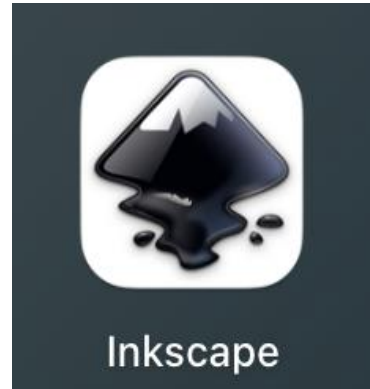


Laser-cutting - Wooden Bookmark



Flux Laser-cutting
Machine
Hardware



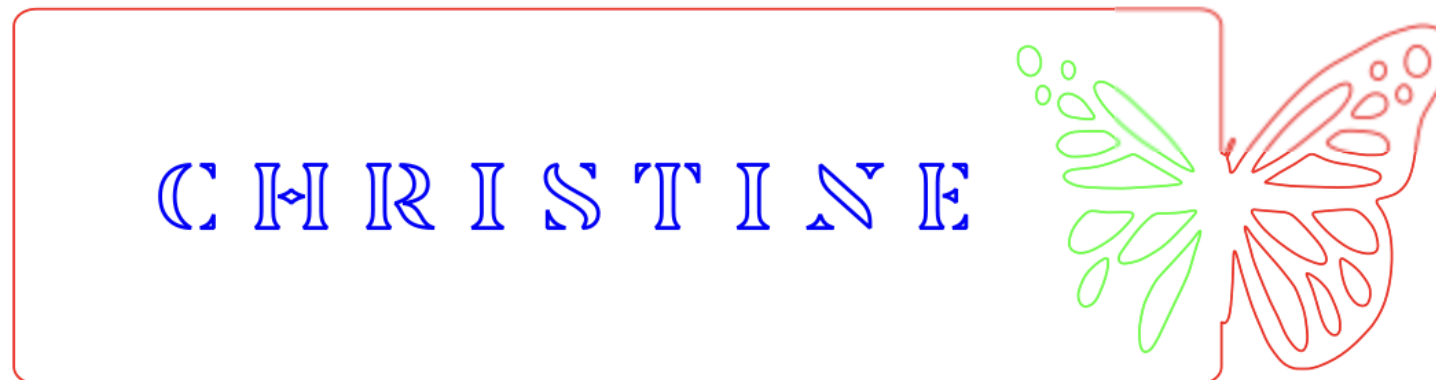
Inkscape
Software



Plywood
Materials

Laser-cutting - Wooden Bookmark

Final Design



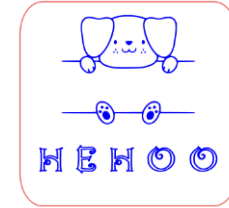
Laser Cutting Operations

Scoring

In laser cutting, scoring is a technique that creates shallow lines on the surface of a material without cutting all the way through.

Stroke paint: Blue stroke (RGB 0,0,255), no fill

Used with outlined texts and outlined images



Cutting

In laser cutting, cutting is the process of slicing completely through the material to create shapes or separate pieces. Cuts can be **outer cuts** or **inner cuts**:

- Outer cuts define the final shape of the piece.
- Inner cuts remove sections inside the design, such as holes, patterns, or decorative shapes.

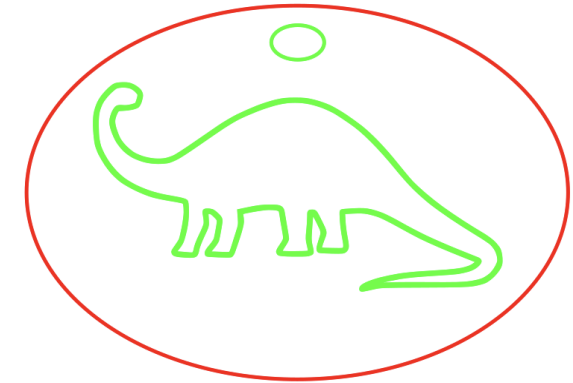
Stroke paint:

- Outer cut: **Red stroke (RGB 255,0,0), no fill**
- Inner cut: **Green stroke (RGB 0,255,0), no fill**

Cutting order:

The machine is configured to cut inner shapes first before cutting the **outer shape**.

This prevents the piece from moving once it's fully cut out, ensuring accuracy for all inner details.



