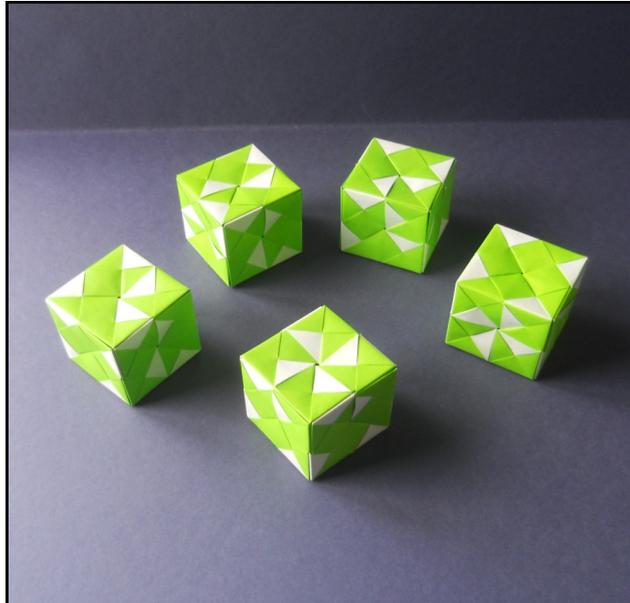


The Multicube

Designed by David Mitchell

The Multicube is an alpha 12-part Cube made from what I suppose we have to call Multicube modules, an asymmetric variation of the letterbox module. There are six different ways to use four of these modules to create one face of a cube. These faces can in turn be combined into a multiplicity of other cubes. I have not worked out exactly how many.



Two of these cubes are regular in the sense that all their faces are the same. It is also possible to make irregular cubes whose faces are a mixture of 2, 3, 4, 5 or even all six patterns. I call this last kind of cube an eccentric cube.

In order to clearly show the patterns, the modules in these diagrams have all been shown as if they were folded from the same colour paper. This need not, however, be the case. Any of the modular colourings that can be applied to a basic alpha 12-part Letterbox Cube can also be applied to the Multicube.

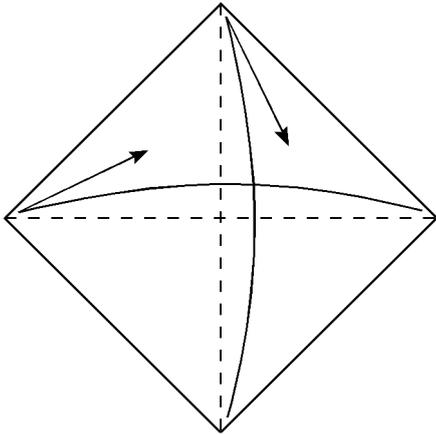
The same twelve modules can be reconfigured so that they can be assembled as alpha 12-part 8-point Stubby Stars in all the pattern variations and in a variety of modular colourings. In addition Multicube modules could be reconfigured and combined to create any other form that can be made from letterbox modules. I have not experimented with these combinations.

I designed and published the Multicube and the Multicube modules in 2001.

Folding the modules

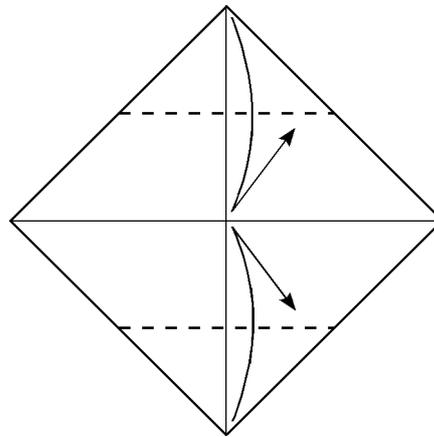
You will need twelve squares of irogami of the same colour. Begin with your paper arranged white side up.

1



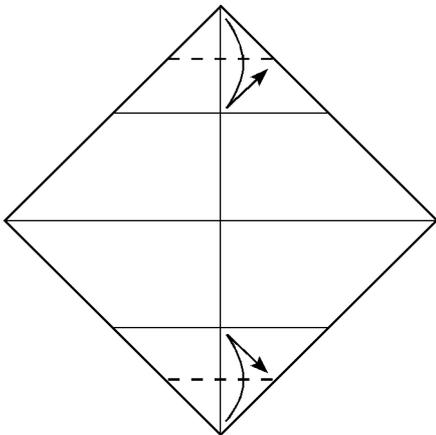
1. Fold in half diagonally in both directions then unfold.

