. These interact with the surface on command. Any change in the shape or surface parameters impacts
The interaction.

CONCEPT

INTERACTION OUTLINE

The basic interaction happens between the created shapes and the surface. The underlying idea is to get the shapes to react to the surface underneath. Apart from that, to get the interaction to vary depending on the parameter values is another intention. Each of the three components i.e Tools, surface & elements, have their own respective set of parameters.

ANIMATION

The animation is based on the basic key-frame concept. Each animated object will have key-frames on the time line. There is a special “record path” animation, which takes into consideration, the set number of frame-span. Depending on the frame span, the software sets the key-frames. Another aspect built in is the ability with the user to drop a preferred number of frames after each frame.This adds to the stop-motion customization feature. The animation method has been kept simple, but at the same time provides the users with ample control.

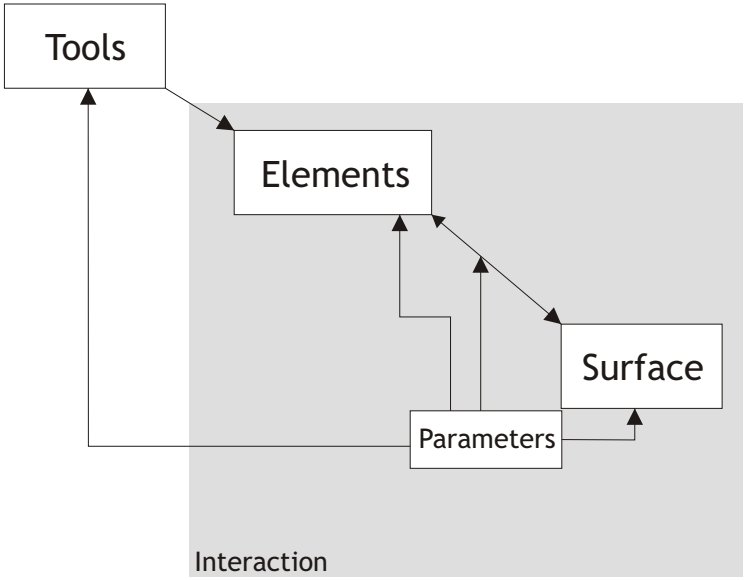
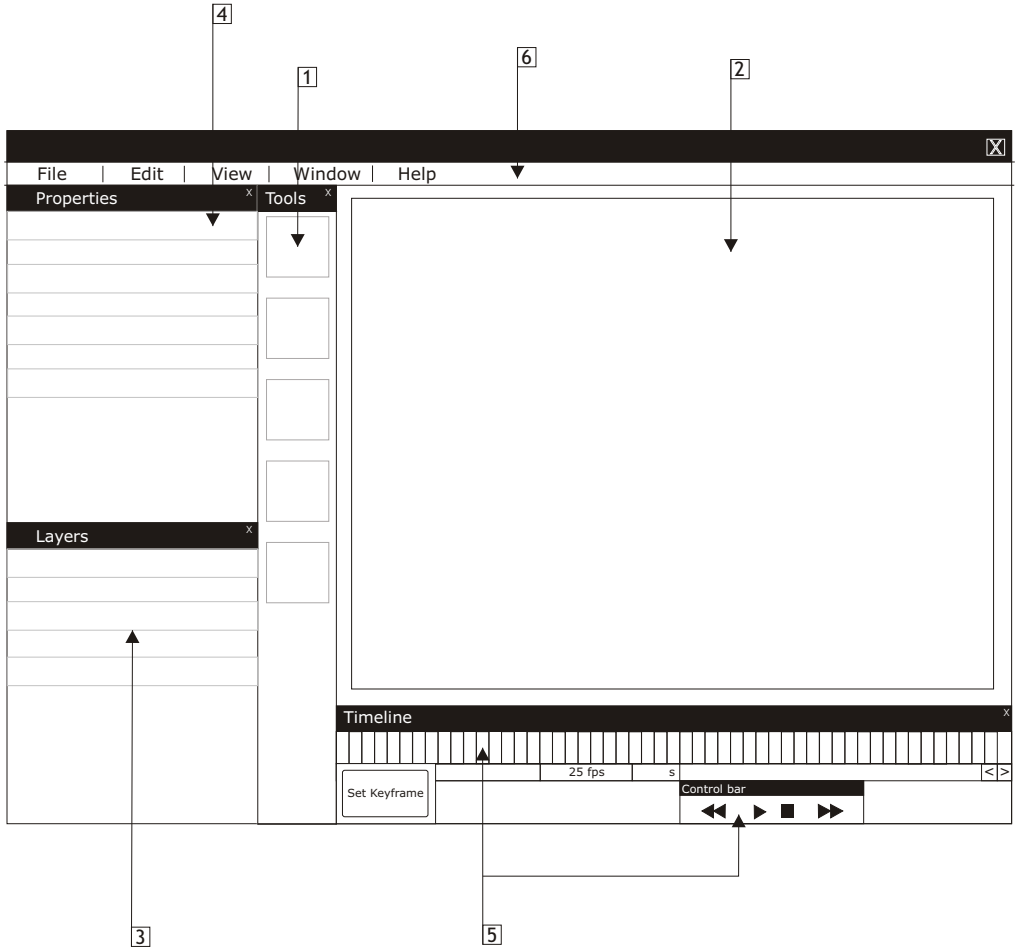


Figure depicting the basic skeleton

CONCEPT | Details



The tool consists of four modules, sand, water, light-grid & paper. Each of these modules have a common basic interface with varying tools. The interface has been kept minimal & simple. The basic components would be...

1.TOOL-BAR

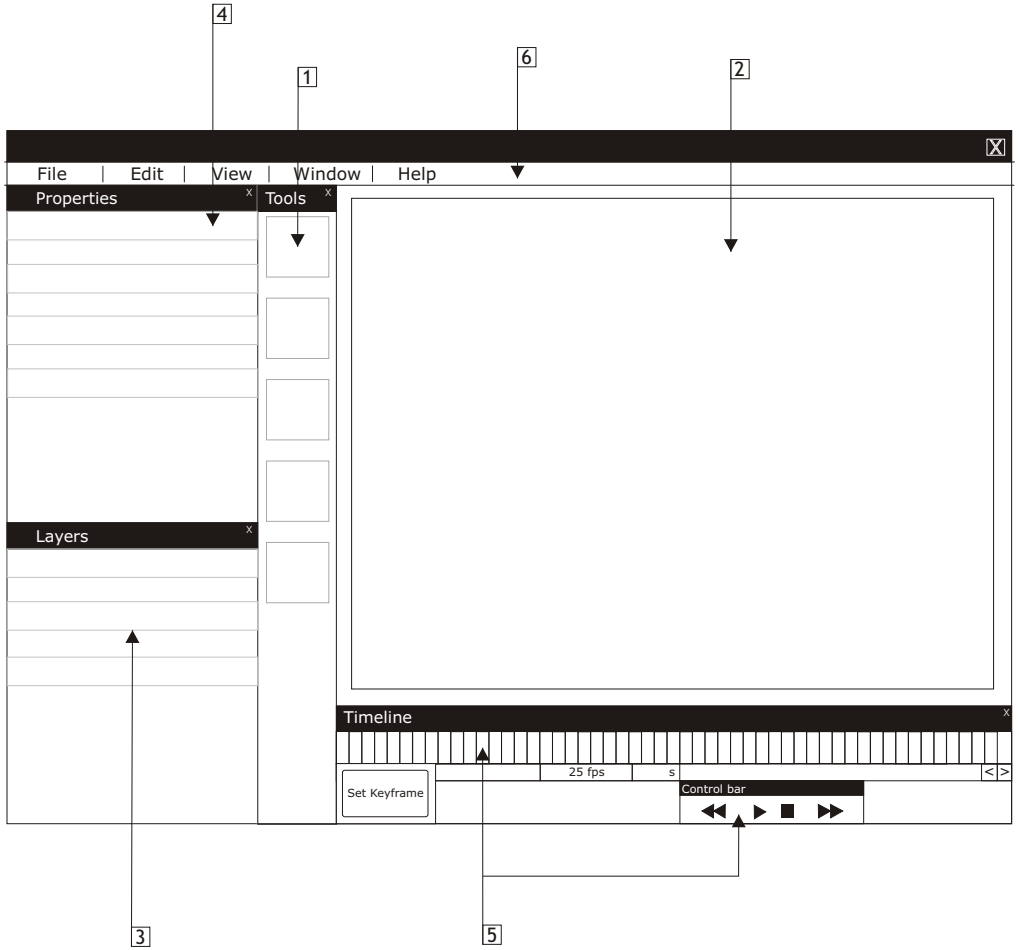
As the name suggests, this component consists of various tools, depending on the module.

2.CANVAS

The canvas is the basic background surface. Depending on the module, the canvas can be sand, water, light-grid or paper.

3.LAYERS PANEL

The layers panel holds the different layers. By default it has the background layer. It also has indications as to whether the particular layer is visible, or there is an animation for the layer.



4.PROPERTIES PANEL

This panel holds the document properties, the tool properties, and the shape properties. Depending on what is selected, the properties panel changes its content.

5.TIMELINE & CONTROL-BAR

As in any animation tool, there is a timeline (with a play-head) and a control-bar. The timeline also has settings for the frame rate as well as the duration of the animation.The “set keyframe” button comes coupled with it. The control-bar is used to playback the animation.

6. MENU-BAR

The menu bar consists of the regular menu items. The file, view, edit, window and help options being some of the members.

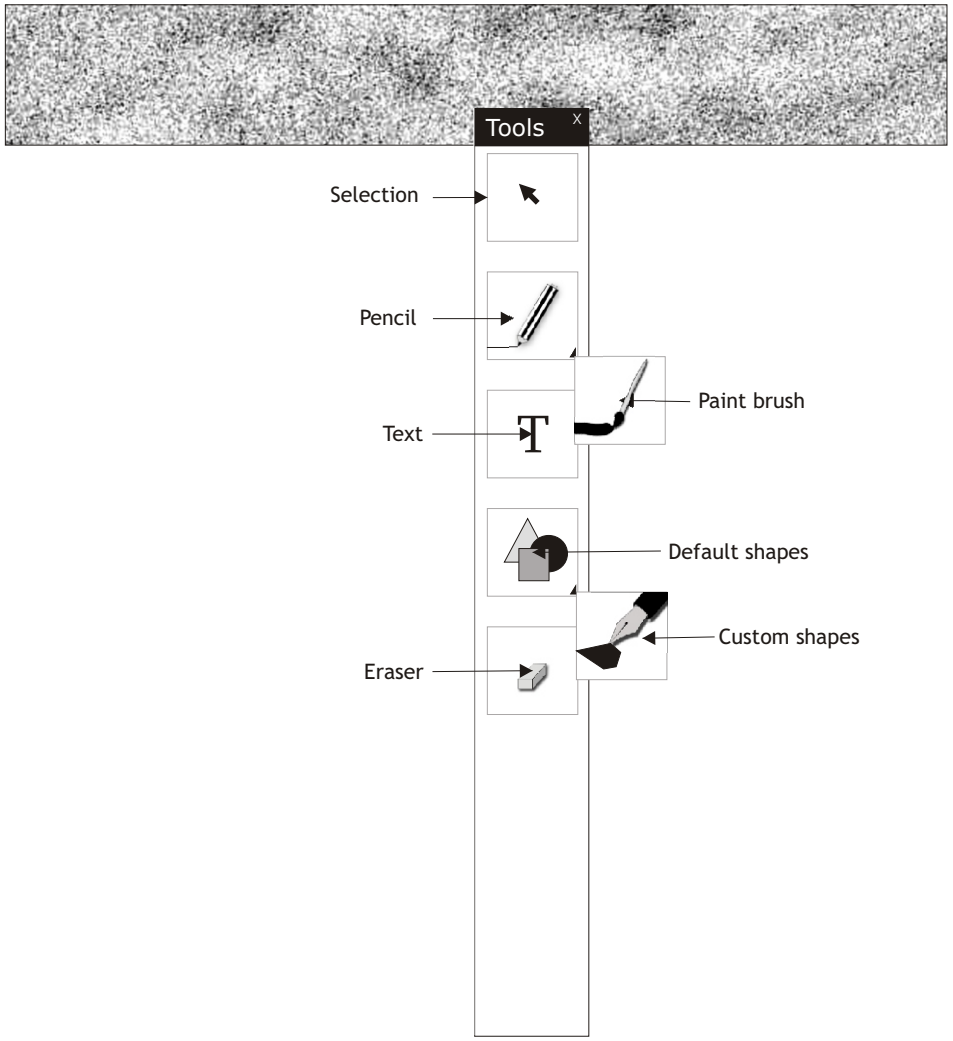


Figure depicting the tools in this module

This module deals with sand plane. The properties of sand, such as looseness, grain-size, colour, etc. can be controlled in the properties panel window.

