

Vertical Pango

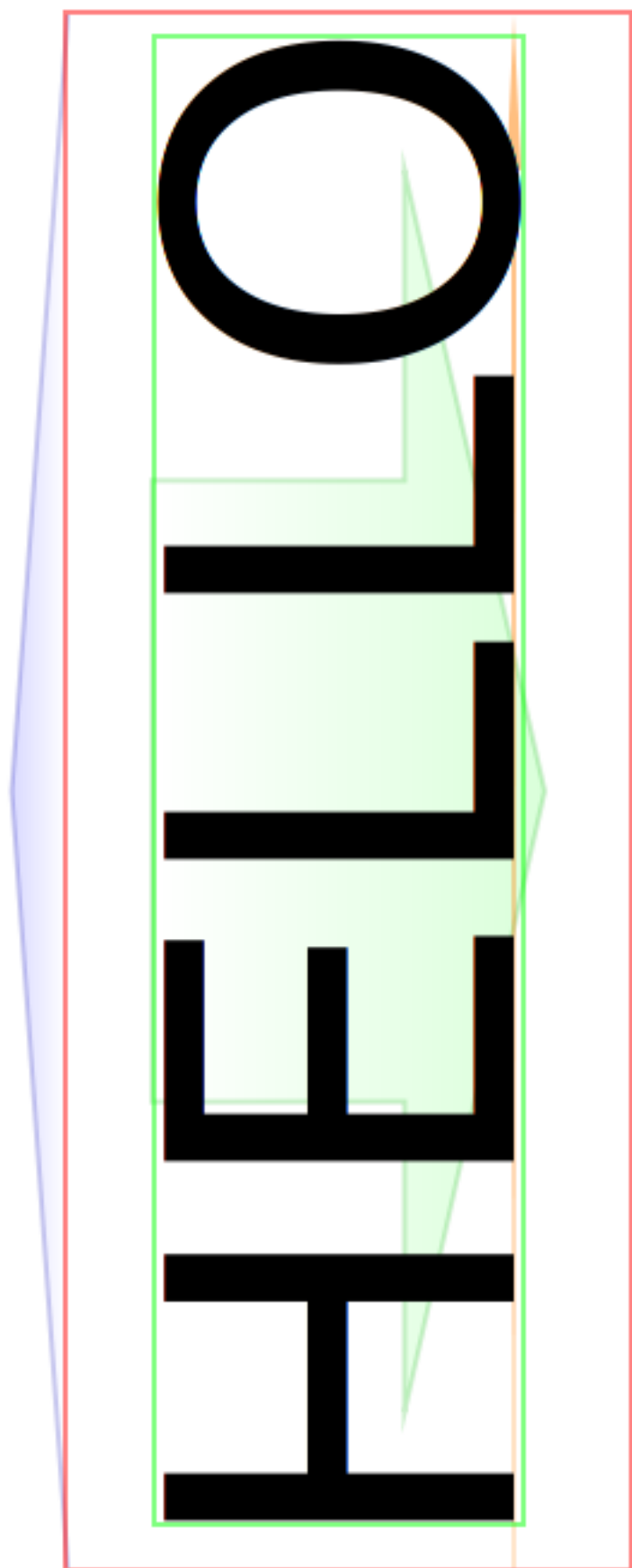
Behdad Esfahbod

joint work with

Mathrick

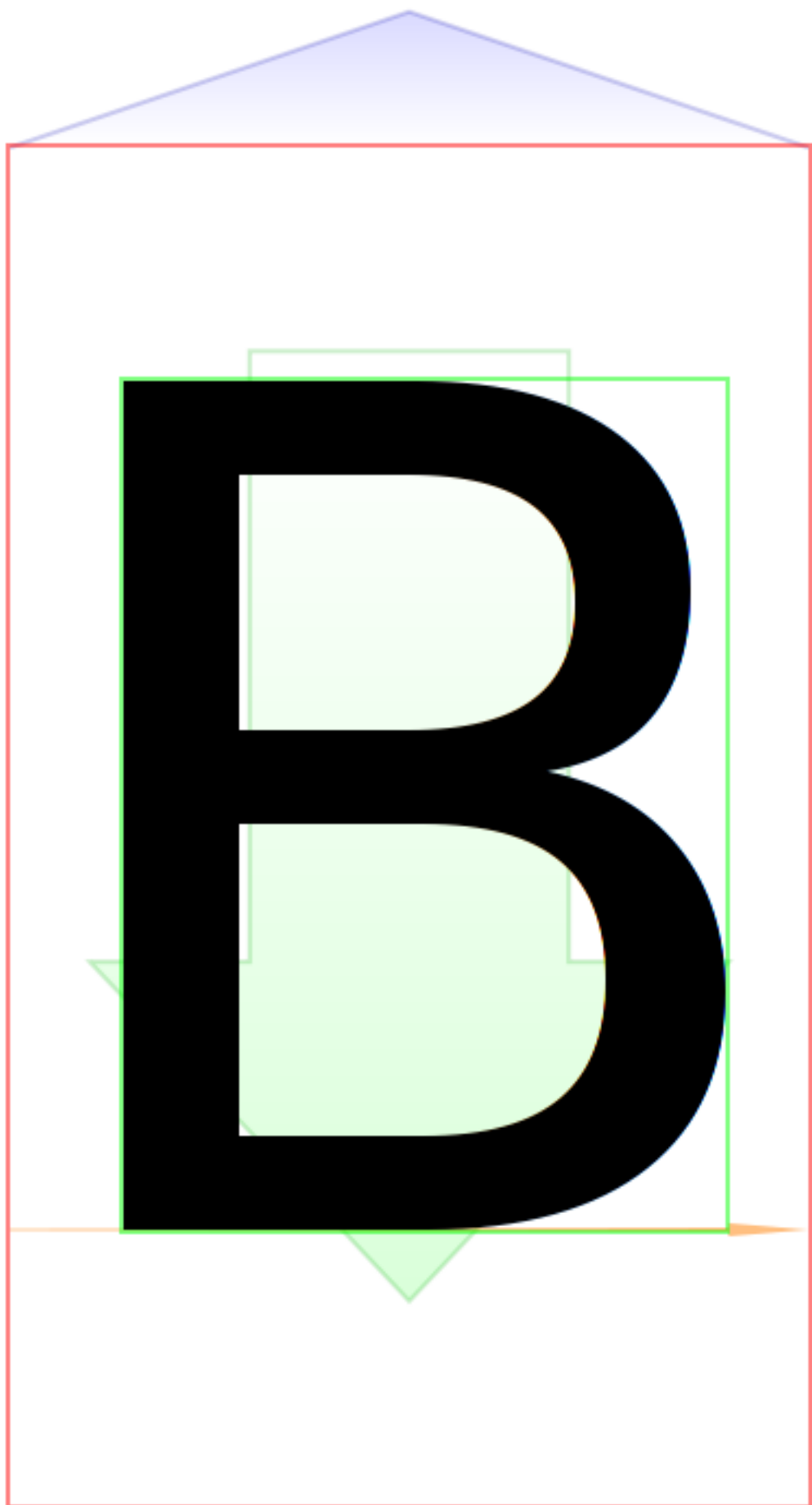