2



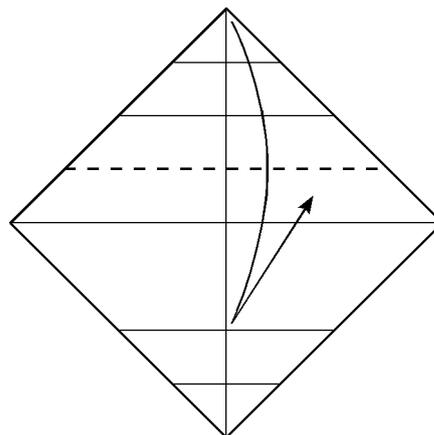
2. Fold both the top and bottom corners into the centre then unfold.

3



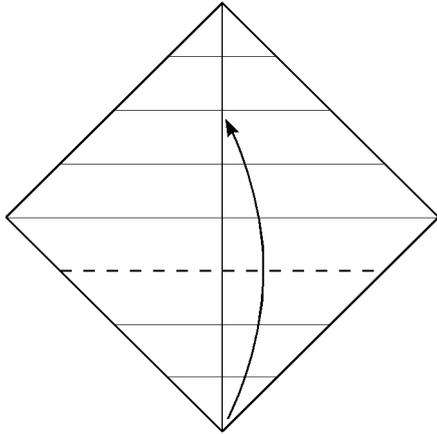
3. Fold the top corner down to the quarter way point, then unfold. Fold the bottom corner up to the quarter way point, then unfold.

4



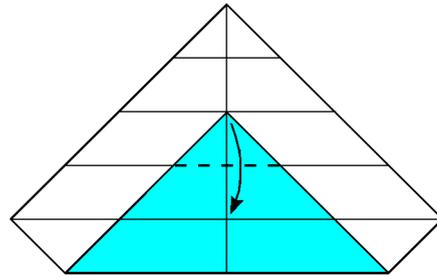
4. Fold the top corner down to the three quarter way point, then unfold.

5



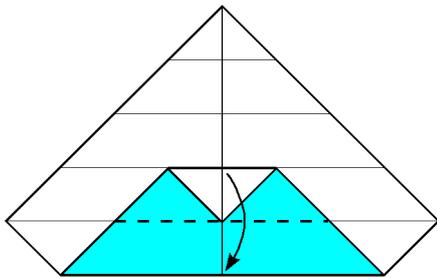
5. Fold the bottom point up to the three quarter way point.

6



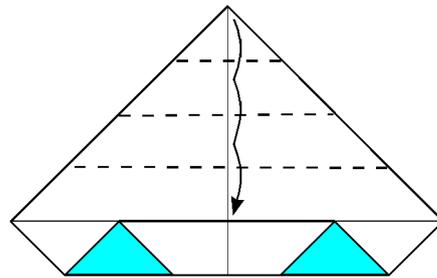
6. Fold the top corner of the front flap downwards using the existing crease.

7



7. Fold the top edge of the front flap downwards using the existing crease.

8



8. Roll the back layer downwards using the existing creases.

9

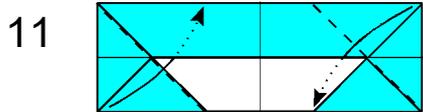


9. Fold both outside corners inwards like this.

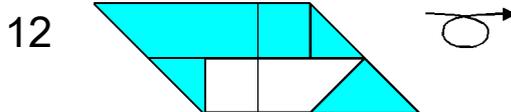
10



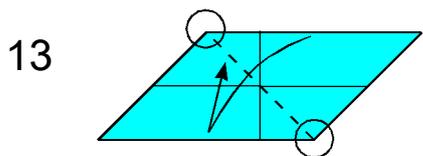
10. Fold the bottom left and top right corners inwards like this then unfold.



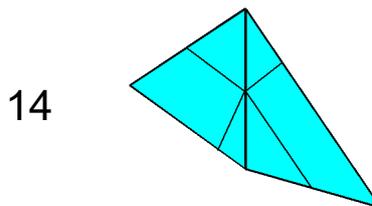
11. Remake the folds made in step 10 but this time tuck the corners underneath the front layers.