The following are the tools associated with this particular module.

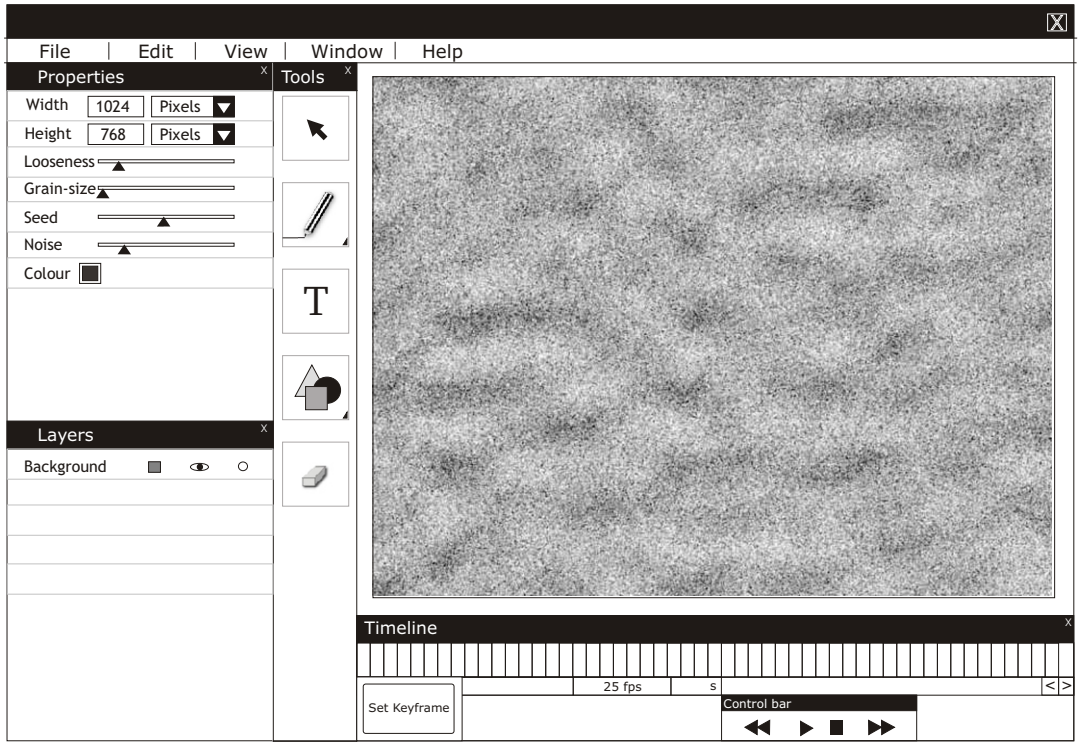
SELECTION TOOL

PENCIL/BRUSH TOOL

TEXT TOOL

SHAPES TOOL

ERASER



Screen depicting document properties

As shown in the figure alongside, this is how the properties and layers panels are populated in a new document.

Besides the basic document size and color parameters, there are the following properties...

LOOSENESS

This particular parameter defines the degree of looseness of the sand surface.

GRAIN-SIZE

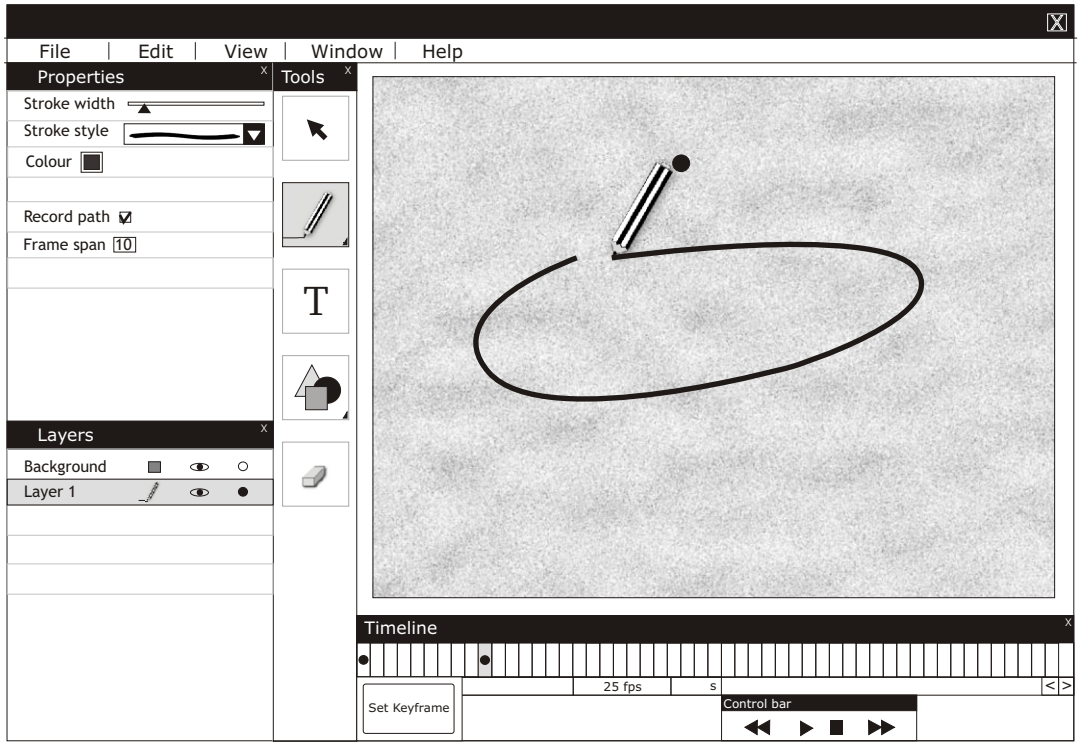
By changing the value of this parameter, the grain-size or particle size of the surface can be manipulated.

SEED

The seed value determines the pattern of unevenness in the sand surface. Different seed values give a different pattern of bumps in the surface.

NOISE

This refers to the surface noise or the unevenness in the sand surface. Varying this value can give different distortions



Screen depicting tool properties

TOOL PROPERTIES

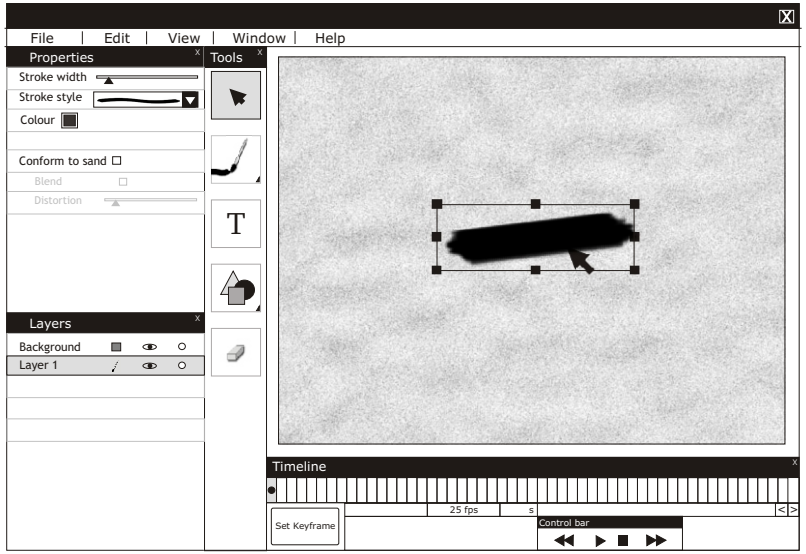
As shown in the figures alongside, once any tool has been selected its respective properties are shown in the properties panel. For instance, in this example, the properties of the pencil tool has been depicted.

RECORD PATH

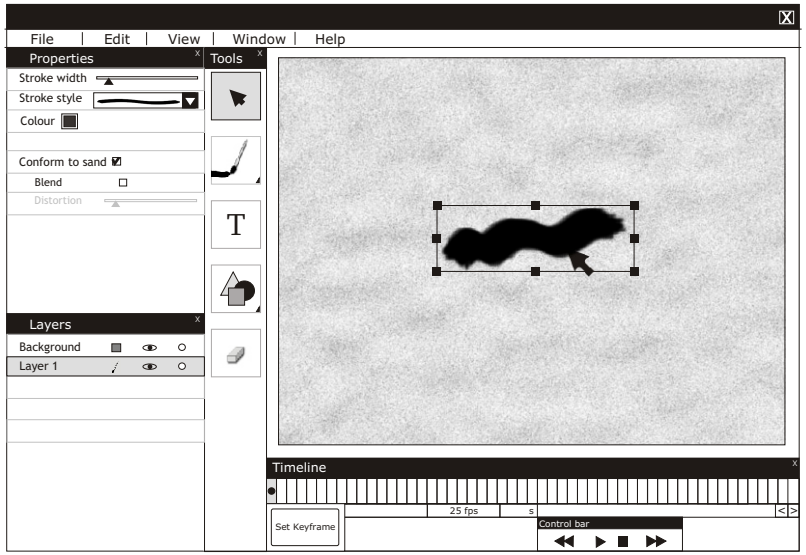
This option is selected when we want the path to be recorded as it is drawn. As an indicator of the same, there is a “record marker” along with the tool.

FRAME SPAN

This gives the user the option to speed up or slower the drawing speed (during recording).n this example, a frame span of 10 indicates that the software will set a keyframe on the tenth frame (as depicted in the figure).



The shape before conforming to sand surface



The shape after conforming to sand surface

SHAPE PROPERTIES

As shown in the figures alongside, once any shape has been selected its respective properties are shown in the properties panel. For instance, in this example, the properties of a brush stroke (shape) has been depicted.

CONFORM TO SAND

Checking this option makes the shape conform to sand surface. Thereby aligning itself along the contours of the surface.

BLEND

Blend, is to merge the shape onto the sand surface, thereby inheriting the material properties of the sand. This end results in an impression of the shape on the sand surface. This becomes active only after “conform to sand” has been checked.

DISTORTION

While blending a shape on to the sand surface, the distortion of the blend can also be controlled. The more the distortion, the less the identity of the shape.

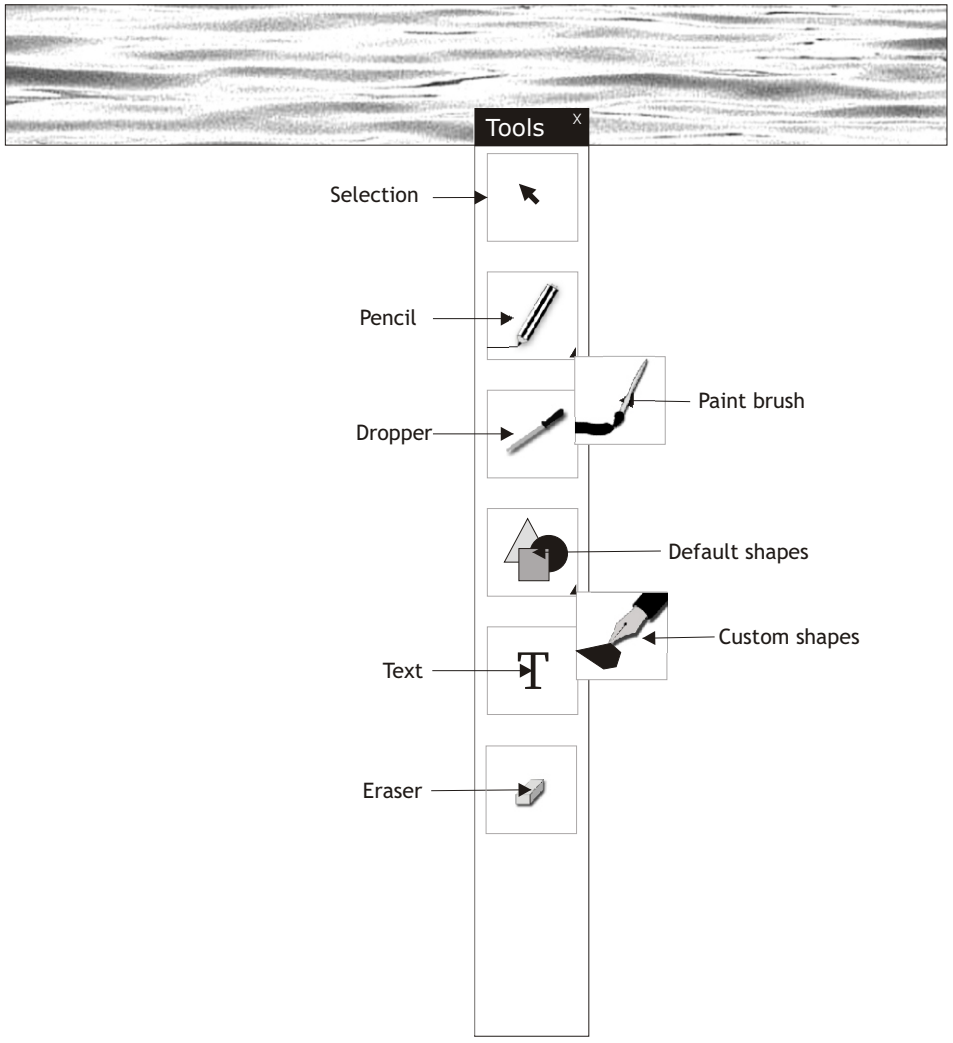


Figure depicting the tools in this module

This module deals with water plane. The properties of water, such as density, viscosity, color, etc. can be controlled in the properties panel window.