HELLO

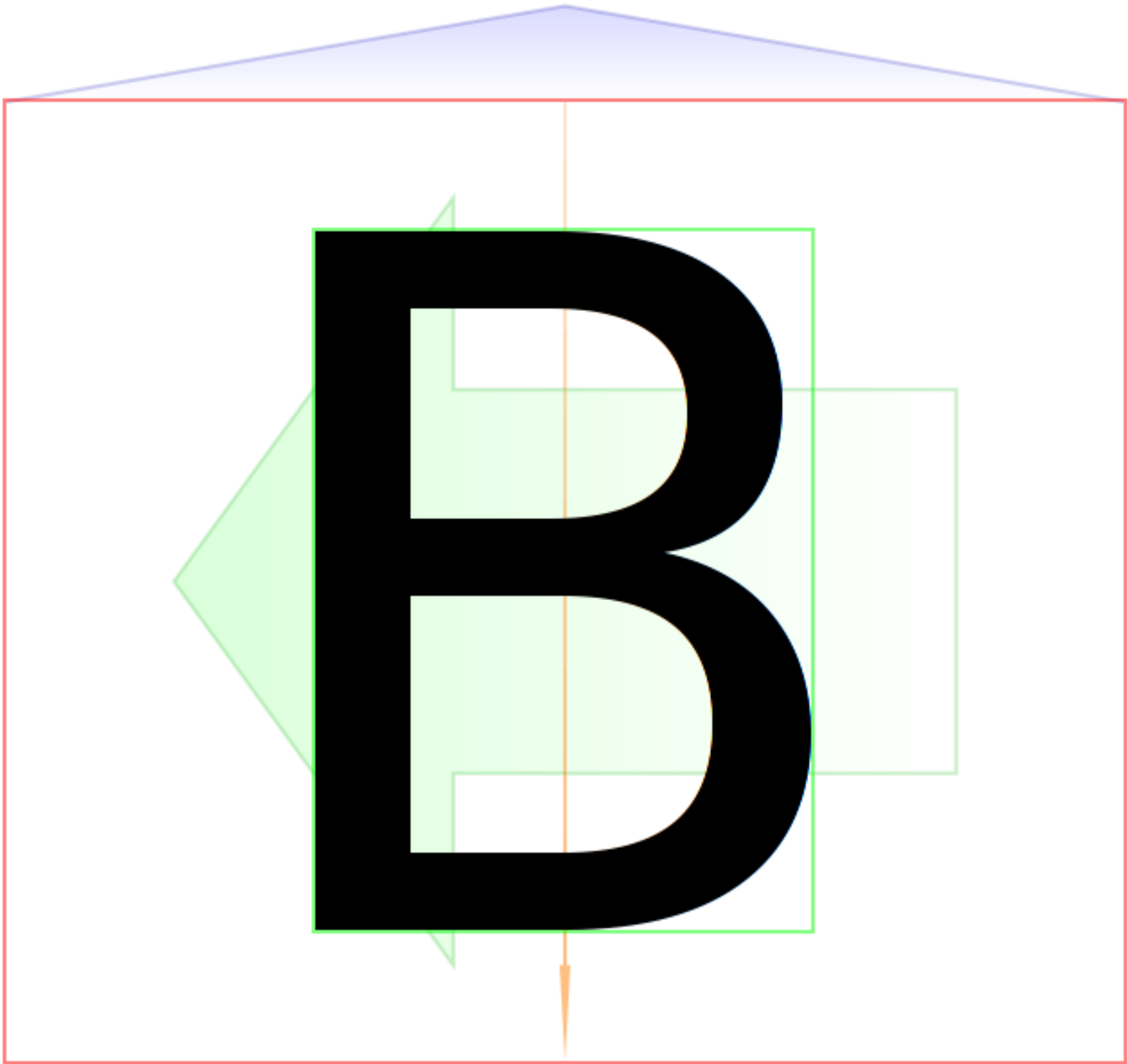
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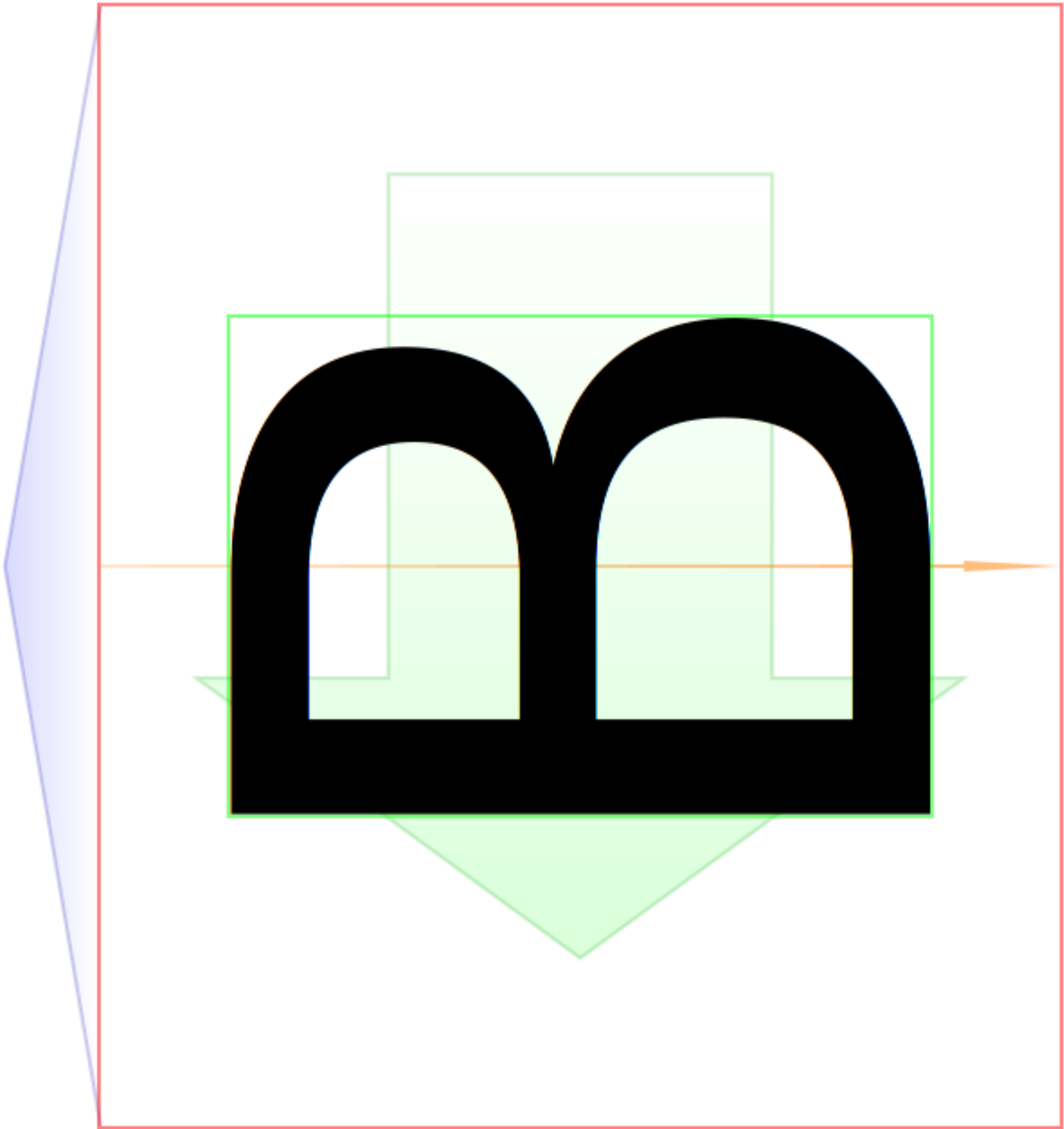