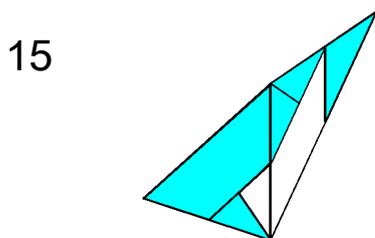
12. Turn over sideways.



13. Fold the module diagonally in half like this.



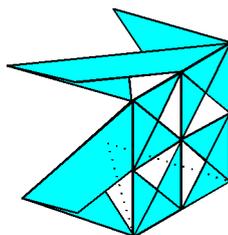
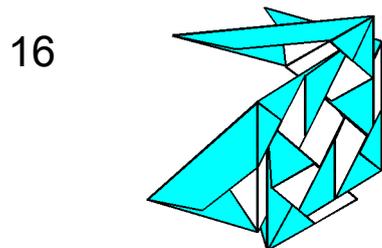
14. Turn over sideways.



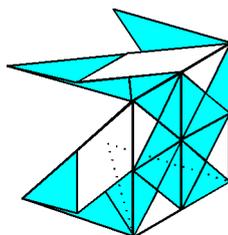
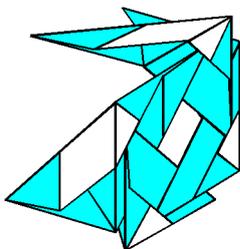
15. The finished module should look like this. Make twelve.

Assembling the faces

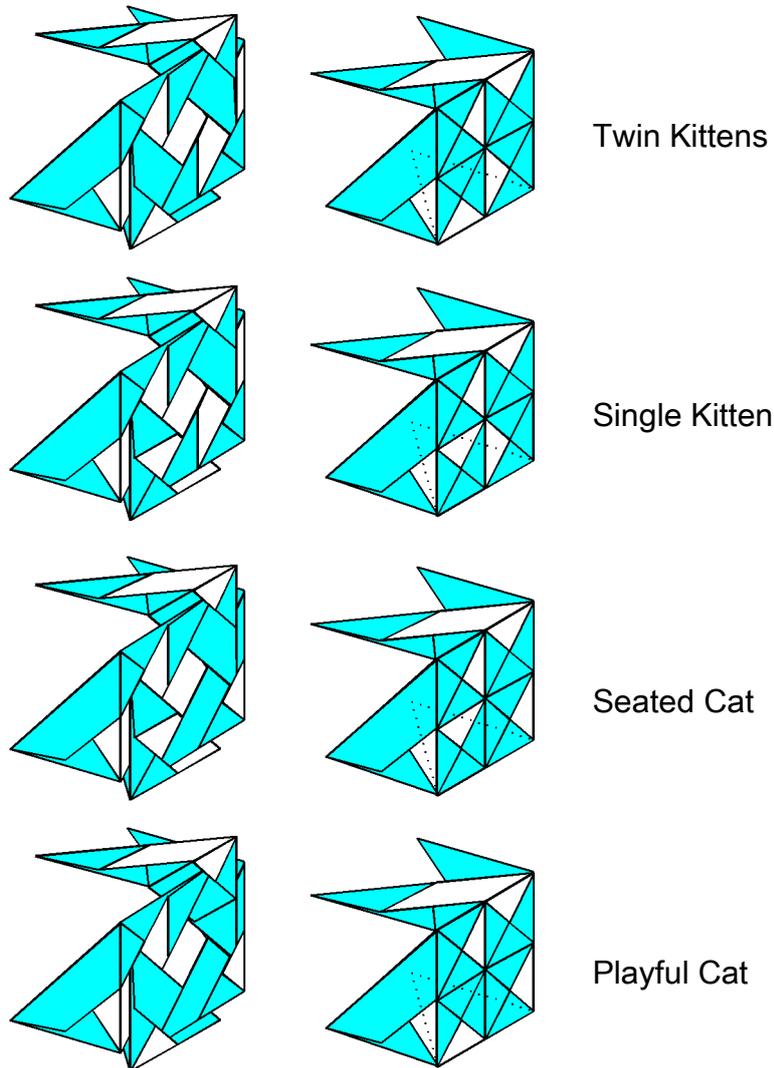
Four modules will go together to create six different square faces like this.