The following are the tools associated with this particular module.

SELECTION TOOL

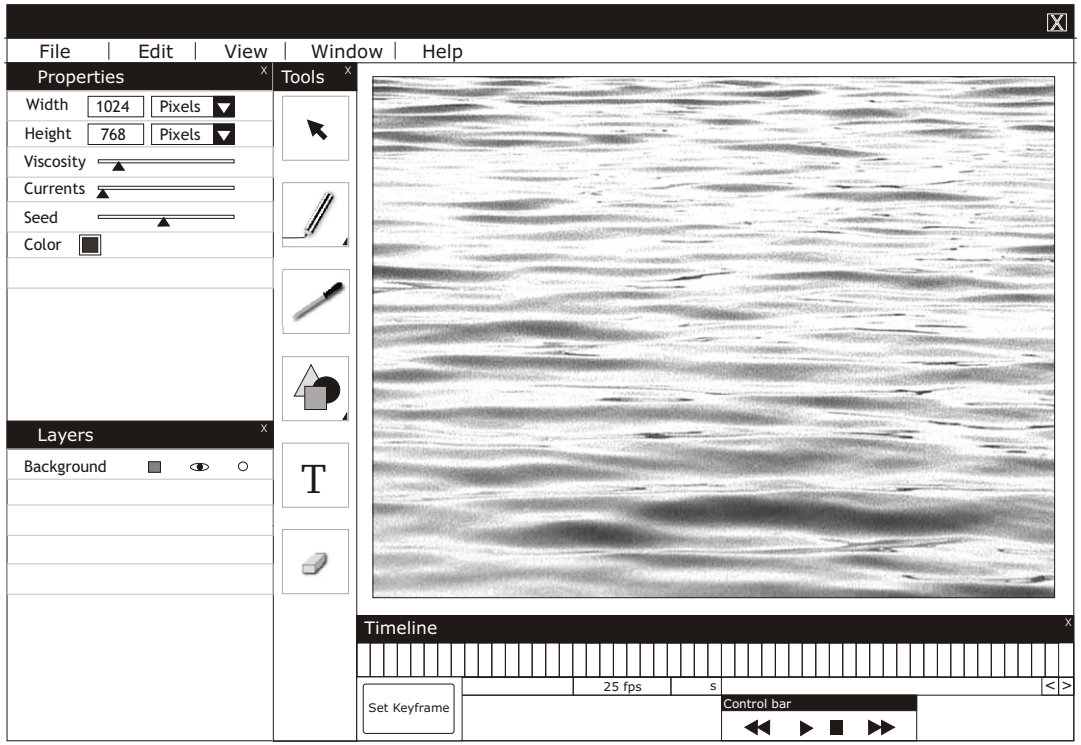
PENCIL/BRUSH TOOL

DROPPER TOOL

SHAPES TOOL

TEXT TOOL

ERASER



Screen depicting document properties

As shown in the figure alongside, this is how the properties and layers panels are populated in a new water document.

Besides the basic document size and color parameters, there are the following properties...

VISCOSITY

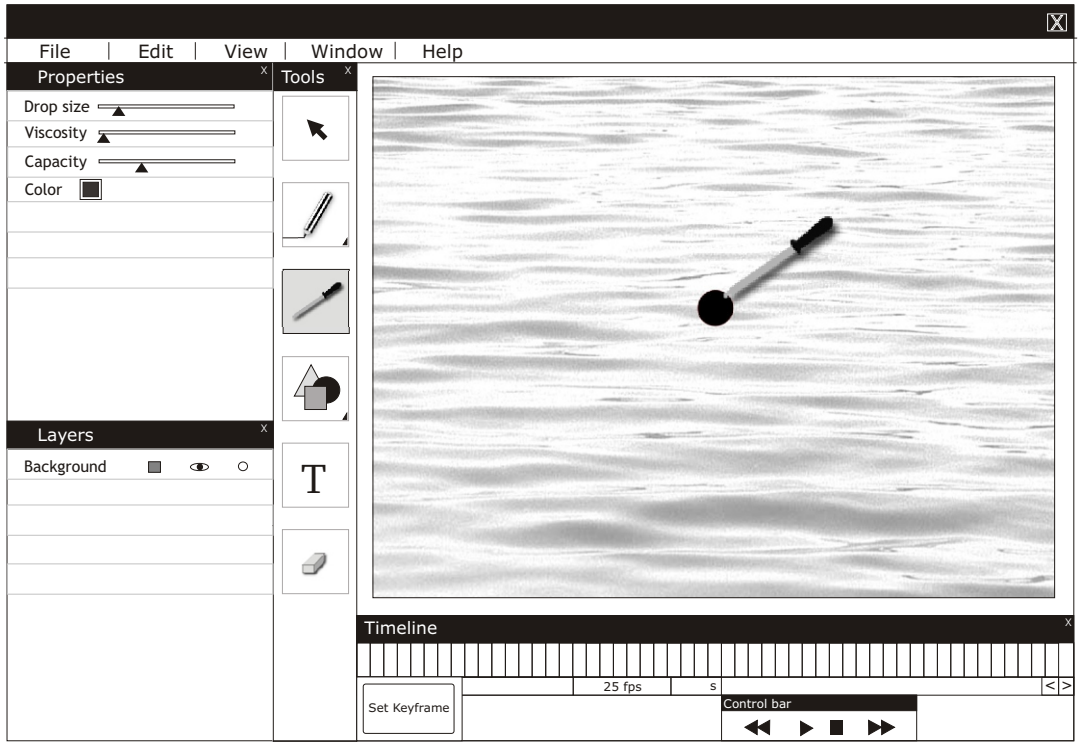
This parameter defines the density of the water surface. A variant surface can be achieved by manipulating this particular attribute.

CURRENTS

By changing the value of this property, the distortions or currents on the water surface can be reduced or increased depending on the need.

SEED

The seed value determines the pattern of unevenness in the water surface. Different seed values give a different pattern of bumps in the surface.



Screen depicting tool properties

TOOL PROPERTIES

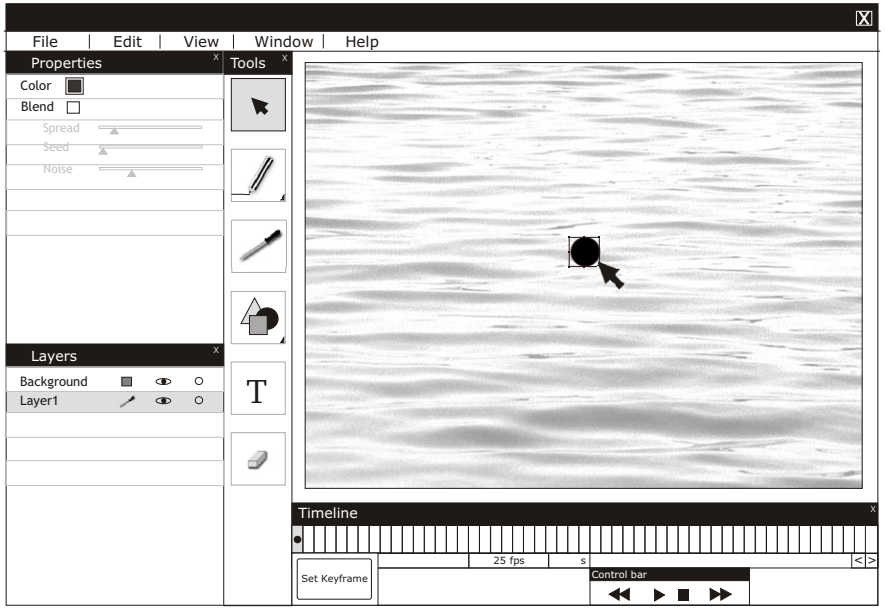
As shown in the figures alongside, once any tool has been selected its respective properties are shown in the properties panel. For instance, in this example, the properties of the"Dropper tool" has been depicted.

DROP SIZE

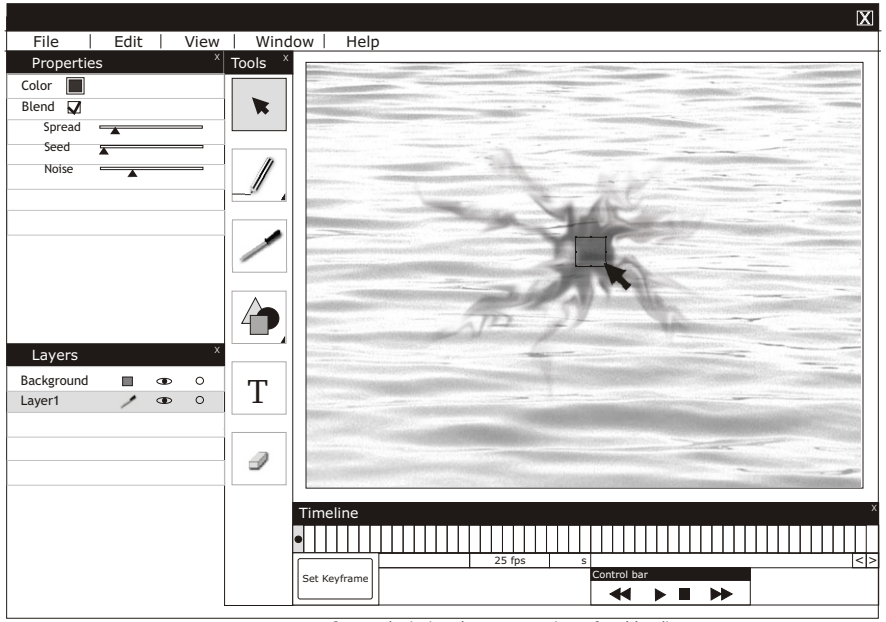
This slider is used to control the drop size. The dropper drops a drop of the set size on the water surface.

CAPACITY

This is the measure of the amount of color held by the dropper. Changing this will lead to a change in the life of the drop, i.e. The drop will dissolve out after a longer time if the capacity is more..



Screen depicting shape properties, before blending



Screen depicting shape properties, after blending

SHAPE PROPERTIES

As shown in the figures alongside, once any shape has been selected its respective properties are shown in the properties panel. For instance, in this example, the properties of the color drop has been depicted.

BLEND

This option is checked to get the paint blot effect, when a paint drop is dropped onto a water surface.

SPREAD

As the name suggests, this parameter is used to control the spread of the blot. The term has ben lifted from any basic graphic tool.

SEED

The value of this attribute can be changed to get a variation of the blot. A new seed value renders a new spread pattern or the drop.

NOISE

This parameter controls the disturbance in the blot. Another parameter to add to the output variety.

The above parameters become active only after Blend option has been selected.