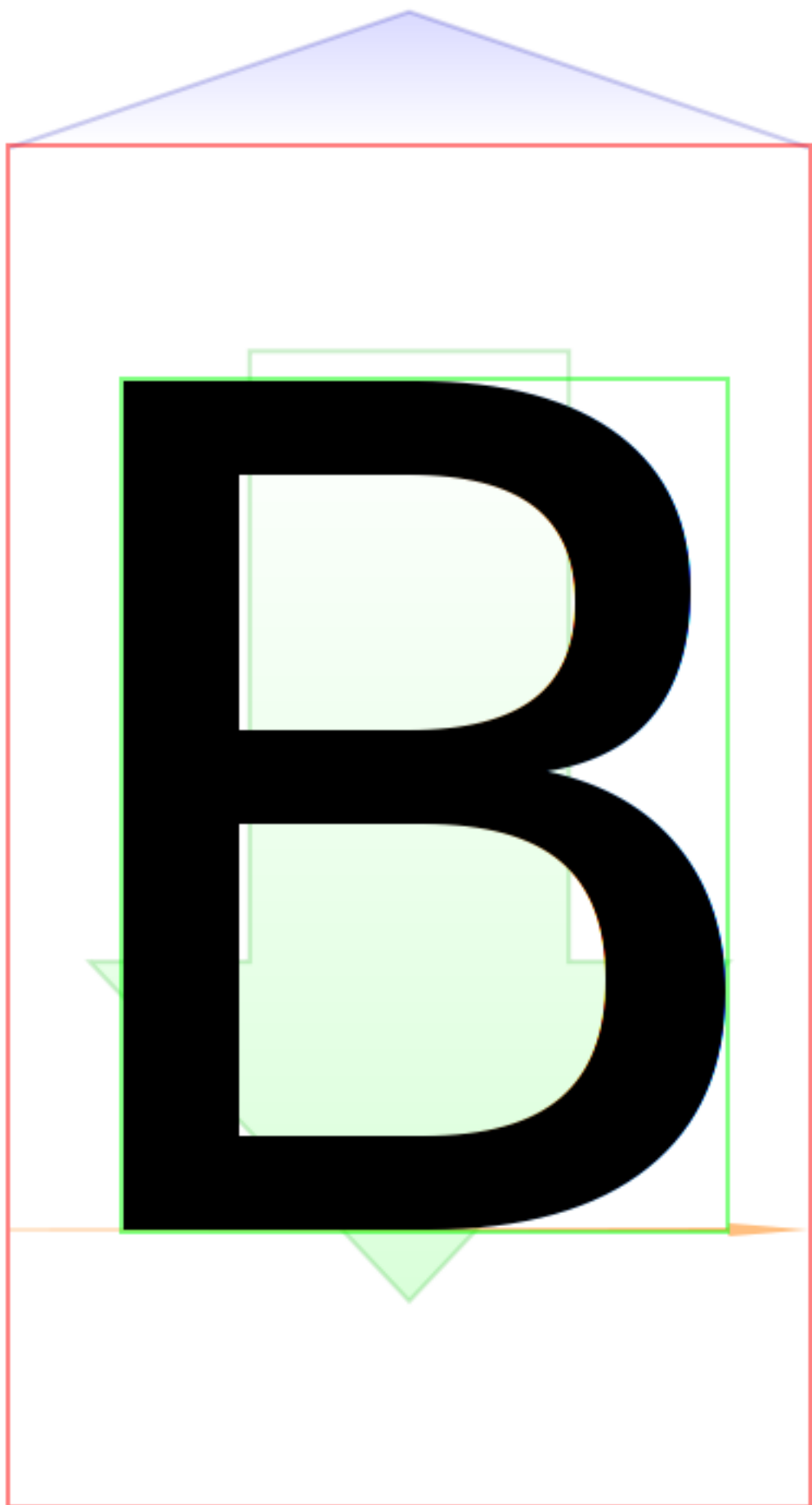
The image shows the word "ORTH" in a bold, black, sans-serif font. The word is contained within a green rectangular bounding box. This green box is itself inside a larger red rectangular bounding box. A light green shaded area highlights the top and bottom edges of the green box, and a light blue shaded area highlights the bottom edge of the red box. The word "ORTH" is centered horizontally within the red box.

