Cuttle

Cuttle (cuttle.xyz), released in July 2021, is a web-based app for producing intricate designs for laser and blade cutting. Those familiar with Adobe Illustrator, Inkscape, and other vector-based design applications will recognize many similar tools and functions.

The idea for Cuttle was inspired by the need to create interactive art, which initially came to be known as *Apparatus* (http://aprt.us), a web application. Apparatus matured into the eventual form of Cuttle when it was developed for the creation of **Sun Seeds** (https://www.indiegogo.com/projects/sun-seeds/#/), which are color-changing sculptures composed of interlocking laser-cut pieces. These pieces, which resemble flower blossoms, required a great number of variations, all of which were easily, and quickly, generated with Cuttle.

Cuttle, developed by Toby Schachman and Ryan Alexander, is truly unique, since it is not only a highly editable and manipulable vector drawing program, but a sophisticated environment for creating customizable templates that can be used, by themselves, as unique design spaces for the production of user-inspired laser-cut objects. The application "is essentially a computer program that generates a design."

Among its most powerful features are Live Modifiers. Live Modifiers, which are non-destructive, and therefore editable, and work in real-time, basically enable the user to repeat a design, and modify it in a variety of interesting ways. Among the ways that designs can be modified are by the use of *parametrics*. Parameters, for values such as dimensions, angles, and material thicknesses, etc. can be controlled easily, and reflected instantly in a design. The designer is able to make any change and see it appear on-screen right away. Parameters can be set using the graphical user interface, or with scripting. Users who are familiar with writing JavaScript can create their own custom modifiers. In addition, Cuttle supports a user community wherein users can share their programming successes (FIG. 1, 5).
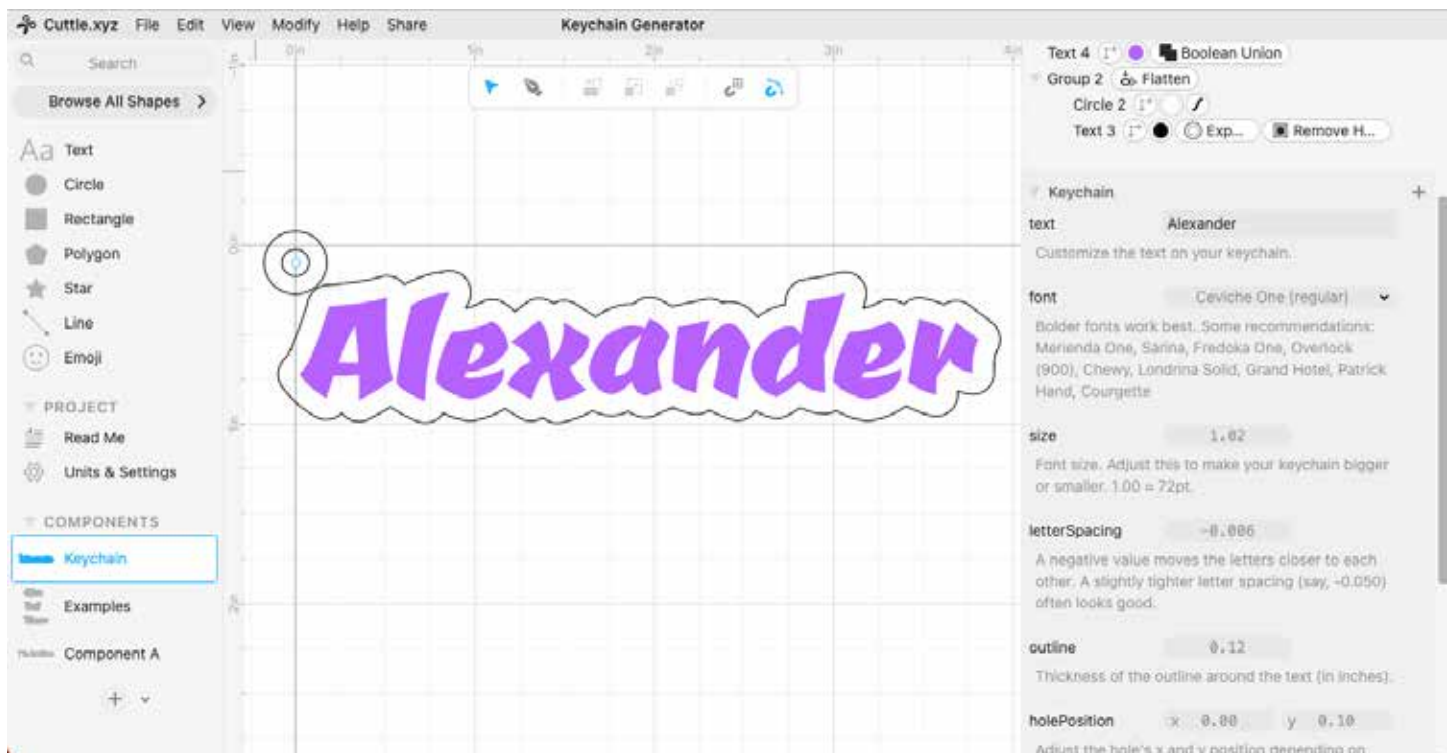

FIG. 1. The Keychain Generator is one of many Cuttle projects submitted by users for free use by others. The user can modify keychain parameters, such as text, font, size, letterspacing, outline, hole position, and more.