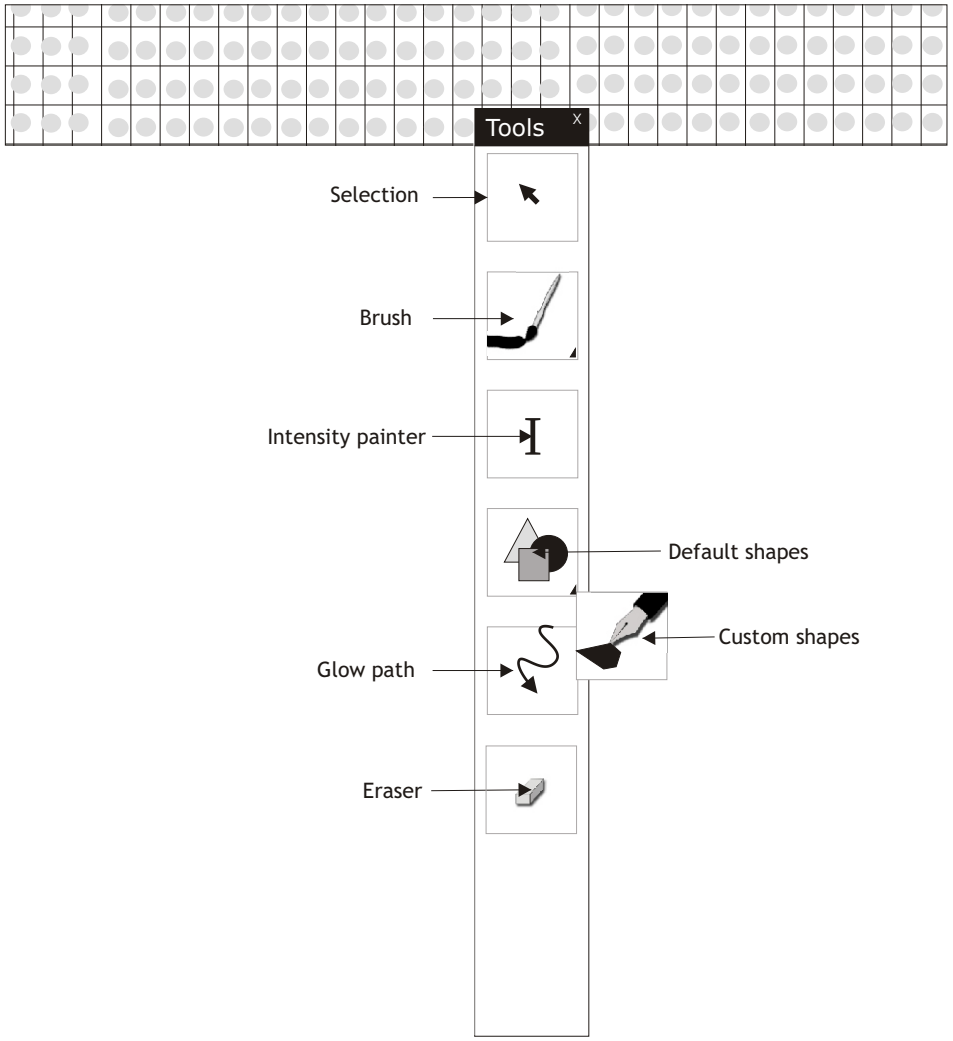


Figure depicting the tools in this module

This module deals with a Light-grid plane. The properties light, such as intensity, color, etc. can be controlled in the properties panel window.

The following are the tools associated with this particular module.

SELECTION TOOL

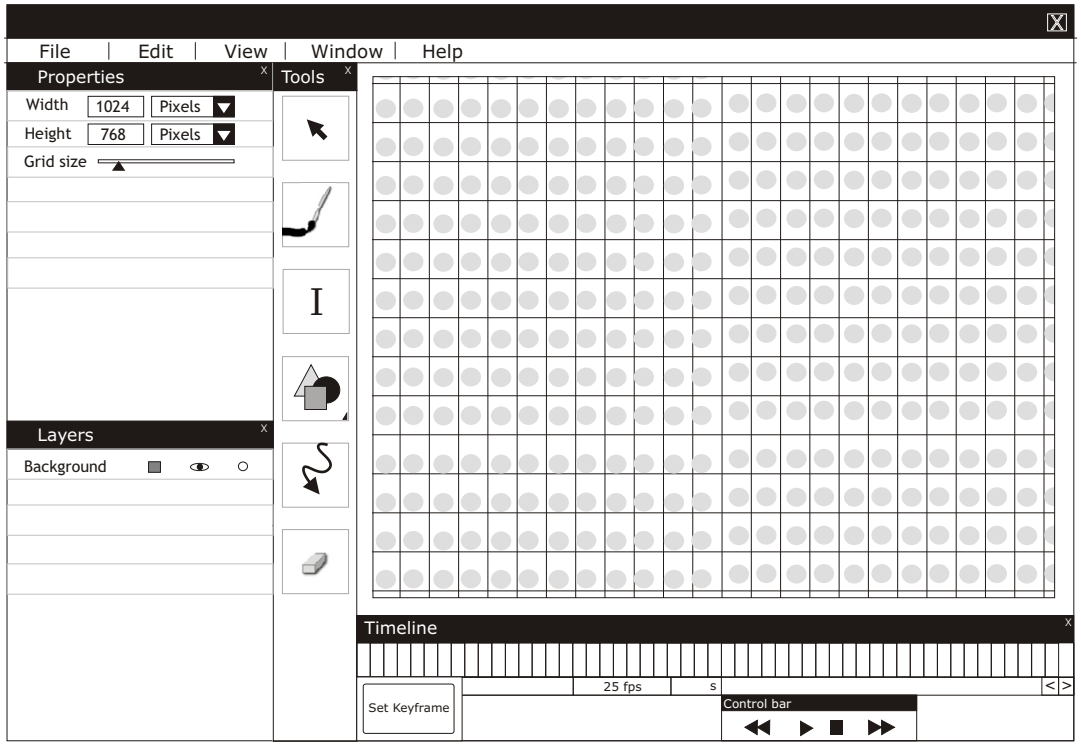
BRUSH TOOL

INTENSITY PAINTER

SHAPES TOOL

GLOW PATH

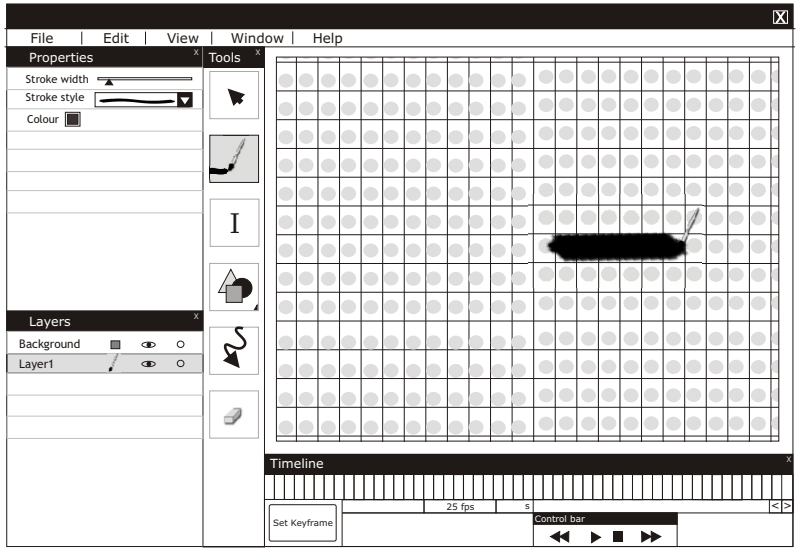
ERASER



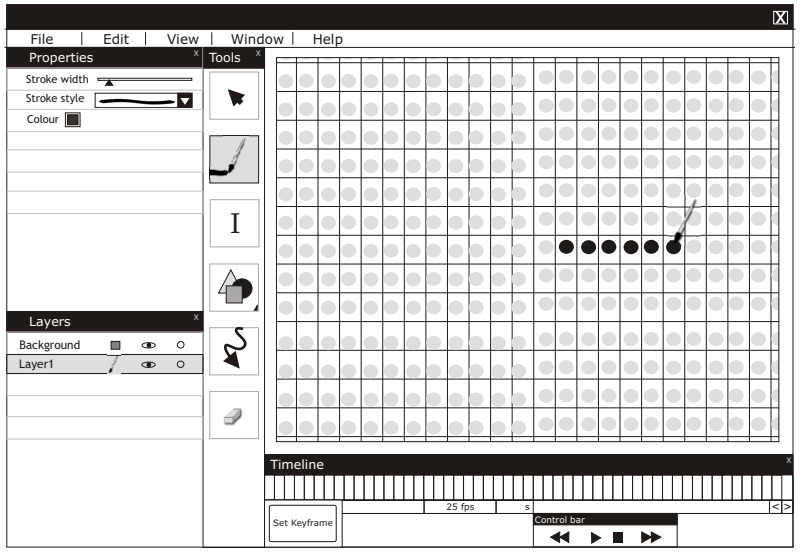
Screen depicting document properties

As shown in the figure alongside, this is how the properties and layers panels are populated in a new light-grid document.

Besides the basic document size parameters, there is another attribute called Grid Size. This parameter is used to increase or decrease the number of grid cells. The grid initially has all the light nodes in the OFF position, as depicted alongside. There is a set minimum and a set maximum threshold, beyond which the users can't reduce or increase the grid size.



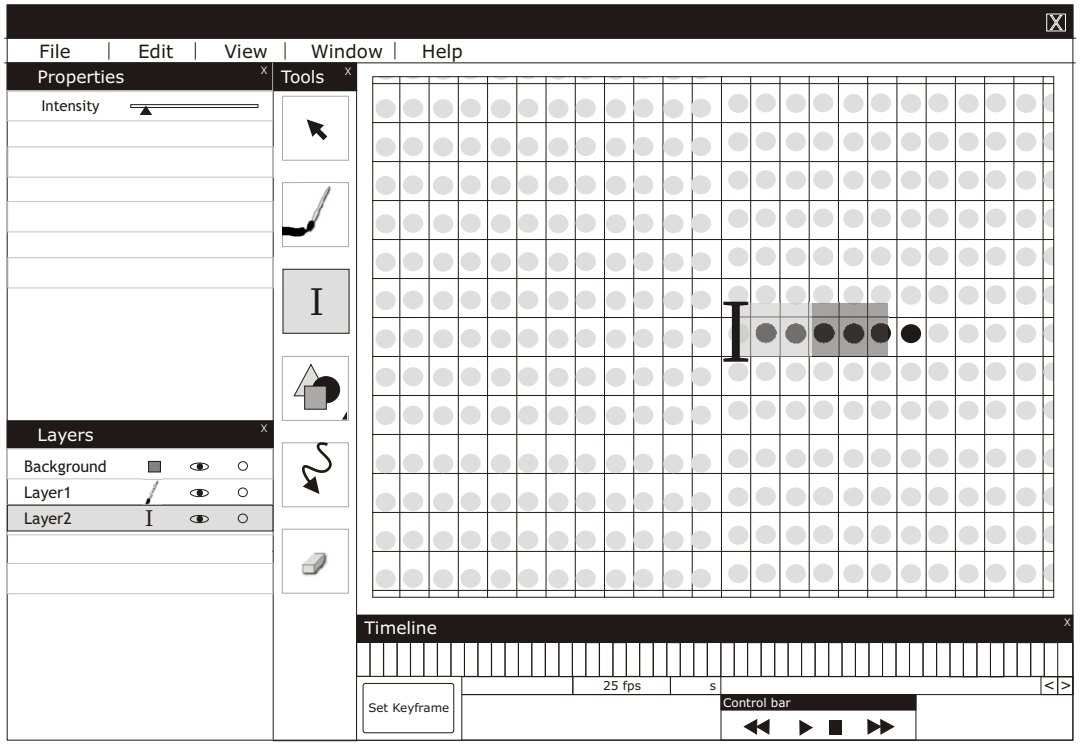
Screen depicting the brush tool, while the mouse is still pressed



Screen depicting the brush tool after releasing the mouse

As shown in the figures, the brush tool is used to paint on the light nodes. The colored stroke renders every node on its path (interpolated) with its color. The brush stroke remains a stroke, till the mouse is kept pressed. Once the mouse is released, the underlying light nodes get colored.

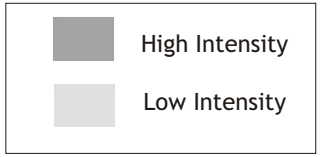
The other basic parameters of the brush tool can also be controlled. These include, brush stroke size and style, which includes different stroke styles. The rendering of the light nodes takes place based on interpolation technique, based on how much of each cell is covered by the stroke.