The Rotor



The Windmill

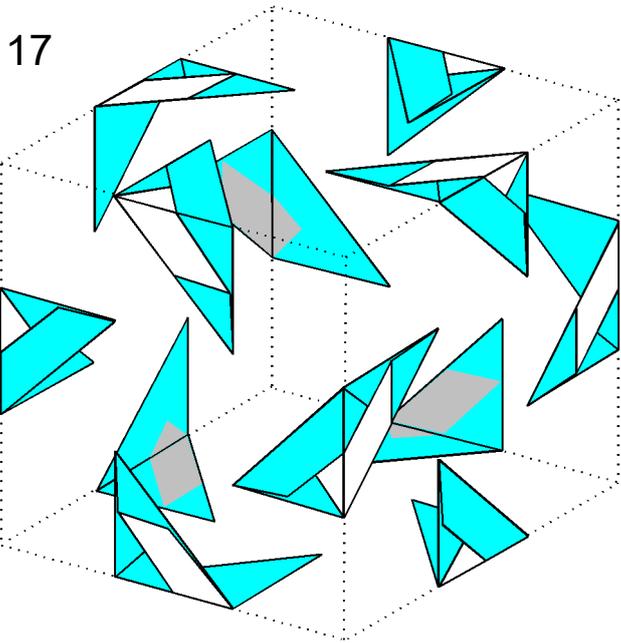


Assembling the cubes

The first two cubes are regular cubes. Each face shows the Twin Kitten and Seated Cat patterns respectively.

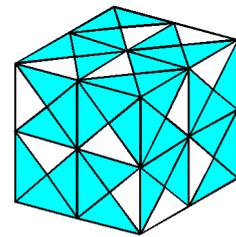
All the other cubes are irregular. The faces of the third and fourth are arranged Symmetrically whereas the faces of all the others are arranged asymmetrically.

The final cube is an eccentric cube which shows a different pattern on all six faces. Other arrangements of faces are possible.

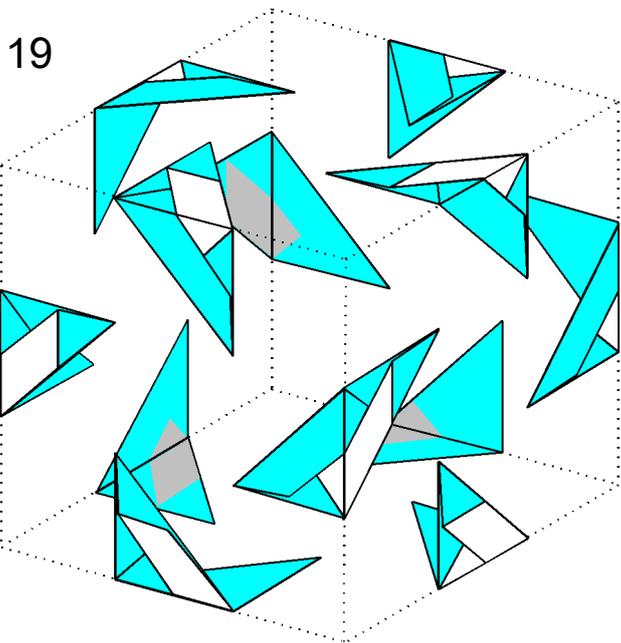


17. Putting twelve modules together like this will produce a cube with the Twin Kitten pattern on each face ...

18

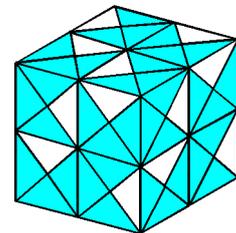


18. ... like this.



