

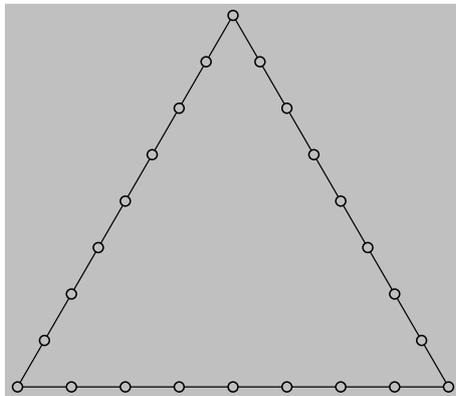
SKETCH 21: PATTERN FROM SEYIT BATTALGAZI TÜRBESİ

I have got this pattern from my Turkish friend Ayhan Uzun. It comes from Seyit Battalgazi tomb. Here is one of the photographs that I got.

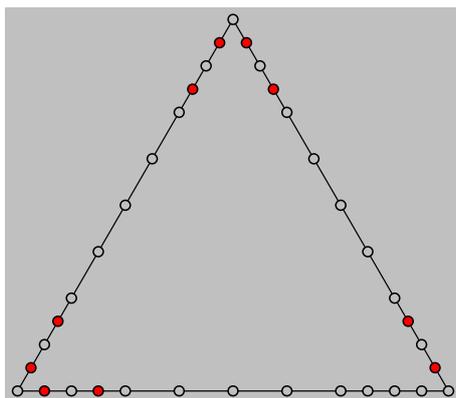


Ayhan asked me to reconstruct this pattern step-by-step. Here is shown how I reconstructed this pattern. Of course there are many ways to do it. A nice thing in this pattern is that can be reconstructed using triangular *template* (some of you call it *module*, some others *repeat unit*).

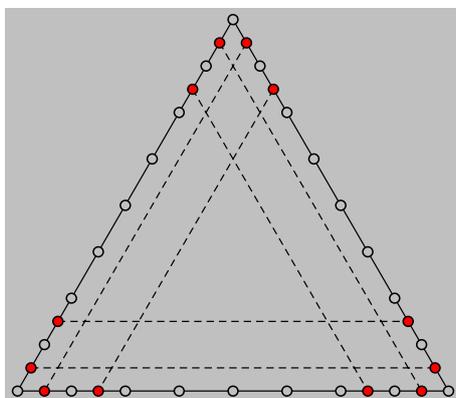
Let us start with equilateral triangle. Divide each side of it into 8 equal parts. This last task is easy – divide the side into two equal parts, then each part into two equal parts, and then each resulting part into two equal parts. We should get something like this:



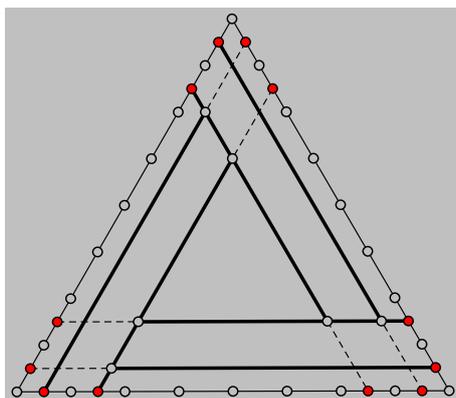
This is not the end of our divisions. On each side divide each two ending segments again into two equal parts (red points on the picture).



Now is time to make some useful supporting lines. Just draw segments connecting the opposite red points. This may look like on the picture below.

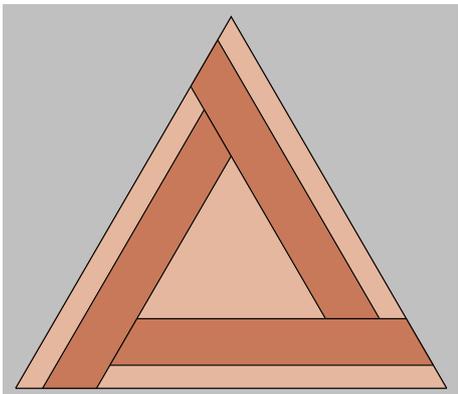


By making some lines thicker we will get a draft of the triangular template.