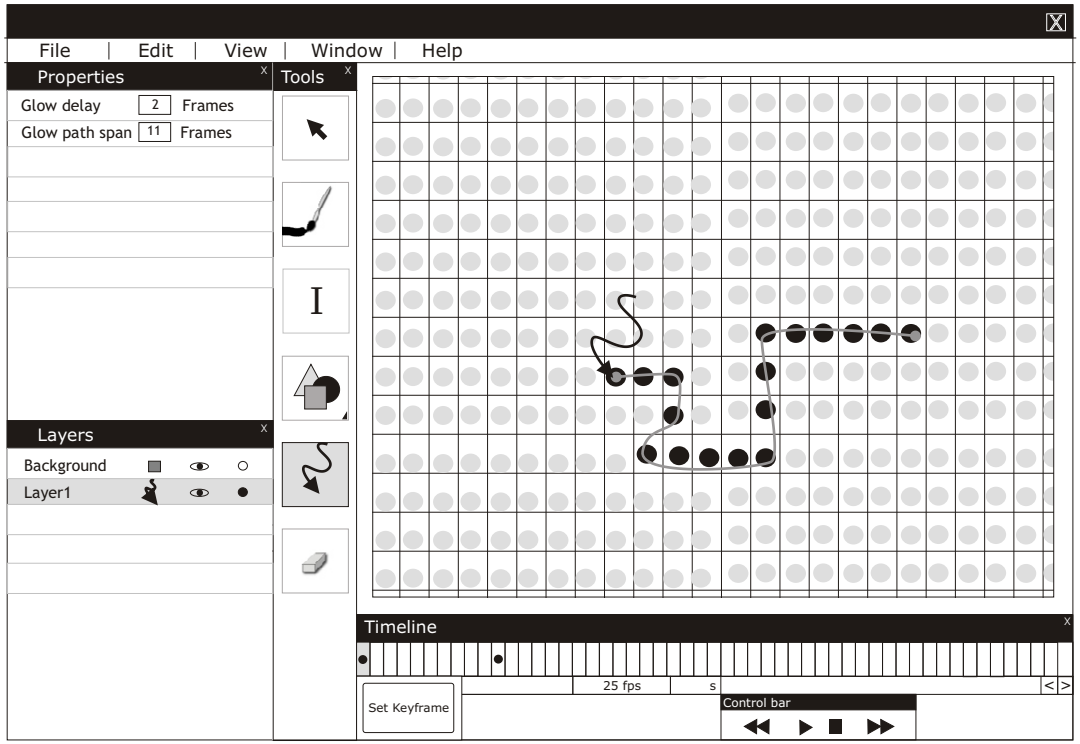
Screen depicting the intensity painter tool

The intensity painter is a tool, that can be used to paint different intensity values onto the light nodes. An intensity value is selected on the slider and then it is drawn on the light nodes. As shown in the figure, different intensities are painted on and the respective intensity value gets attributed to the underlying nodes.

Color gradations are used as intensity indicators.



This tool basically acts as a brush, but rather than painting colors onto the light nodes, it paints intensities.



Screen depicting the Glow path tool

The “Glow Path” tool helps in creating blinking lights along a drawn path. Even if the path is a closed path, it affects only the light nodes on the circumference. This tool basically marks out a path for the nodes to glow and go off. The time span for which the nodes will glow is set using the “glow delay” parameter. The “glow path span” property refers to the total time span within which each node on the path must blink.

A “running lights” animation along any drawn shape is the highlight of this particular tool in this module. The glow path control points can be tweaked to change.

CONCEPT

Let us consider this particular logo animation on a sand surface, using the sand module that we discussed earlier. We will go through each step involved in creating such an effect, and further all the steps to create and animation.

The following is an overview of the stages involved.

Creating & animating the shape using the brush tool

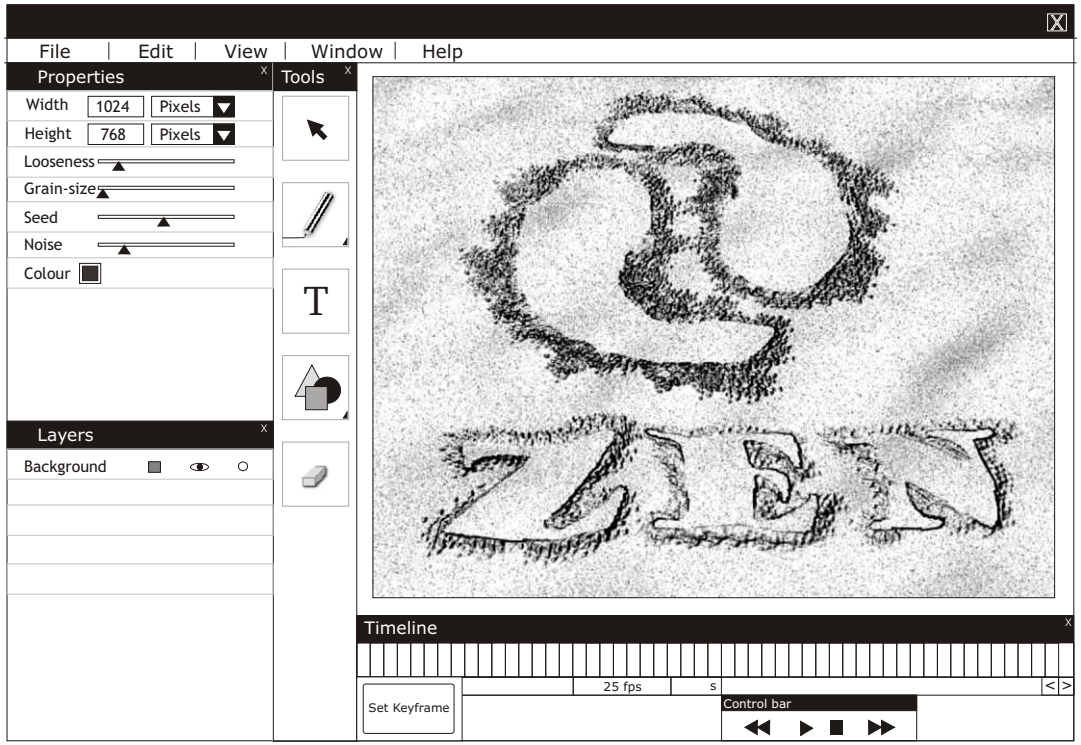
Conforming & blending the shape

Duplicating the shape

Creating the text

Conforming & blending the text

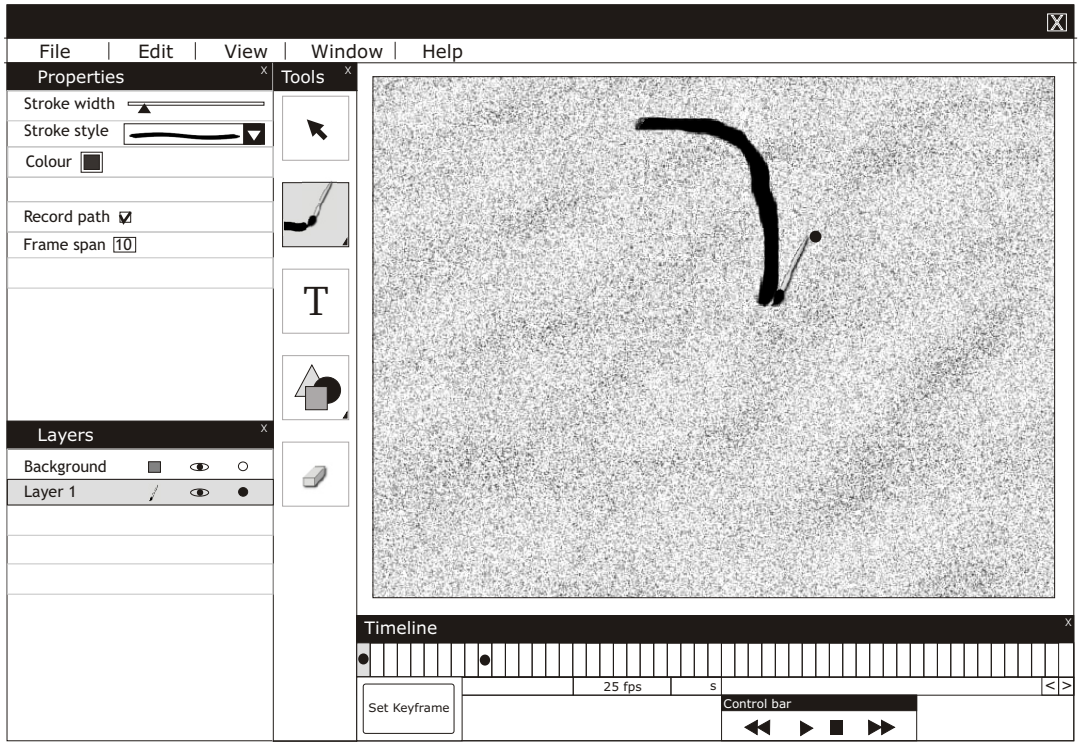
Animating the distortion factor in the blended text



Screen depicting document properties

CONCEPT

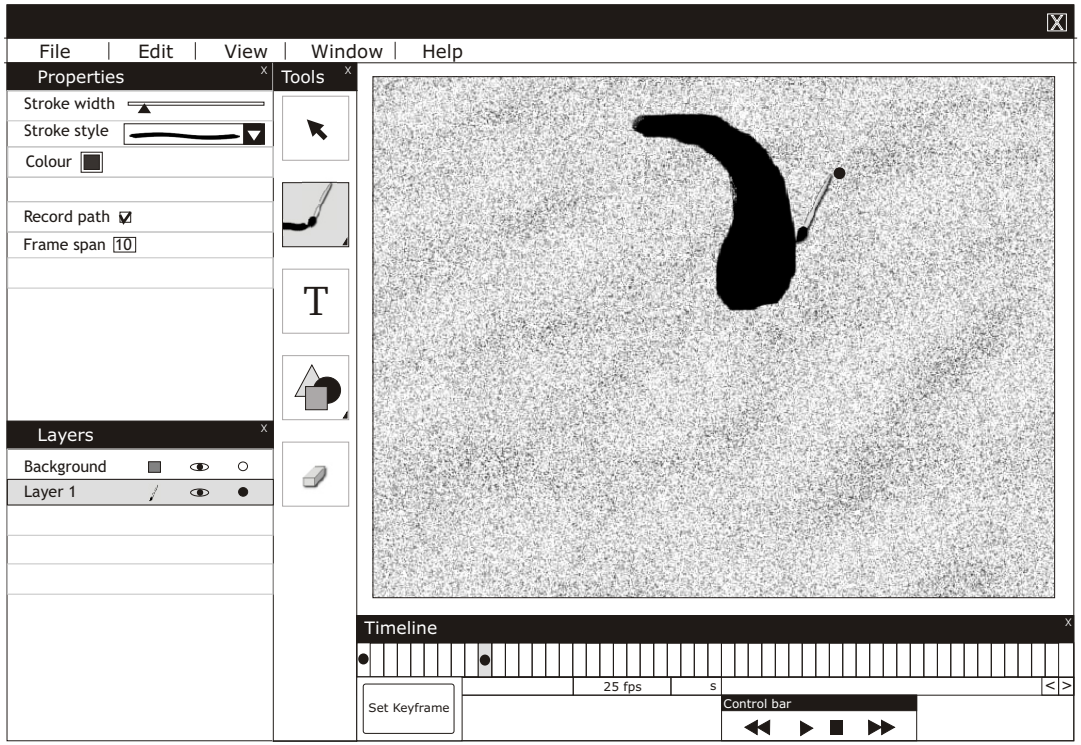
The brush tool is selected and the stroke width & style are set. The color is also chosen. The record path option is checked and the frame span of 10 frames is mentioned. This means that the shape animation will span over 10 frames. The shape is then drawn using the brush tool. As soon as the mouse is released, the software sets a keyframe on the tenth frame.



Creating and recording the shape using the brush tool

CONCEPT

The shape created by the brush tool is then corrected to match the required shape. The paint patches are put in the tenth frame as shown in the figure.