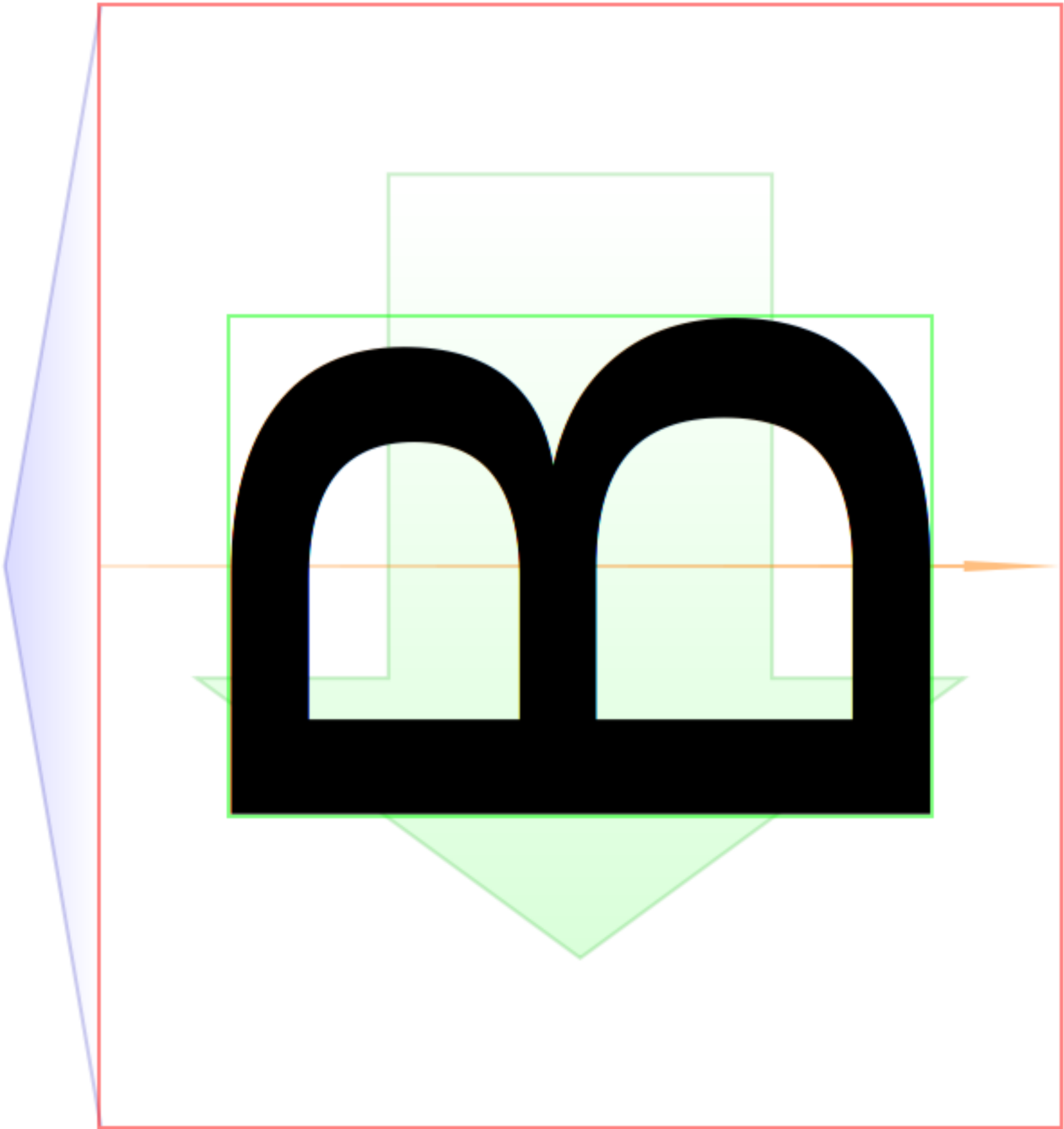
ORTH

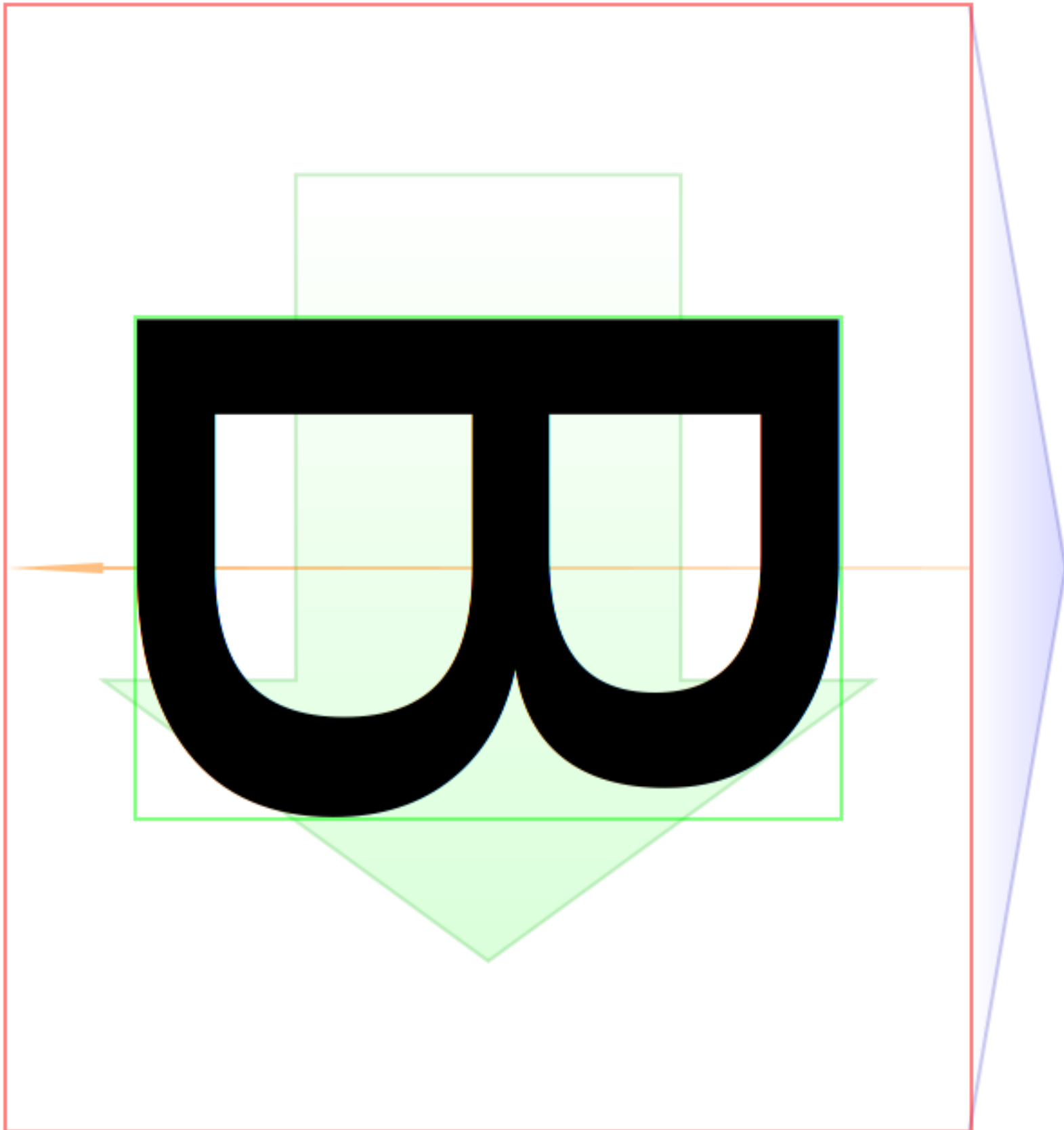


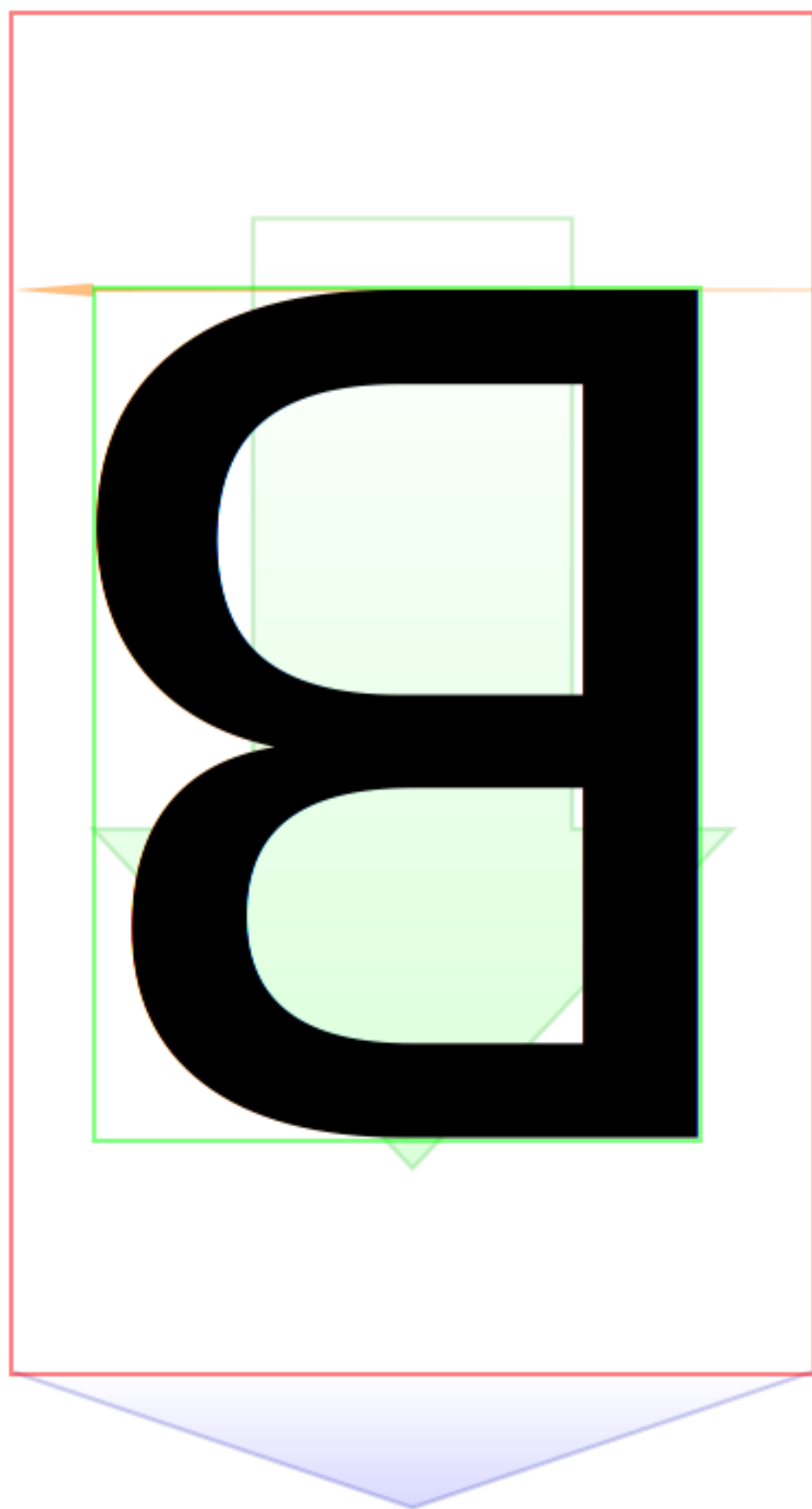




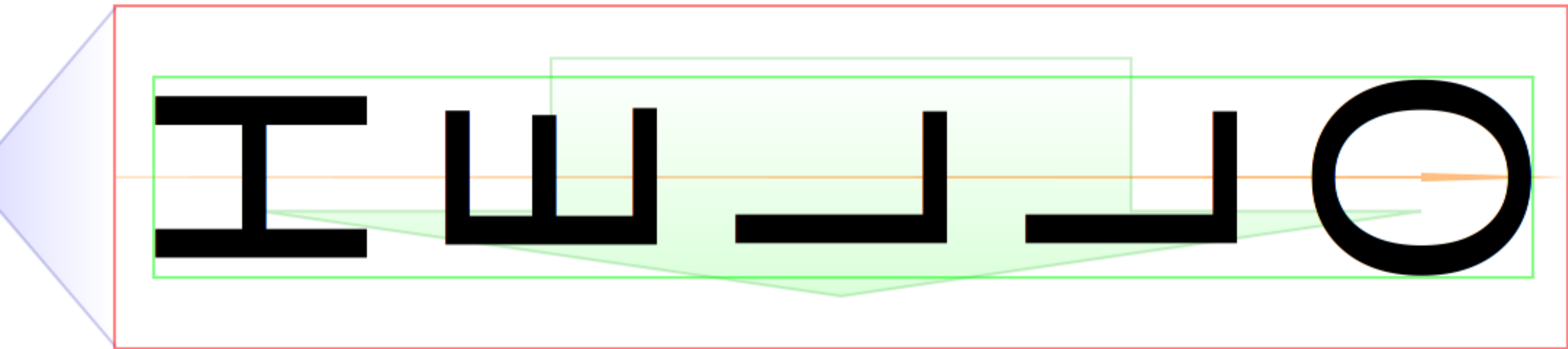


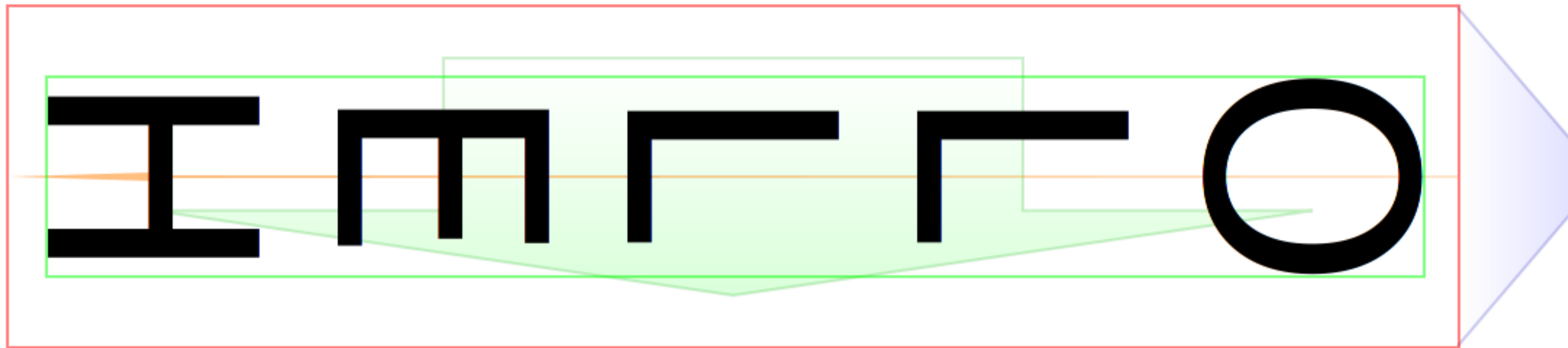




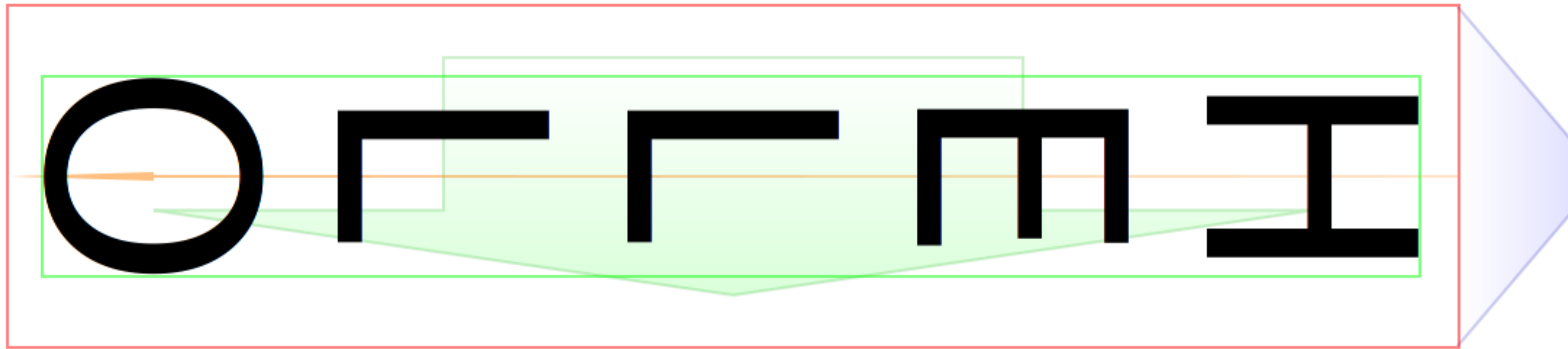


HELLO



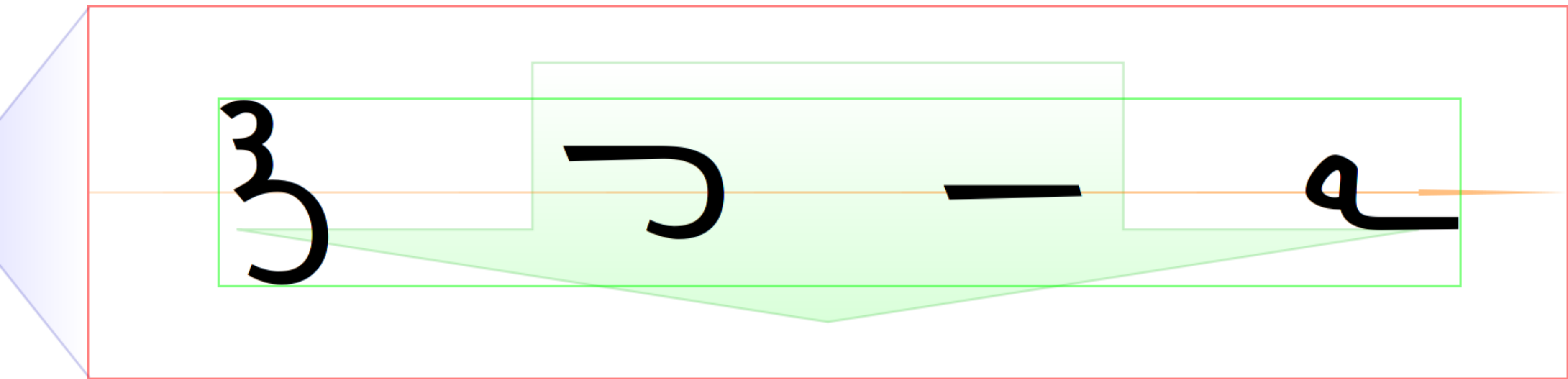


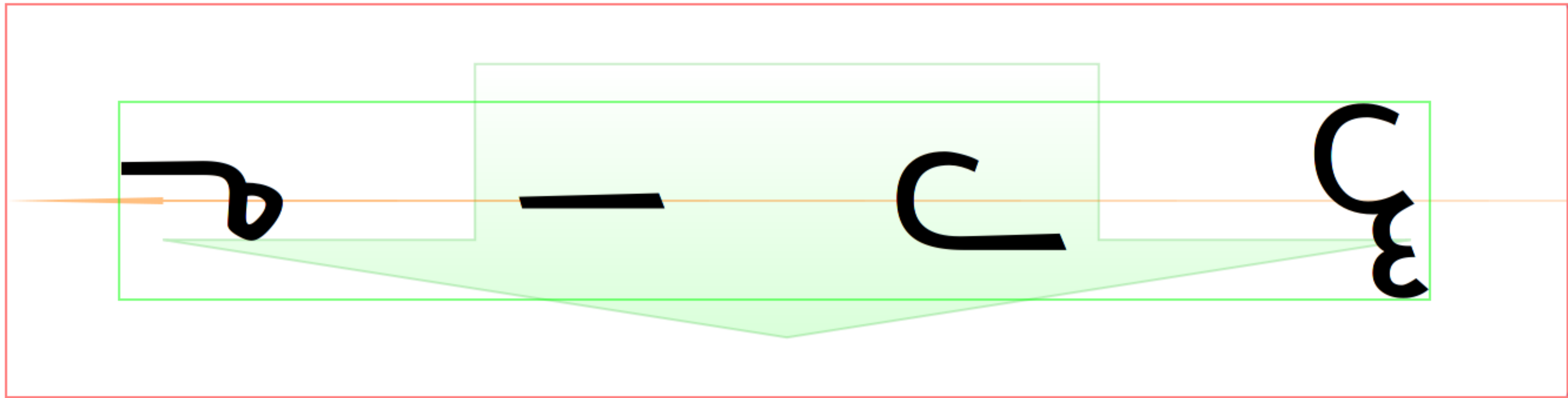
HEAT

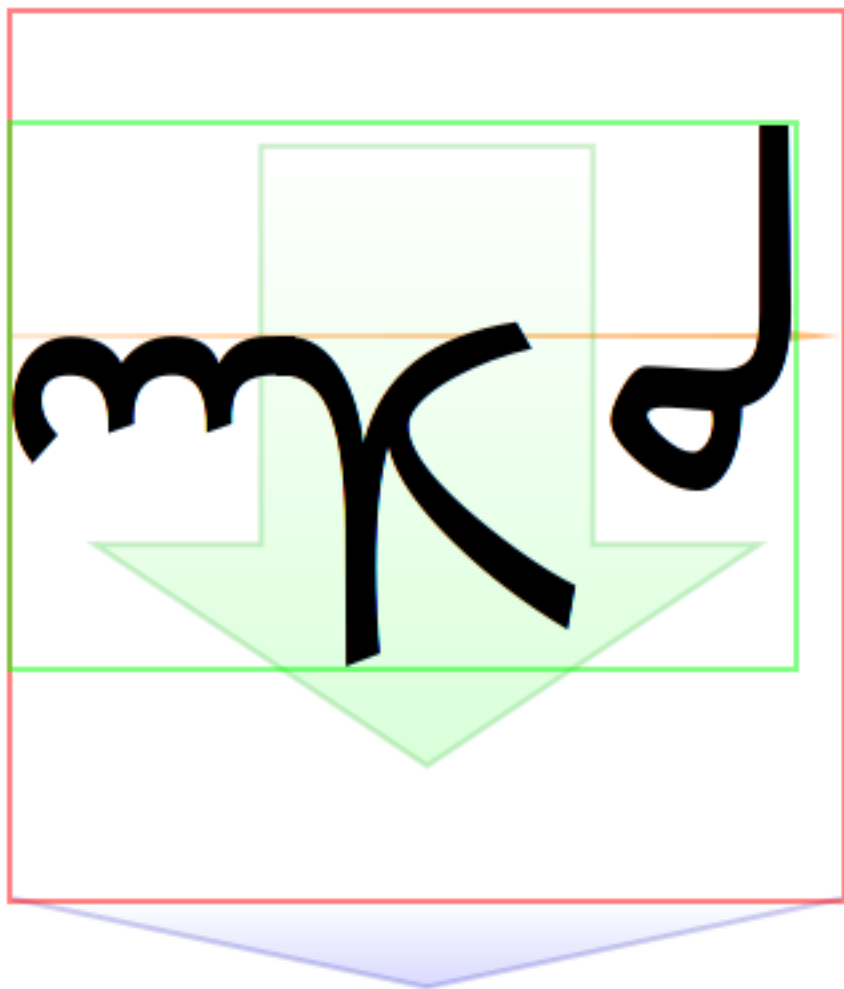



OTTEH



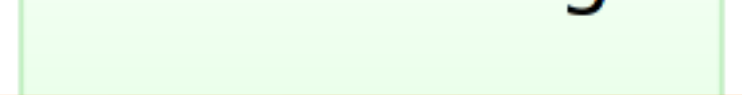








'Twas brillig, and the slithy toves
Did gyre and gimble in the wabe;
All mimsy were the borogoves,
And the mome raths outgrabe.



'Beware the Jabberwock, my son!
The jaws that bite, the claws that catch!
Beware the Jubjub bird, and shun
The frumious Bandersnatch!'

· It was brilliant, and the slithy toves