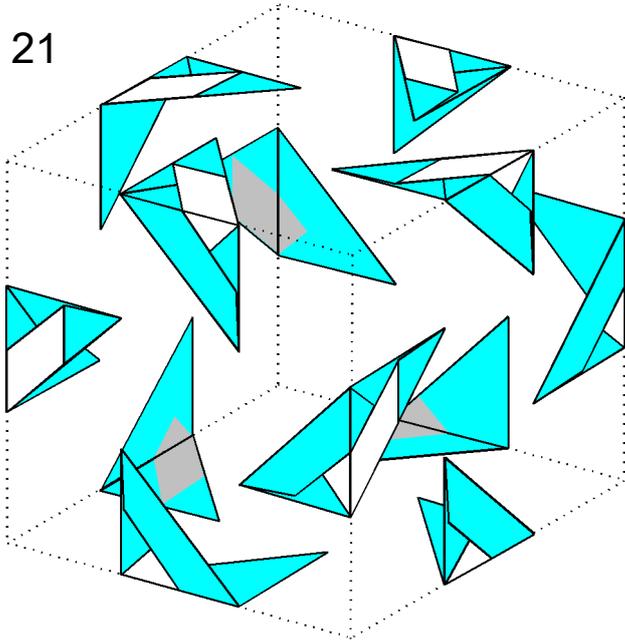
19. Putting twelve modules together like this will produce a cube with the Seated Cat pattern on each face ...

20

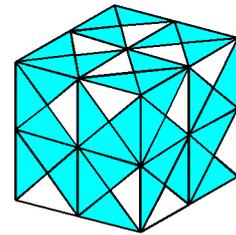


18. ... like this.

21

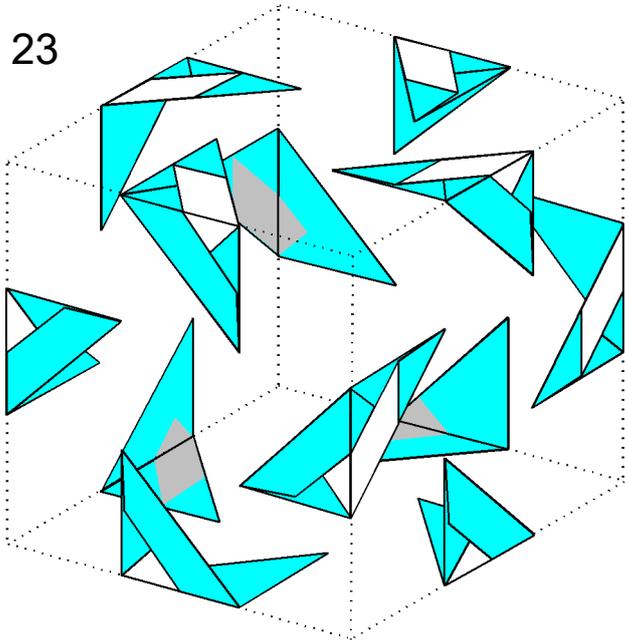


22

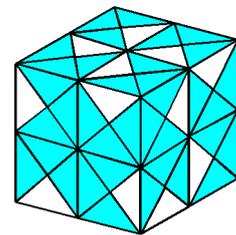


21/22. Putting twelve modules together like this will produce a cube with Rotor patterns on the top and bottom faces and Playful Cat patterns on all the other sides.

23

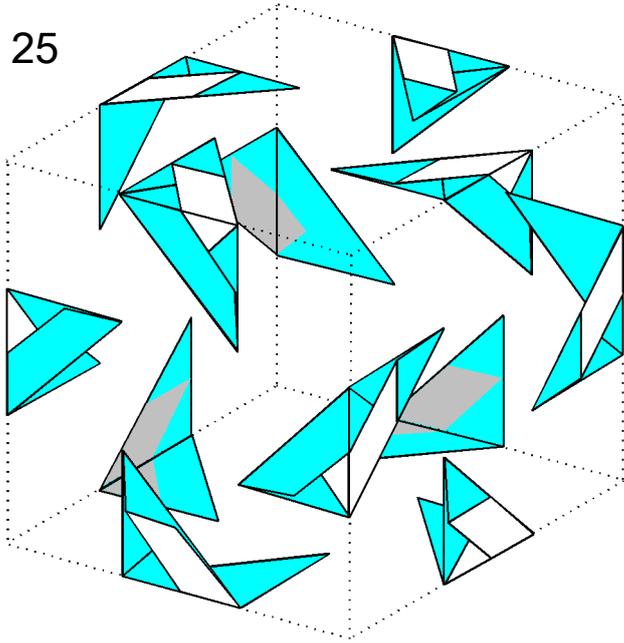


24

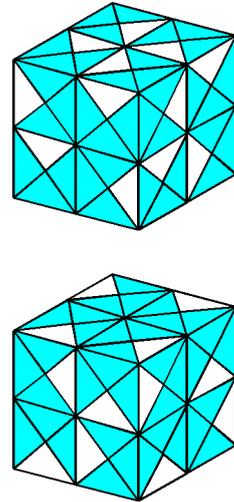


23/24. Putting twelve modules together like this will produce a cube with Rotor, Windmill and Twin Kitten patterns on opposite faces.