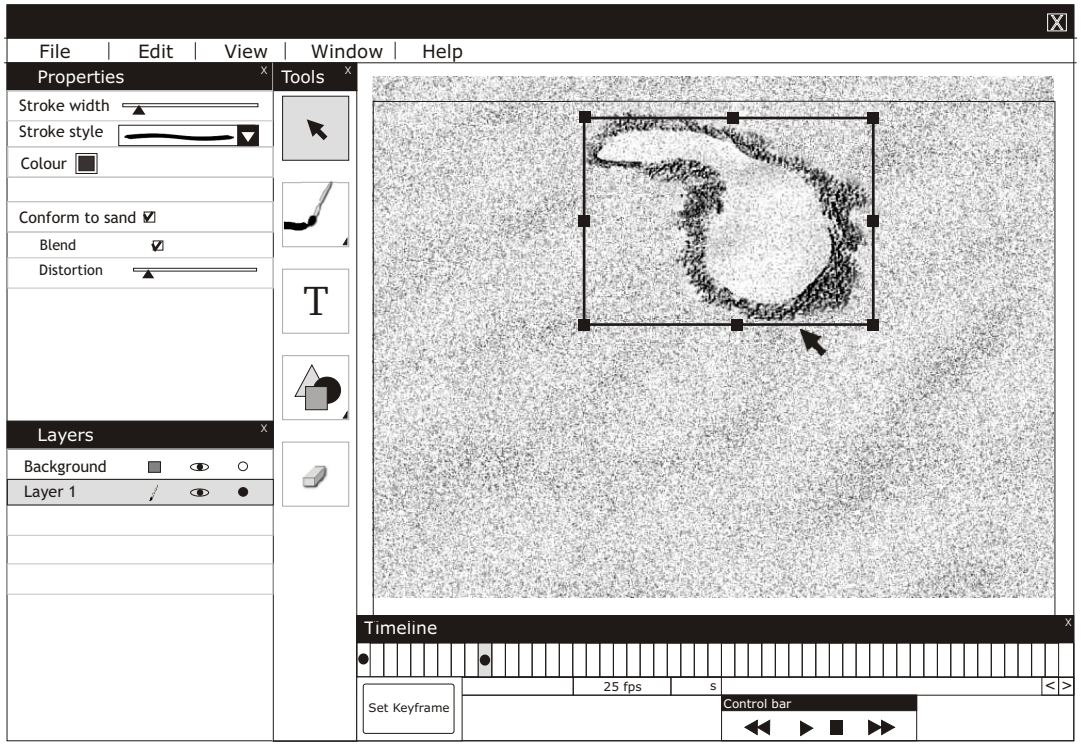


Creating and recording the shape using the brush tool

CONCEPT

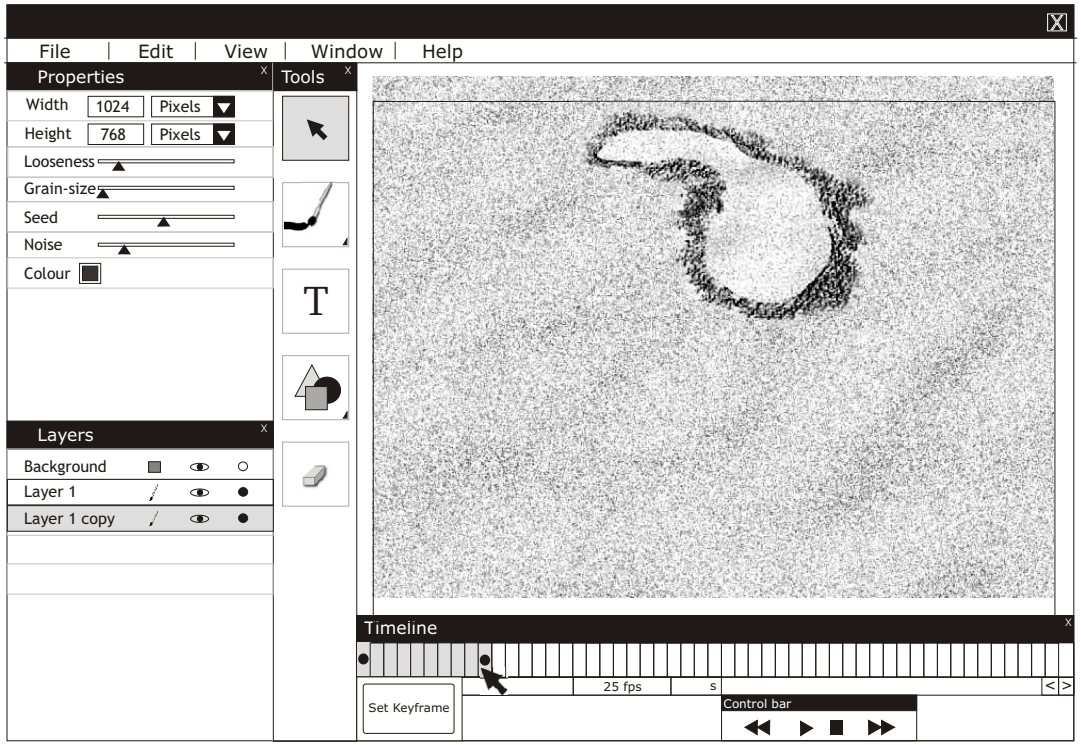
The shape is then conformed and blended on to the sand surface as shown in the adjoining figure. The distortion value is also selected so as to suit the requirement.

After conforming and blending, the shape looks like an impression on the sand surface.



Conforming & blending the shape

CONCEPT

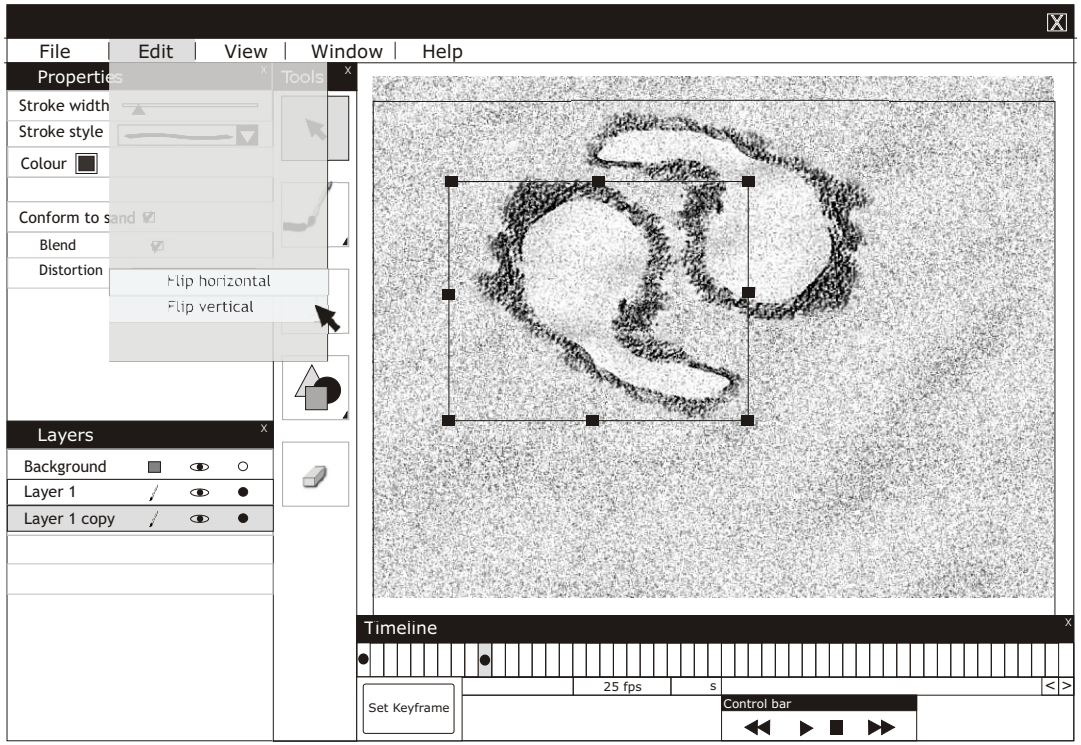


Copying & pasting the object and its animation

The frames are selected (as shown in the figure) and then copied and pasted using the shortcuts “Ctrl+C” and “Ctrl+V”.When the frames are selected from the timeline, the animation of the selected object is copied. If only the object without the animation had to be copied, either the layer (from the layers panel) or the object on the surface can be copied. Depending on where one copies from, the copied attributes change.

CONCEPT

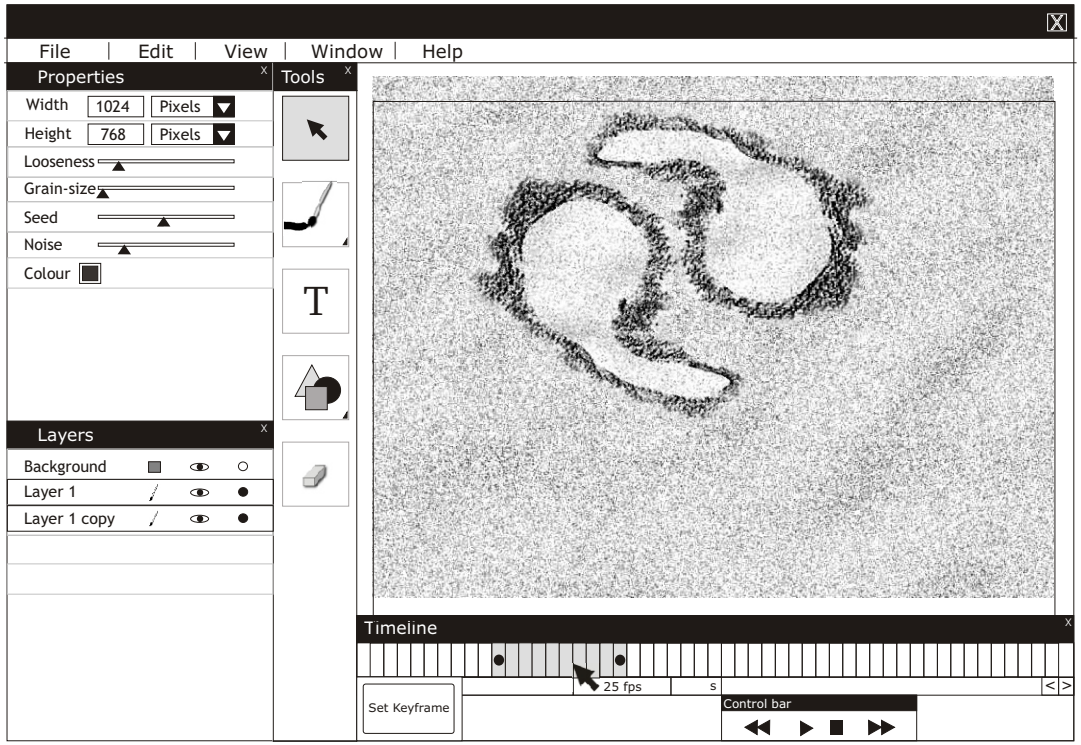
After copying the shape and its animation, it is aligned and placed as per needed. The shape is flipped horizontally and vertically to attain the composition as shown in the figure.



Flipping and placing the object as per requirement

CONCEPT

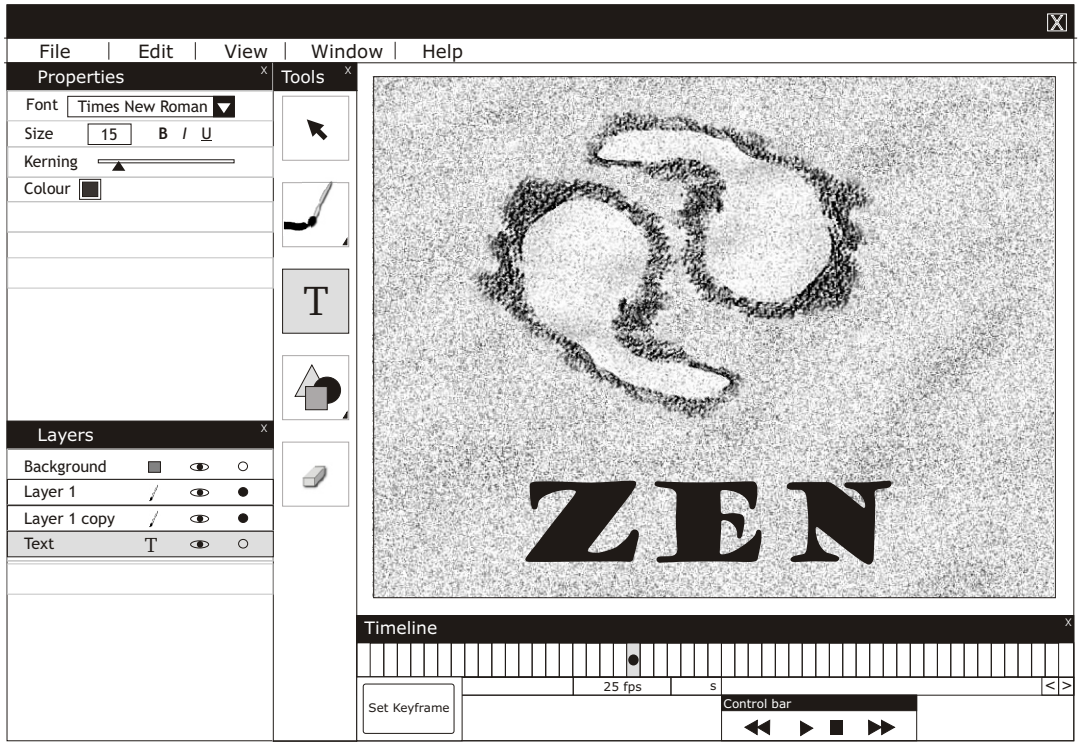
The frames and the keyframes are then shifted, so that the animation of one shape follows the other rather than both the animations happening simultaneously.