Adidgyre and gimble in the wabe;

And the mome raths outgrabe.

· Beware the Jabberwock, my son!

The jaws that bite, the claws that catch.

Beware the Jubjub bird, and shun

The frumious Bandersnatch!

Thee frumio Bannasricta
Beware the jaws that bite
Thee jawbreaker, cock
- Beware the jabberwock,
my son!

And themoments rather
did my mother rather
did my mother rather
- It was brillig, and
the sithy toves

The forum is Bander's natural habitat.
Be aware the jubjub bird, and shun
the jaws that bite, the claws that catch.
- Beware the Jabberwock, my son!
And the mome raths outgrabe.
All mimes were there, portogoves,
Did you remember in the wabe;
- Was brilliant, and the sithy loves

The frumious Bandersnatch!

Beware the Jubjub bird, and shun

The jaws that bite, the claws that catch!


'Beware the Jabberwock, my son!

And the mome raths outgrabe.

All mimsy were the borogoves,

Did gyre and gimble in the wabe;

'Twas brillig, and the slithy toves



The frumious Bandersnatch!
Beware the Jubjub bird, and shun
The jaws that bite, the claws that catch!
'Beware the Jabberwock, my son!

And the mome raths outgrabe.
All mimsy were the borogoves,
Did gyre and gimble in the wabe;
'T was brillig, and the slithy toves

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欢迎来到中国北京。

白日依山尽，

黄河入海流。

欲穷千里目，

更上一层楼。

谢谢！

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谢谢！

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Roses are Red,

Grass is Green. 2006

Arabic is گلها قرمزند،

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白日依山尽， 2006