In addition to the many shapes that are provided with the program (FIG. 2), users are also able to incorporate SVG or other image files into a design. Imported graphics can be manipulated using many of the tools in the Modify menu (FIG. 3, 4).
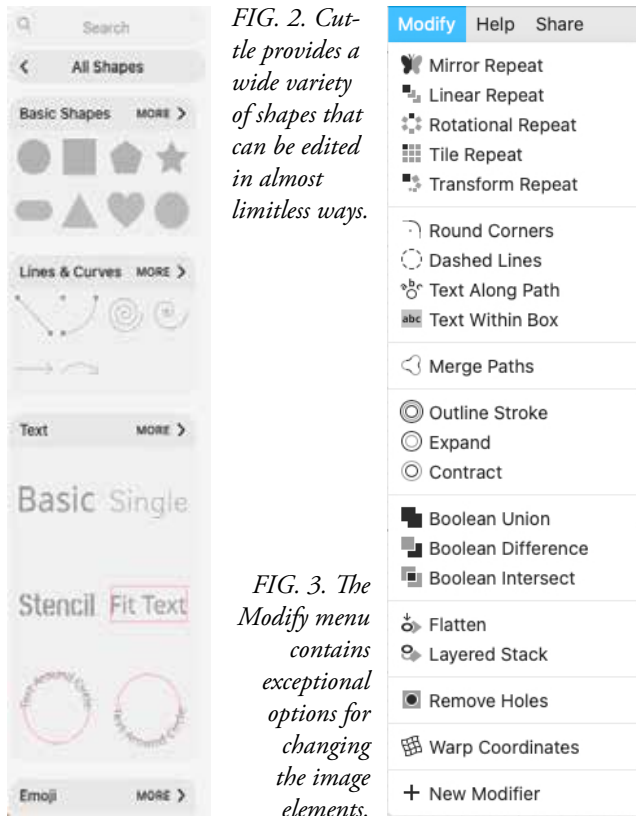
Another compelling feature of Cuttle is Reusable Components, which endow each shape with the capability to be reused again and again within a project. When any part of a component is edited, the changes are updated immediately in all instances of that component.

New users begin by selecting New Project from the Cuttle home page. Next, shapes from the left sidebar are dragged and dropped onto the workspace canvas. From there the possibilities are virtually endless.

Cuttle provides a number of generators in the form of customizable templates. By using one, a user can quickly, and almost effortlessly, create a keychain, hinged lid box, jigsaw puzzle, name tag, and more.

Files produced in Cuttle can be exported in .SVG format, ready to import into LightBurn or another laser or plotter application.

Cuttle is free for the casual user, for personal use only, providing for the creation of up to five free projects, and ten downloads per month. The professional paid version, Cuttle Pro, provides full access, with unlimited projects and downloads, plus the capability to upload .JPG and .PNG images, upload user fonts, organize projects in folders, and use for commercial purposes.

FIG. 2. Cuttle provides a wide variety of shapes that can be edited in almost limitless ways.

FIG. 3. The Modify menu contains exceptional options for changing the image elements.

FIG. 4. The user can import graphics as part of their Cuttle design.

Keychain Generator [FREE]

A laser cut keychain dangle. Type your own text. Customize the font, sizing, and key ring hole placement.

Emoji Keychain [FREE]

Like the text keychain generator but with an emoji of your choice. Customize the size, outline, and key ring hole placement.

Open Box with Finger Joints [FREE]

This laser cut box is held together by press-fit finger joints. Customize the dimensions and material thickness.

Closed Box with Finger Joints [FREE]

Customize the dimensions and material thickness of this press-fit box. Add more holes to make an enclosure.

Hinged Lid Box [PRO]

This box has a lid that swings on the built in hinges. Customize the dimensions, material thickness, and sizing.

Sliding Lid Box [PRO]

Make a box of any size with a lid that slides into an engraved slot.

Heart Shaped Box [PRO]

A heart shaped jewelry box. Customize the overall size, height, and material thickness. Three decorative lid designs are included, or create your own.

Jigsaw Puzzle [FREE]

Generate a custom wooden jigsaw puzzle! Pick your own photo or artwork and customize the number of puzzle pieces and piece size.

Name Snowflake Ornament [FREE]

Generate a custom snowflake ornament from a name or word. Customize the text, font, and look. The design includes a hole on top for hanging!

Walking Man Automaton [FREE]

Make this kinetic toy of a walking person out of laser cut plywood and paper. The base works like a finger-joint box so you can measure your plywood and change the material thickness and kerf to get a nice press fit. Assembly video included.

Name Tags [FREE]

Type your own text to generate laser engravable name tags. The text will auto-scale to fit for longer names.

Garden Markers [FREE]

Type your own text for these laser cut garden stakes.

Custom Envelope Maker [FREE]

Create paper envelopes of any size.

Connected Text [FREE]

Connect text together so that it can be cut out in one piece. Dots on i's are automatically joined, letters are pressed together, and so on. It works instantly and you can use any font!

Engrave Depth Tester [FREE]

Find the perfect settings for when you need to laser engrave down to a specific depth.

FIG. 5. A variety of free ready-to-use templates contributed by members of the Cuttle community.