Move the frames and the keyframes, so that one object animation follows the other

CONCEPT

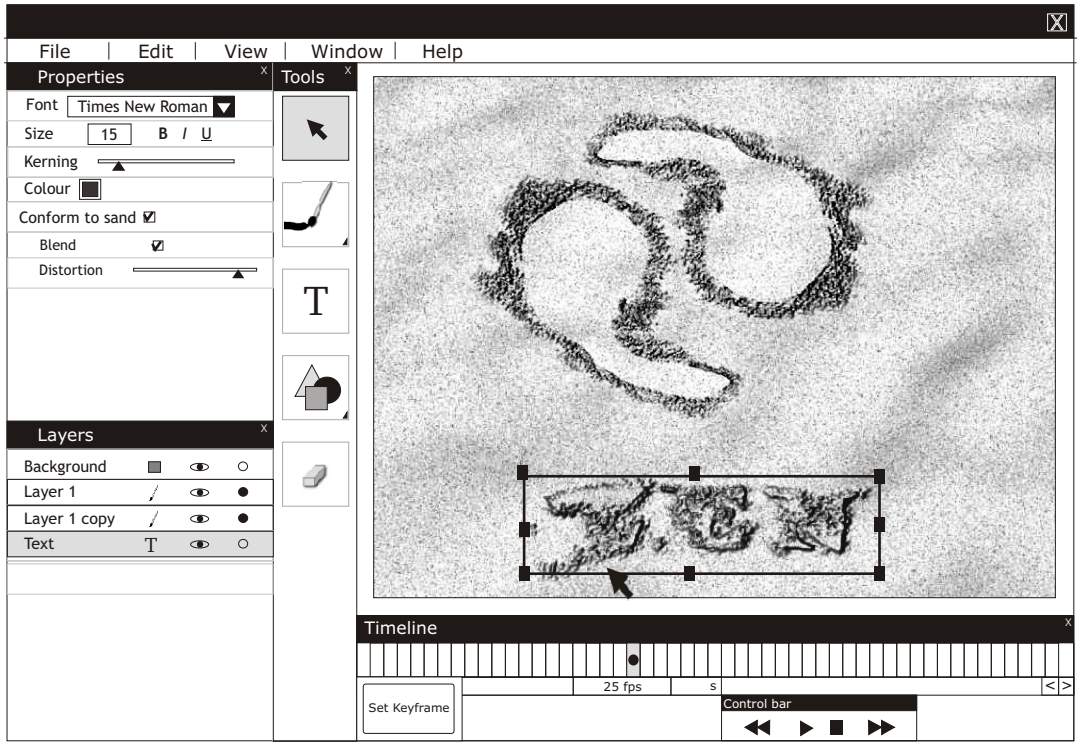
Now that the shapes are in place, let us type out the text using the text tool. The parameters associated with the text are populated in the properties window. A new layer is formed in the layers panel.



Creating the text layer

CONCEPT

The text is then conformed and blended to the sand surface. The distortion parameter is kept high, so as to derive a rugged and distorted look. The distortion reduces and the text becomes readable, being the intended animation.



Conforming, blending & distorting the text layer

CONCEPT

Setting a key frame and varying the distortion value

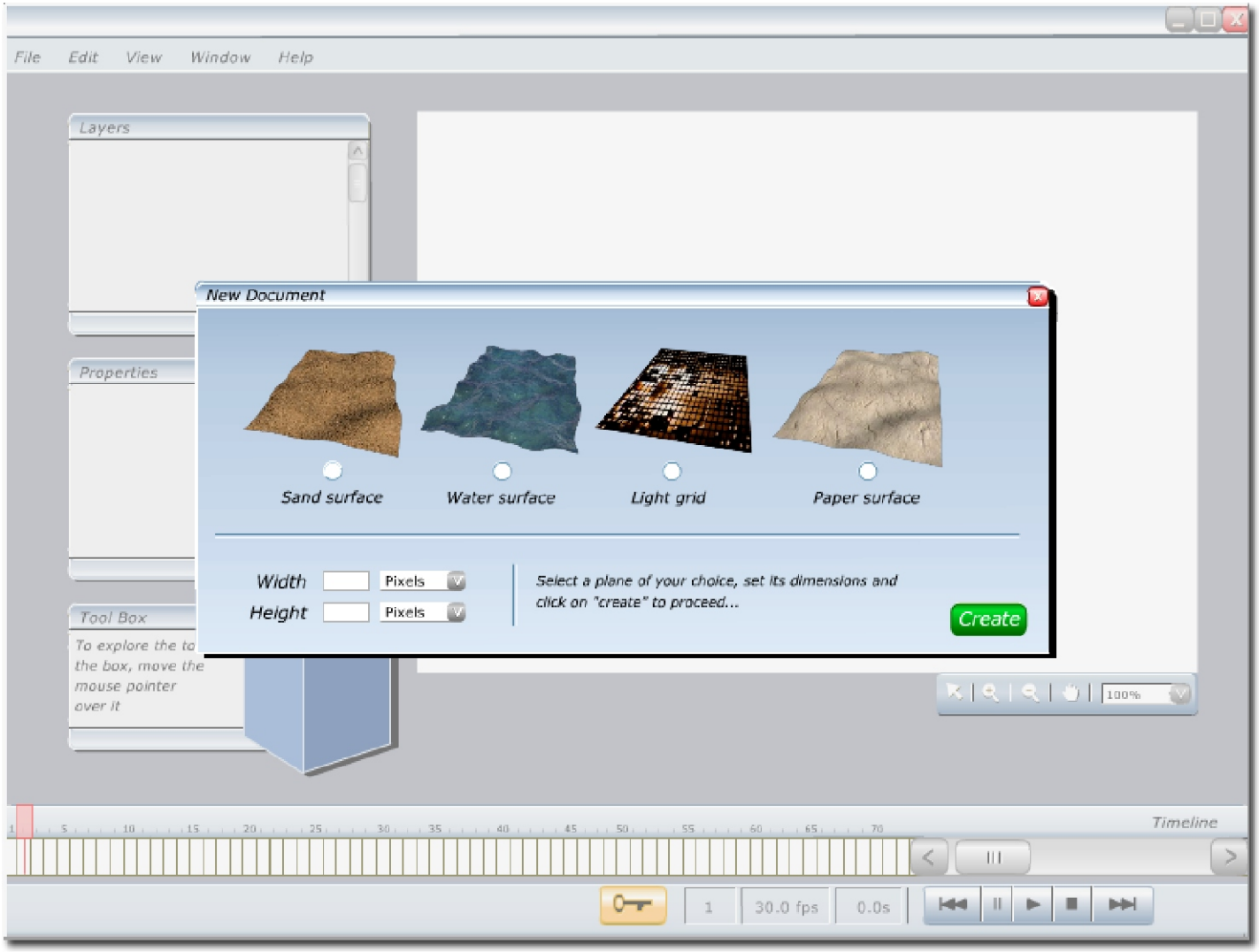
A keyframe is set ten frames from the initial keyframe where the text was created. The distortion value of the text is reduced as depicted alongside.

Thus the animation is complete. By easily modifying any of the parameters, the users can derive different styles for the same animation.

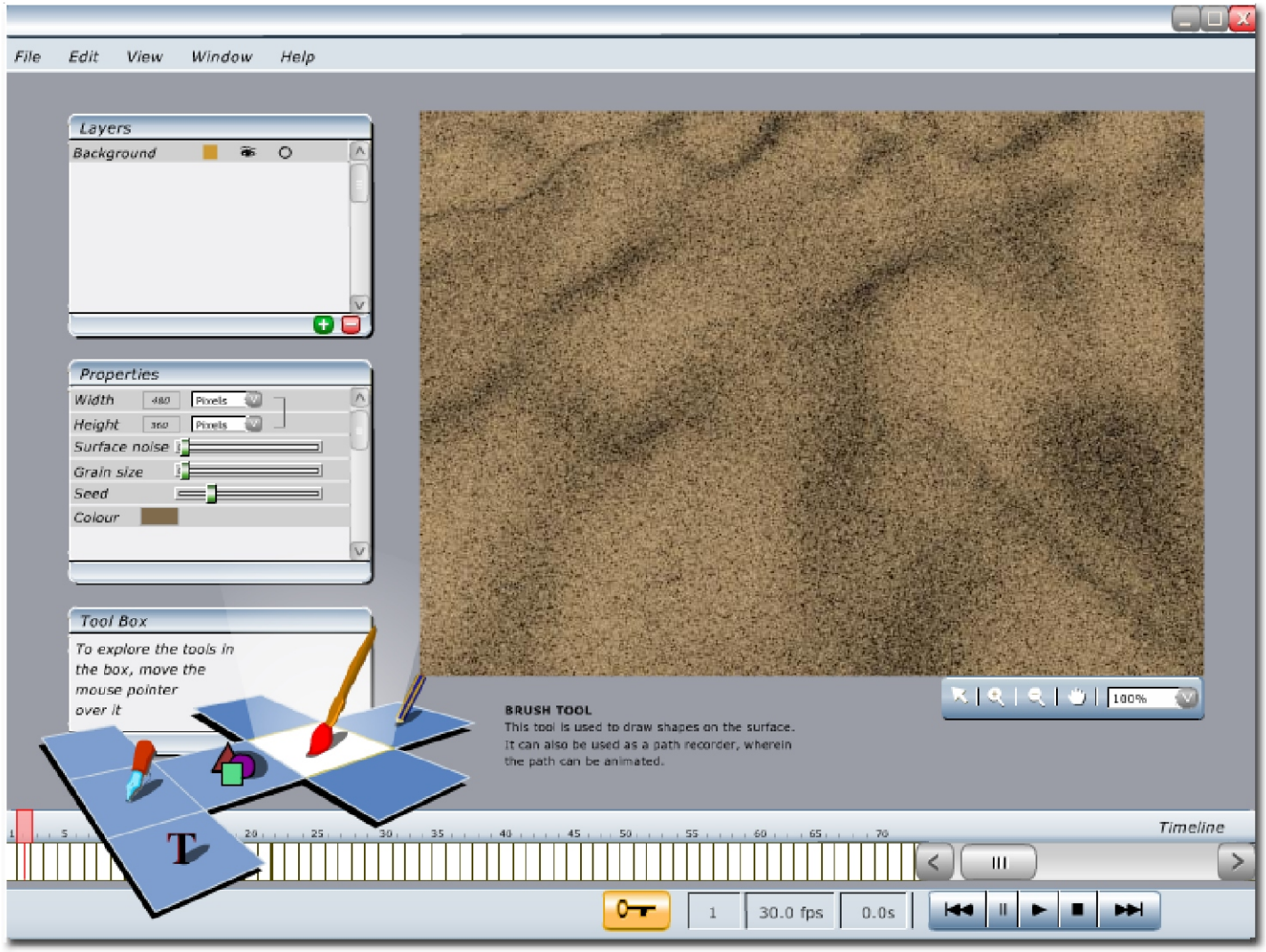
While rendering the animation, the user may drop certain number of frames after each frame, so as to create a stop-motion out of it.