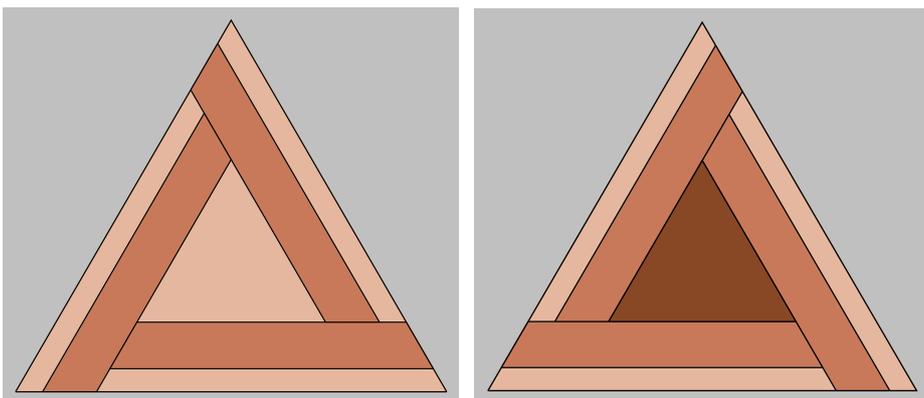


In fact it is convenient to make two such templates – one is shown above and another one is its mirror reflection.

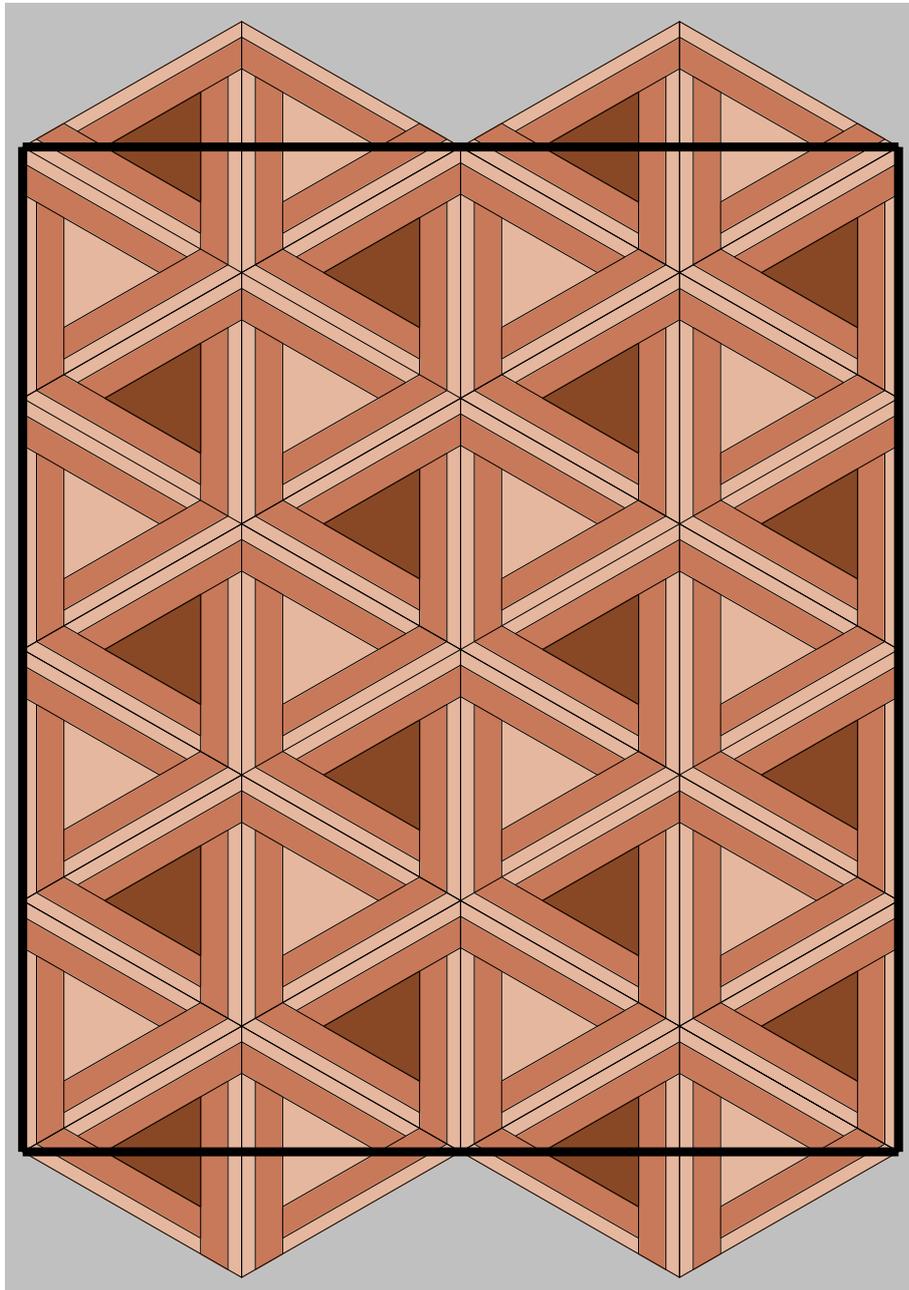
We can add some nice colors to this template and wipe out all supporting segments. This way we will get:



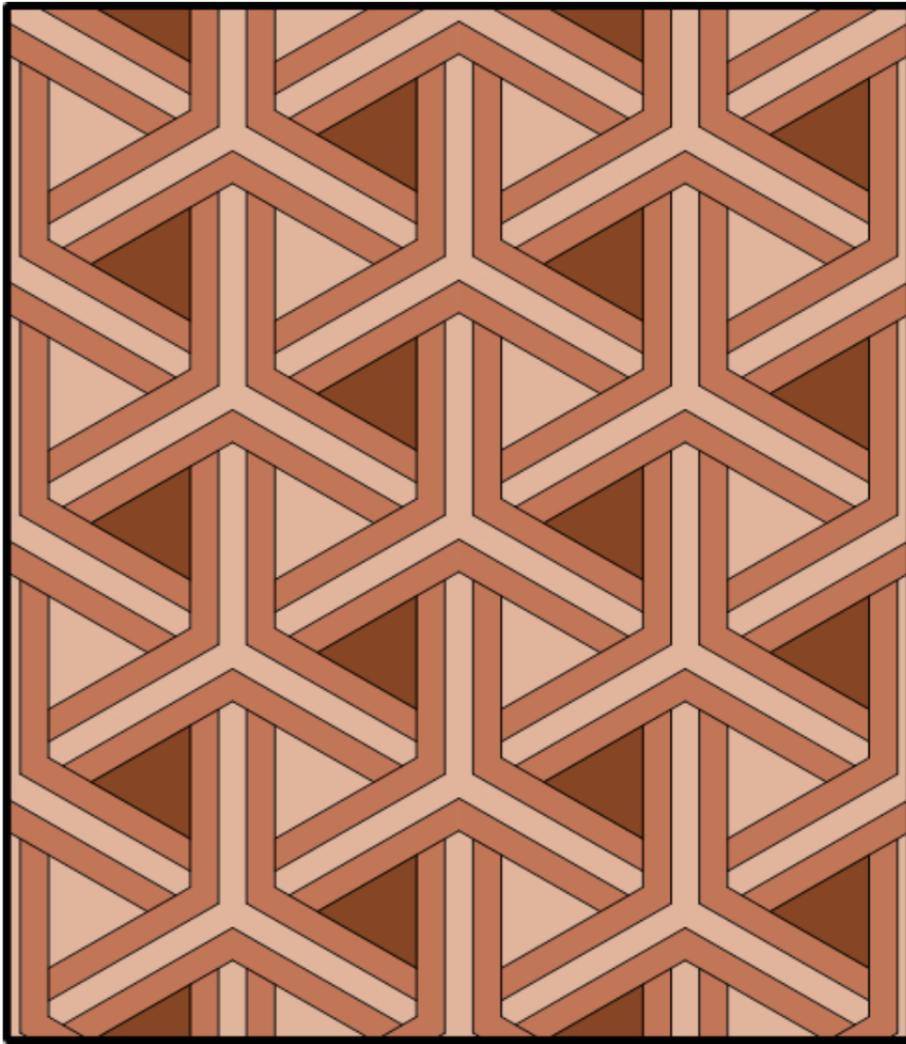
In order to show the structure of the whole pattern I created also a mirror reflection of the above template. In this case I made central triangle slightly darker. This way we will be able to distinguish which part of the pattern was created with the original template and which with its mirror reflection. Here are both templates:



This is all what we needed to reconstruct the whole pattern. By putting both templates in rows or columns we will get something similar to the shown below diagram.



The real pattern will not have lines between neighboring copies of templates. This is what we see on the photograph from Ayhan. Well, not exactly the same – on my image the pattern is upside down. So, one should rotate it 180 degrees in order to obtain exactly the pattern from the photo.



A pattern like this can be also a good starting point to create a simple puzzle with two triangular tiles. Finally, one can easily notice that this pattern can be reconstructed using regular hexagons.

Mirosław Majewski
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