Inkscape Basics Tools And Concepts

◆ Layers & Objects Panel



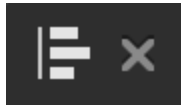
- **What it does:** Organises design parts into separate layers, and lets you manage each object individually.
- **How to access:** Top Menu → Object → Layers and Objects ... (or press **Shift + Command + L**)

◆ Fill And Stroke Panel



- **What it does:** Sets inside color (fill) and outline (stroke) for objects.
- **How to access:** Top Menu → Object → Fill and Stroke... (or press **Shift + Command + F**)

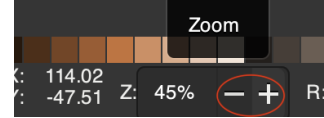

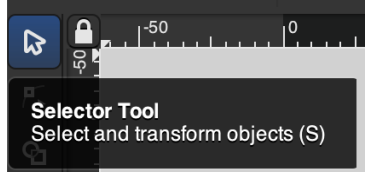



◆ Alien And Distribute Panel



What it does: Positions objects precisely relative to each other or to the page, and evenly spaces them.

How to access: Top Menu → Object → Align and Distribute...(or press Shift + Command + A)

Inkscape Basics Tools And Concepts

Zoom in Zoom out	Plus sign + Minus Sign - 
Zoom to page	5 key 
Selection Tool	<p>What it does: Selects and moves objects in the document. Once an object is selected, arrows (handles) appear around it.</p> <ul style="list-style-type: none"> • Single arrow handles → appear first, allow you to resize and move the object. • Click the object again → the arrows change to curved rotation handles, letting you rotate or skew the object. 
Undo/Redo	<p>Undo: Command + Z key</p> <p>Redo: Shift + Command + Z key</p> 
Padlock tool	<ul style="list-style-type: none"> • If the padlock is locked (closed) → resizing will scale the object proportionally. • If the padlock is unlocked (open) → you can stretch or squish the object freely by changing only width or height. 
Hide/Unhide	To hide or show individual objects 

Starting the Bookmark Design

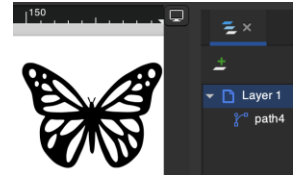
1. Download the Butterfly SVG

- Go to <https://scriptfairy.github.io/bookmark> and download the butterfly SVG file to your computer.




2. Import into Inkscape

- Open a new Inkscape document. Go to **Top Menu** → **File** → **Import...**
- Find the butterfly SVG and click *Open*. Look under the Layers and Objects panel. You will see that a new path has been added to the document, which is the imported butterfly SVG.

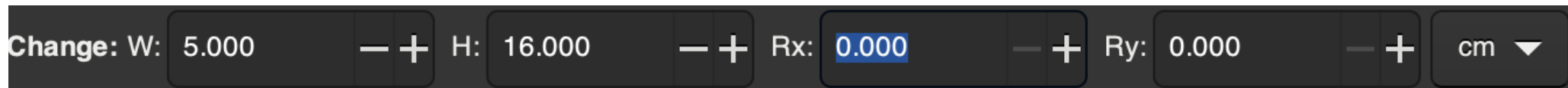


3. Draw the Rectangle (Bookmark Shape)

- Select the **Rectangle Tool** from the toolbox and draw a rectangle. 
- In the top bar, set **W (Width)** and **H (Height)**. Wooden bookmarks typically range in size, but a common dimension are:
 - 12 cm x 3 cm
 - 15 cm x 5 cm
 - 16 cm x 5 cm

Choose the size you prefer.

- Adjust units to **cm**.



Apply Stroke Settings

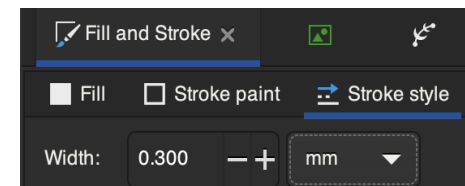
- With the rectangle selected using the **Selection Tool**  open the **Fill and Stroke panel**. 
- **Fill tab:** Click the **X** to remove fill.



- **Stroke paint tab:** Select **RGB** and set stroke to **Red (255, 0, 0)**.
- **Stroke style tab:** Set width to **0.3 mm**.



- ✓ Result: You should now have a **red outlined rectangle** with no fill – this will be the bookmark shape.




Rounded Corners on the Rectangle

Optional Step

We are going to turn sharp rectangle corners into smooth, rounded corners – perfect for bookmark shapes.

How to do it:

Select the rectangle with the Selection Tool 

Switch to the Rectangle Tool (R) 

Notice a small circular corner handle appear in the top-right corner of the rectangle.