VISUAL STYLING

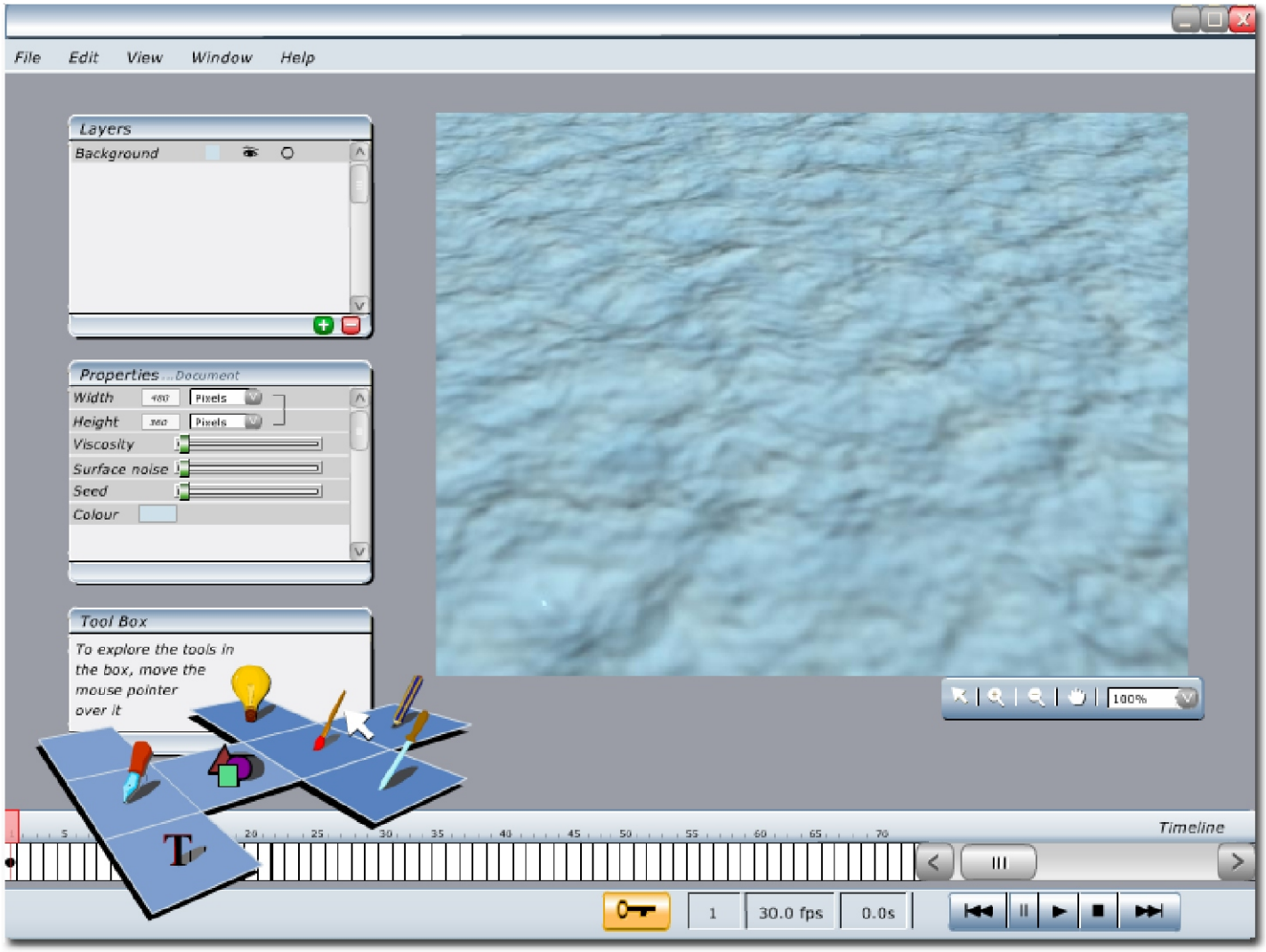
Now was the time I started thinking about the visual style for the interface. Focus was on a better user experience. Rather than having a style totally new and alien to users, I stuck to the standard Windows XP scheme. Familiarity in terms of the look & feel of the interface was yet another point of focus. With these pointers in mind, I furthered the design of the interface.



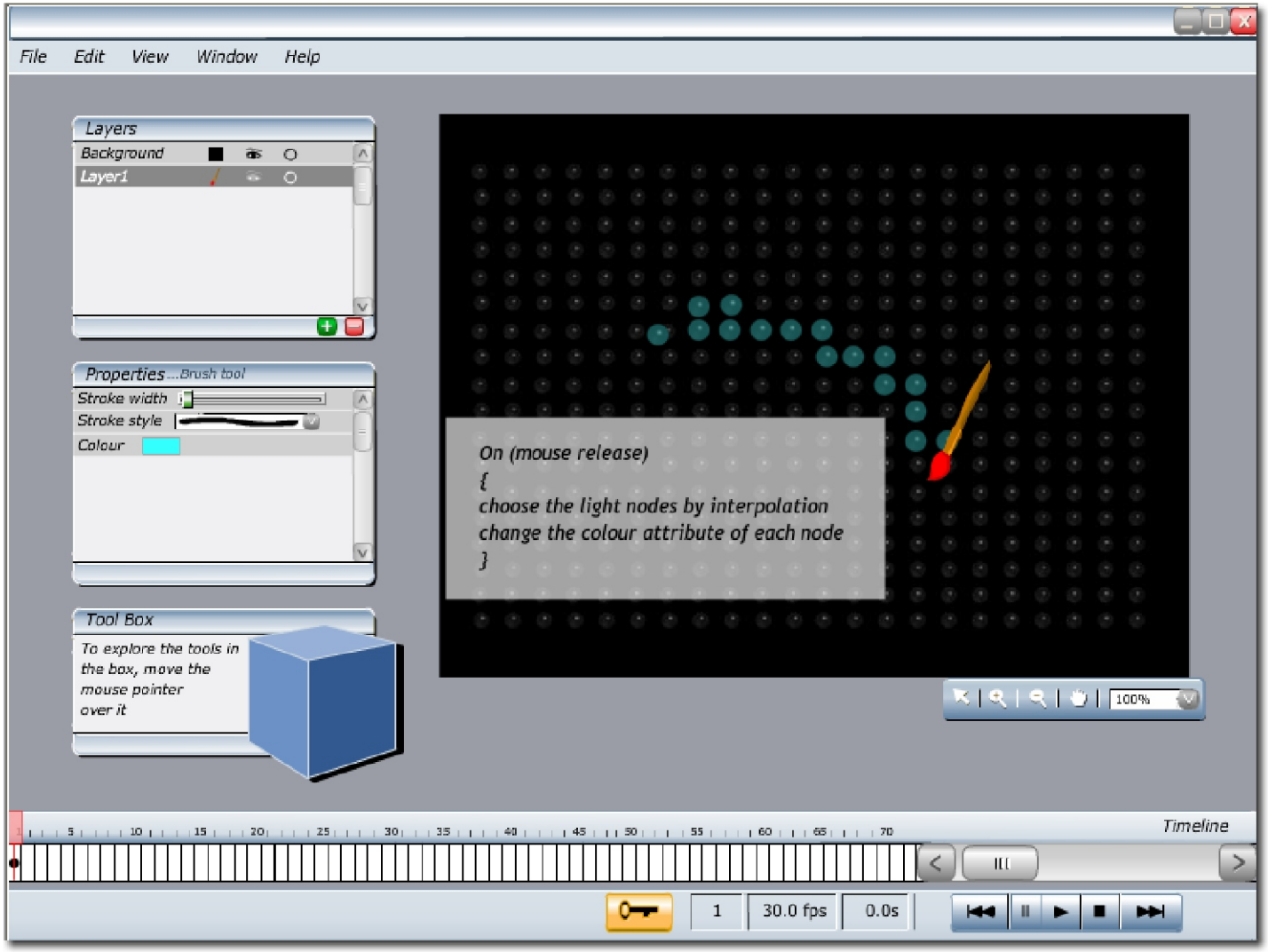
The screen-shot depicting a splash screen prompting the user to select a surface of his/her choice.



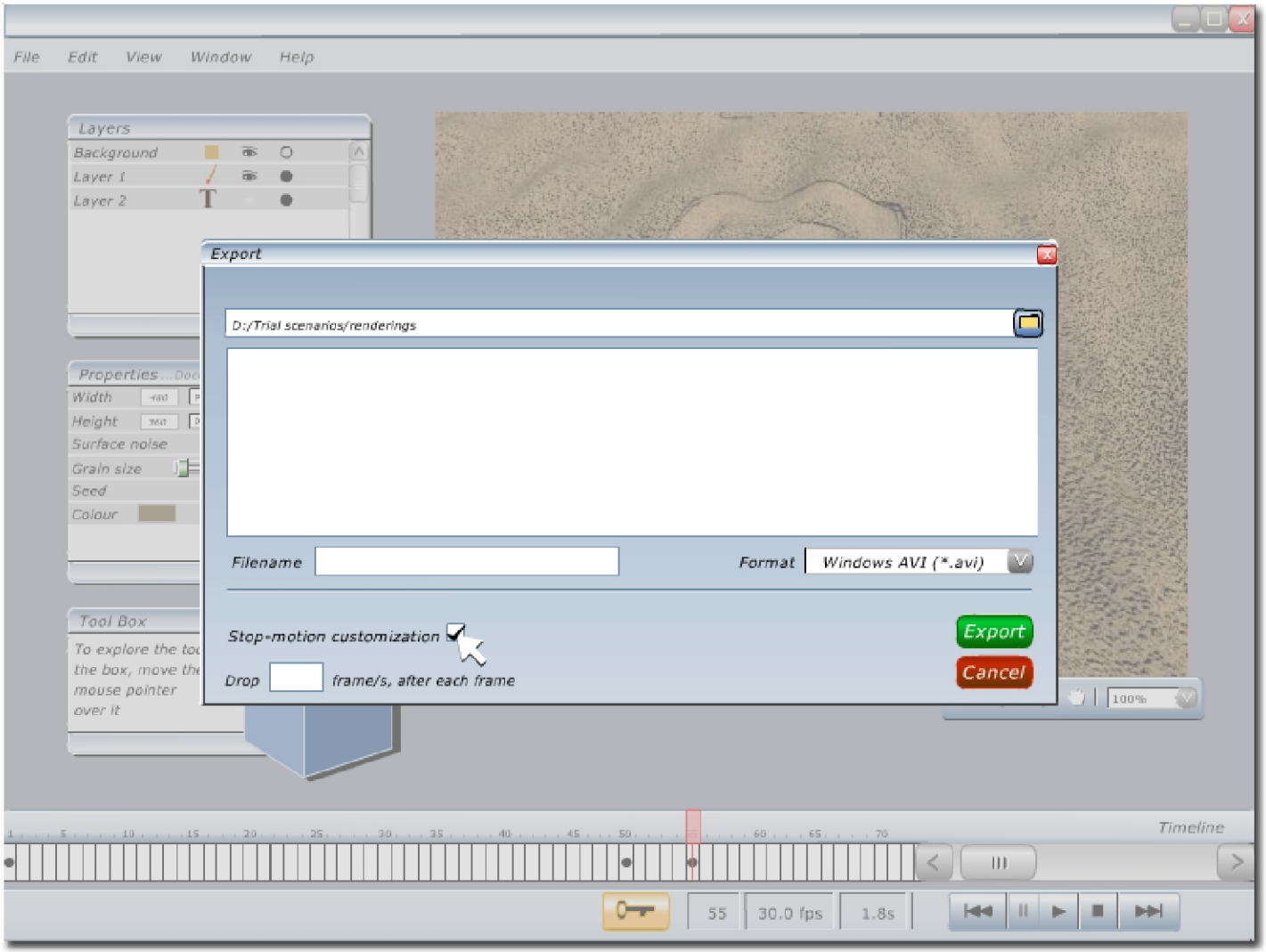
The screen-shot depicting the sand surface module. The tool-bar has been visualized as a tool-box. Since the concept deals with exploration, a tool-box adds value. Moreover, the tool-box provides for less clutter on the screen.



The screen-shot of the water surface module. The image also shows the respective tools available with this module.



The screen-shot of the light grid module. This module can be used to create glowing lights animation.As shown in the figure above, the bulbs can be painted with the color of user's choice.



The export animation dialog box, with stop-motion customization feature, is shown in the above snapshot.

USER FEEDBACK

User feedback aids in receiving significant pointers from the intended users. Since the user group was a wide spectrum, I took into consideration the two extremes.

1.*An expert user*, who has been in the animation industry for quite some time and adept at using the latest animation tools.

2.*A novice user*, who animates just to explore and enjoy. He has not much idea about many modern tools available for animation.

Both the users were given a run through the entire tool, and then they were left to respond. The following are some of their feedbacks...

SIMPLE INTERFACE

INNOVATIVE TOOL-BOX IDEA

LACK OF 3D SUPPORT

POSSIBILITIES UNVEILED TO SOME EXTENT

SCOPE FOR FURTHER IMPROVEMENT

PROSPECTS

There are certain features which makes this concept-tool stand out from the existing animation tools.

MODERATED REALISTIC PLANE PARAMETERS

A realistic surface with parameters like surface noise, looseness, grain size, density, viscosity etc. that can be controlled, thereby affecting the response of the surface to various tools.

CONFORMATION TO SURFACE CONTOURS

Shapes or motion trajectories can be conformed to the surface. The shapes can also blend in with the surface, if required.

FAMILIAR TOOL0SETS WITH NOVEL APPLICATIONS

The tool-sets have been designed keeping in mind the popular ones. Simple icons have been employed to aid the same.

POSSIBILITY TO DELIVER A VARIETY OF ANIMATIONS

With such a variety of tools and surfaces, the scope of animations possible is tremendous.

PROSPECTS

EASY & INTELLIGENT INTERACTION

The surface-shape interaction takes in consideration, the nature of the surface. The method used to make them interact is kept easy on the users.

STOP-MOTION ANIMATION CUSTOMIZATION

This tool provides for controlling frame alternation, i.e the user can decide what number of frames to be dropped after each frame.

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