25

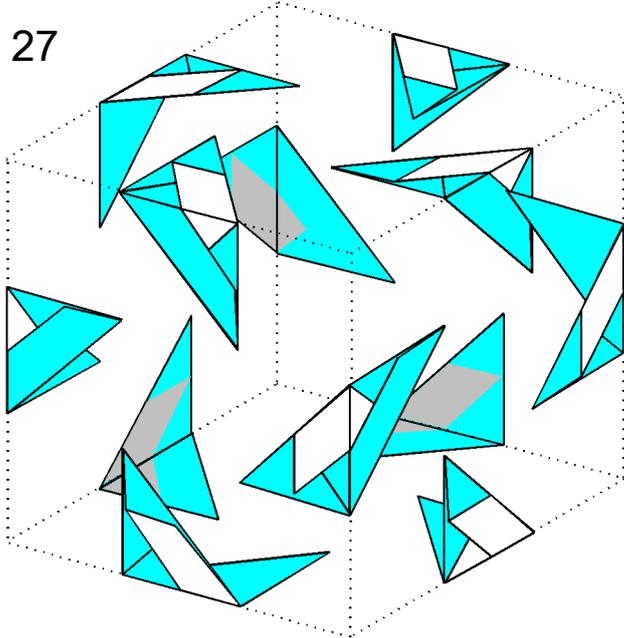


26

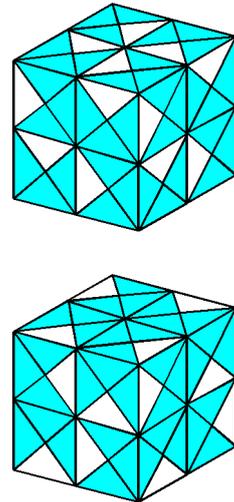


17. Putting twelve modules together like this will produce a cube with a Rotor pattern on the top, a Windmill pattern on the bottom and Single Kitten and Playful Cat patterns on the remaining pairs of opposite faces.

27

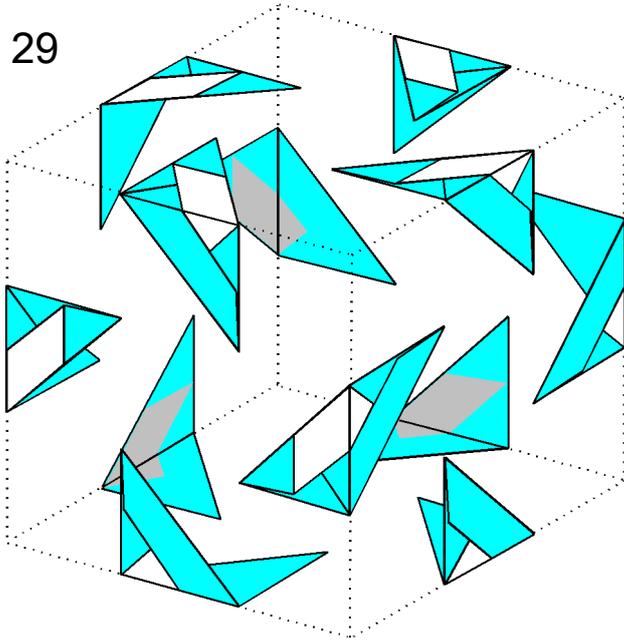


28

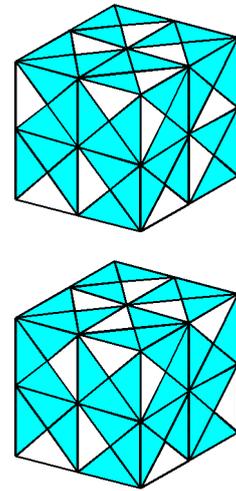


18. Putting twelve modules together like this will produce a cube with five patterns on its faces. Only the Seated cat appears twice.

29



30



29. Putting twelve modules together like this produces an eccentric cube in which each of the six possible patterns appears on one face of the cube.

Copyright David Mitchell 2015
www.origamiheaven.com