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Grass is Green. 2006

Arabic is گدھلگہ قرمہ زرد،

پشمینہ . ۲۰۰۶

白日依山尽， 2009

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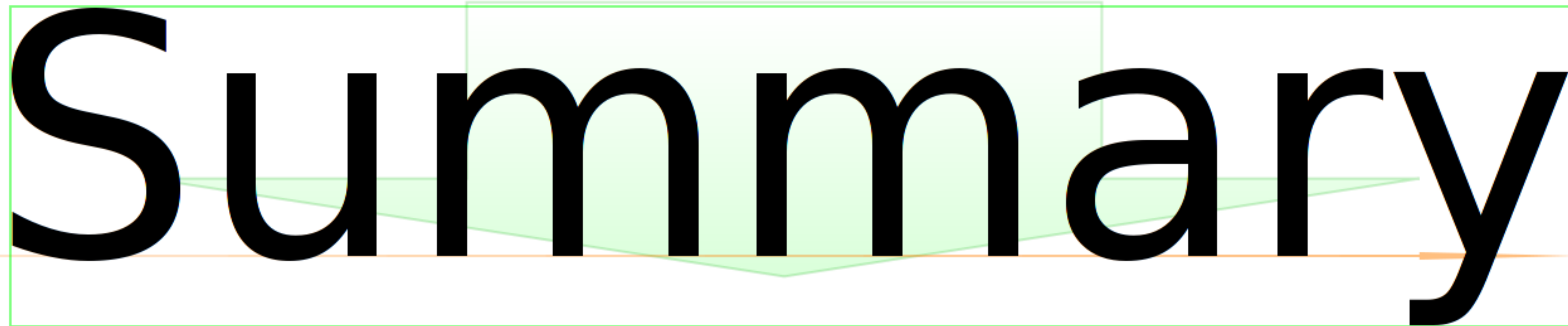
Roses are Red，

Grass is Green . . . 2002

Arabic is written from right to left

الحمد لله رب العالمين . . .

白日依山尽，2006



Summary

The word "Summary" is displayed in a large, bold, black serif font. A light green rectangular highlight is positioned behind the letters "u", "m", "m", and "a". A light blue shadow is cast above the entire word. The text is enclosed within a thin red rectangular border.

- User sets base gravity, gravity hint, and rotation on PangoContext.
- `pango_itemize` uses base gravity, gravity hint, and script information to assign a gravity to each item.
- It also uses the assigned gravity to adjust the bidi level of the item.
- and to disable shaping if its a *vertical* gravity (East or West).

- When loading fonts, `FC_VERTICAL_LAYOUT` is set for vertical gravities and `PANGO_FC_GRAVITY` is set on the `FcPattern`.
- When loading font for a `FcPattern`, adjust cairo `font_matrix` rotation to adjust for the requested font gravity.
- In cairo, if the pattern has `FC_VERTICAL_LAYOUT` set, vertical metrics are chosen.

- In `pango_shape()`, if glyph x advance is negative, negate it and shift the glyph right by that amount. (re-base the origin)
- When getting item extents and rendering runs, center the run vertically if base gravity was vertical.
- Adjust line alignment depending on gravity.