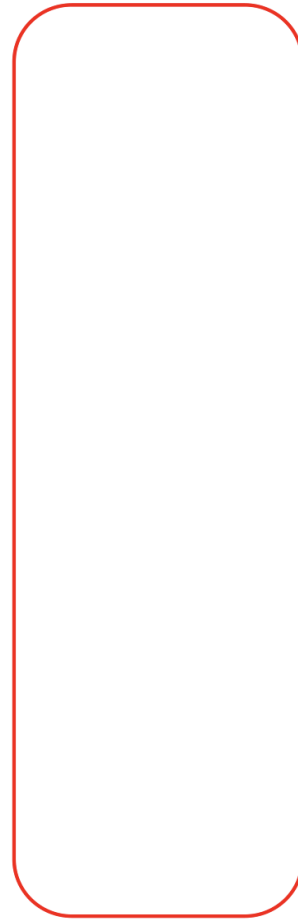
Drag the circular handle inward to round all corners evenly.

For precise control, adjust Rx (horizontal radius) and Ry (vertical radius) values in the top toolbar.

- **Rx (X-radius):** Controls how much the corners are rounded **horizontally**.
- **Ry (Y-radius):** Controls how much the corners are rounded **vertically**.



Rectangle with Round Corners



Preparing the Butterfly

Next we convert the butterfly design into a laser cutting outline by removing the fill and applying the correct stroke settings.

Apply Stroke Settings

- Select the butterfly with the **Selection Tool (S)**.
- Open the **Fill and Stroke panel** (*Top Menu → Object → Fill and Stroke...* or press **Shift + Command + F**).
- Under the **Fill tab**, click **X** to remove the fill.
- Under the **Stroke paint tab**, set stroke color to **RGB = (255, 0, 0)** (red).
- Under the **Stroke style tab**, set the width to **0.3 mm**.

✅ Result: The butterfly should now appear as a **red outline** with no fill – ready for laser cutting.



Rotating the Butterfly

Rotates the butterfly design so it fits neatly inside the bookmark shape.

How to do it:

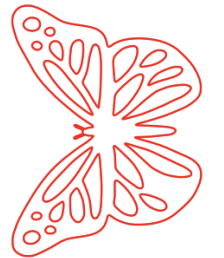
Select the butterfly with the Selection Tool (S).

Go to **Top Menu → Object → Rotate 90° CCW or Rotate 90° CW**.

CCW = Counterclockwise, CW = Clockwise



✅ Result: The butterfly is rotated by 90° in the chosen direction and is ready to be placed inside the rectangle.



Positioning the Butterfly on the Bookmark

Place the butterfly so that half of it is inside the rectangle (on the shorter edge) and half is outside, creating a decorative cut-out effect.

1- Make sure the padlock of the butterfly is locked  because you will need to resize it soon.

2- Select the butterfly with the Selection Tool  and click and drag the butterfly toward the **top short edge (5 cm side)** of the rectangle. You might want to resize the butterfly while you doing this step.

This step is optional

How to vertically centered the butterfly (precise positioning with Align and Distribute):

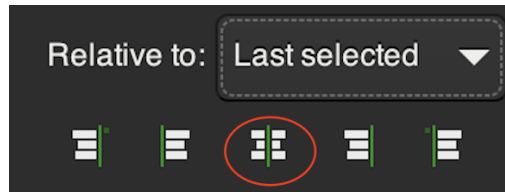


1- Open the Align and Distribute: **Top Menu** → **Object** → **Align and Distribute...** Or press **Shift + Command + A**

2- Select both the **rectangle** and the **butterfly**. But make sure you select the butterfly first then click on Shift key and select the rectangle. The order of selection is very important.

3- In the panel, under **Relative to**, choose **Last Selected** (make sure the rectangle is selected last).

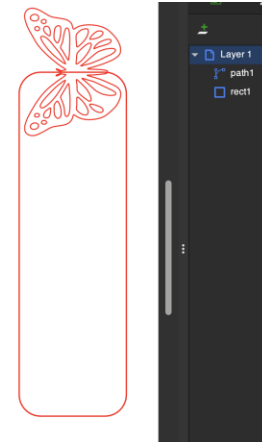
Click Center on vertical axis to align the butterfly exactly to the rectangle's vertical centre.



Organising the Design in Layers & Objects

What it should look like so far:

- **Rectangle:** an outlined rectangle with a **red stroke** (no fill).
- **Butterfly:** an outlined butterfly with a **red stroke** (no fill).



Duplicate the Butterfly:

1- Select the butterfly object with the Selection Tool.

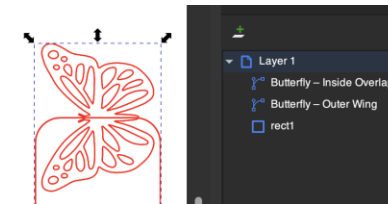
2- Duplicate it by pressing **Command + D (Mac)** or **Ctrl + D (Windows)**. This creates an exact copy on top of the original.

Open the **Layers and Objects** panel: **Top Menu** → **Object** → **Layers and Objects...** Or press **Shift + Command + L**.

In the panel, rename the two butterfly objects so they're easy to manage:

Butterfly - Inside Overlap (the half that overlaps with the rectangle).

Butterfly - Outer Wing (the part that extends outside the rectangle).



 **Tip:** Renaming objects in the panel keeps your design clear and makes the next cutting/scoring steps easier to follow.

Preparing the Butterfly - Inside Overlap

Step 1:

Select the **Butterfly - Outer Wing** object and **hide it** using the **eye (hide/show) icon** in the **Layers and Objects panel**. This makes it easier to work on the **Butterfly - Inside Overlap** object

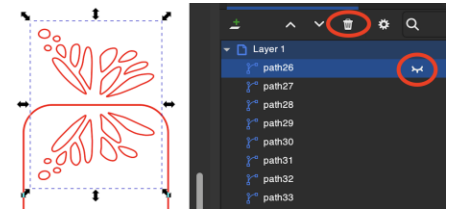


Step 2:

Select **Butterfly - Inside Overlap** → Top Menu → **Path** → **Break Apart**. This separates the butterfly into many smaller paths.

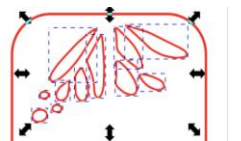
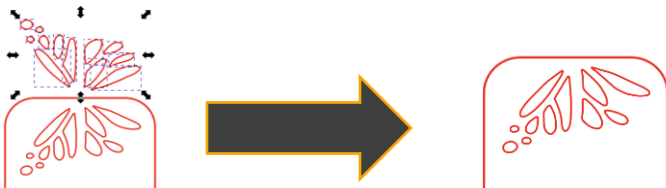
Step 3:

Select **the first path** that appears. Use the **hide/unhide eye icon** to check if it is just the outer outline of the butterfly. Delete it by clicking the **Delete icon** in the top panel.



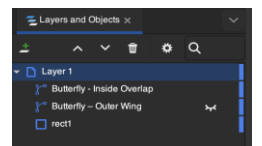
Step 4:

With the **Selection Tool**, select all the wing pieces that extend outside the rectangle. Press the **Delete icon** to remove them. Now only **half of the butterfly (inside the rectangle)** remains.



Step 5:

Select all the leftover wing paths → Top Menu → **Path** → **Union** to merge them into one shape. Rename the object back to **Butterfly - Inside Overlap**.

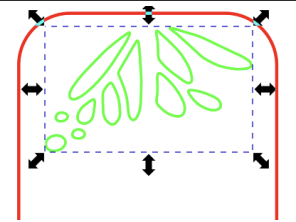


Decide to Cut or Score the Half Wing


Now that the **Butterfly - Inside Overlap** is ready, you need to choose whether it will be **cut** or **scored**.

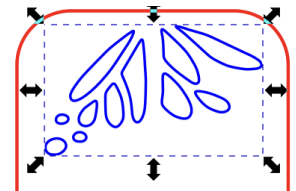
Option 1 - Cut


- Select **Butterfly - Inside Overlap**. Open the **Fill and Stroke** panel.
- Change the **stroke colour** to **Green (RGB = 0,255,0)**.
- ☒ *Green is always used for inside cuts.*






Option 2 - Score

- Select **Butterfly - Inside Overlap**.
- Open the **Fill and Stroke** panel.
- Change the **stroke colour** to **Blue (RGB = 0,0,255)**.
-  *Blue is always used for scoring lines.*



 **Tip:** Make sure the **fill is removed** (no fill) so only the stroke colour shows.

Colour Legend for Laser Cutting

-  **Red** → Outer Shape / Outline Cut
-  **Green** → Inside Cuts
-  **Blue** → Score Lines



Merging Butterfly - Outer Wing with Rectangle

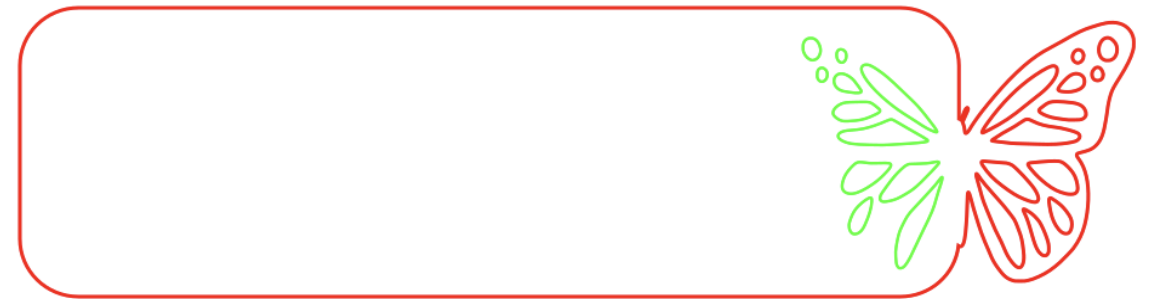
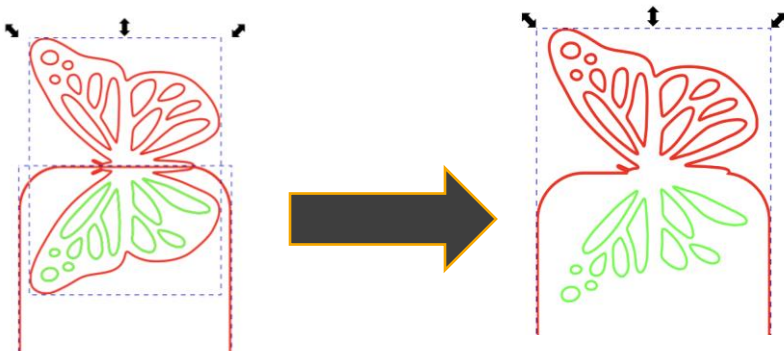
Combine the rectangle and the butterfly's outer wing into one continuous path. This ensures the butterfly is seamlessly attached to the bookmark edge.

Steps:

- Make **Butterfly - Outer Wing** visible by clicking the **Hide/Unhide** icon.
- Select both the **Butterfly - Outer Wing** and the **Rectangle**.
- Go to **Top Menu** → **Path** → **Union**.

The two objects will now merge into **one path**.

💡 **Tip:** After Union, rename the object clearly (e.g., *Bookmark*), so it's easier to identify later.





Adding Text to Your Bookmark

Steps:

- Select the **Text Tool (A)** and type a name or word on the bookmark.
- Position the text where you'd like it to appear.

Choose a font:

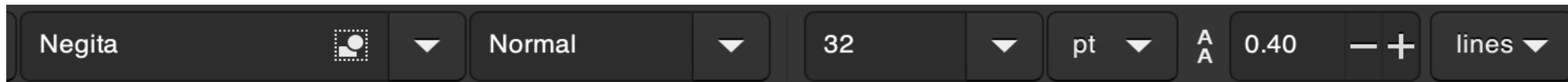
- ☒ For **cutting** → use a stencil font (e.g., **Belladonna Stencil**, **Casa**, **Negita**). Green stroke RGB (0,255,0)
- ☒ For **scoring** → any font is fine. Stroke colour is Blue RGB (0,0,255)

Convert Text into a Path

- Once happy with your text → **convert it to a path**:
- Select text → **Top Menu** → **Path** → **Object to Path**
- For cutting make the stroke **green** colour. For scoring make the stroke **blue**.

⚠ Important

- While text is still editable (Text object not Path object), you can adjust font type, font size, spacing, and other text properties from the top menu bar in Inkscape.
- Once you convert text to a path, these options will no longer be available.



Final Step

- **Select all objects** (rectangle, butterfly, and text).
- Group them: **Top Menu** → **Object** → **Group**.
- Save your design: **File** → **Save As** → **YourName.svg**.
- **AirDrop** the file to the iMac connected to the **laser cutter**.

More Bookmark Templates

You don't need to start from scratch every time!

Visit this page to explore **ready-to-download SVG bookmark templates**:

scriptfairy.github.io/bookmark/templates.html

Great starting point if you want quick results or extra inspiration!





Key Notes

✦ Always convert text to path before saving your file for laser cutting.

Laser cutters only understand shapes (paths), not text.

If left as text, the cutter cannot cut or engrave it because the font information is on your computer, not the cutter. Converting text to path transforms each letter into a shape made of nodes and lines.

Guarantees your design looks the same on any machine (no missing fonts).

✦ Group Before Saving

Select all → **Object** → **Group**. Keeps your design together (no pieces floating away).

✦ Save in Correct Format

Save as **Plain SVG** (not Inkscape SVG) to avoid machine errors.

✦ Stencil Fonts for Cutting ✂

If the text is meant to be **cut out** of the material, always use a **stencil font** (e.g., **Belladonna Stencil, Casa, Negita**). Why? Because stencil fonts have built-in “bridges” that keep the inside parts of letters like **O, A, P, D** from falling out.