

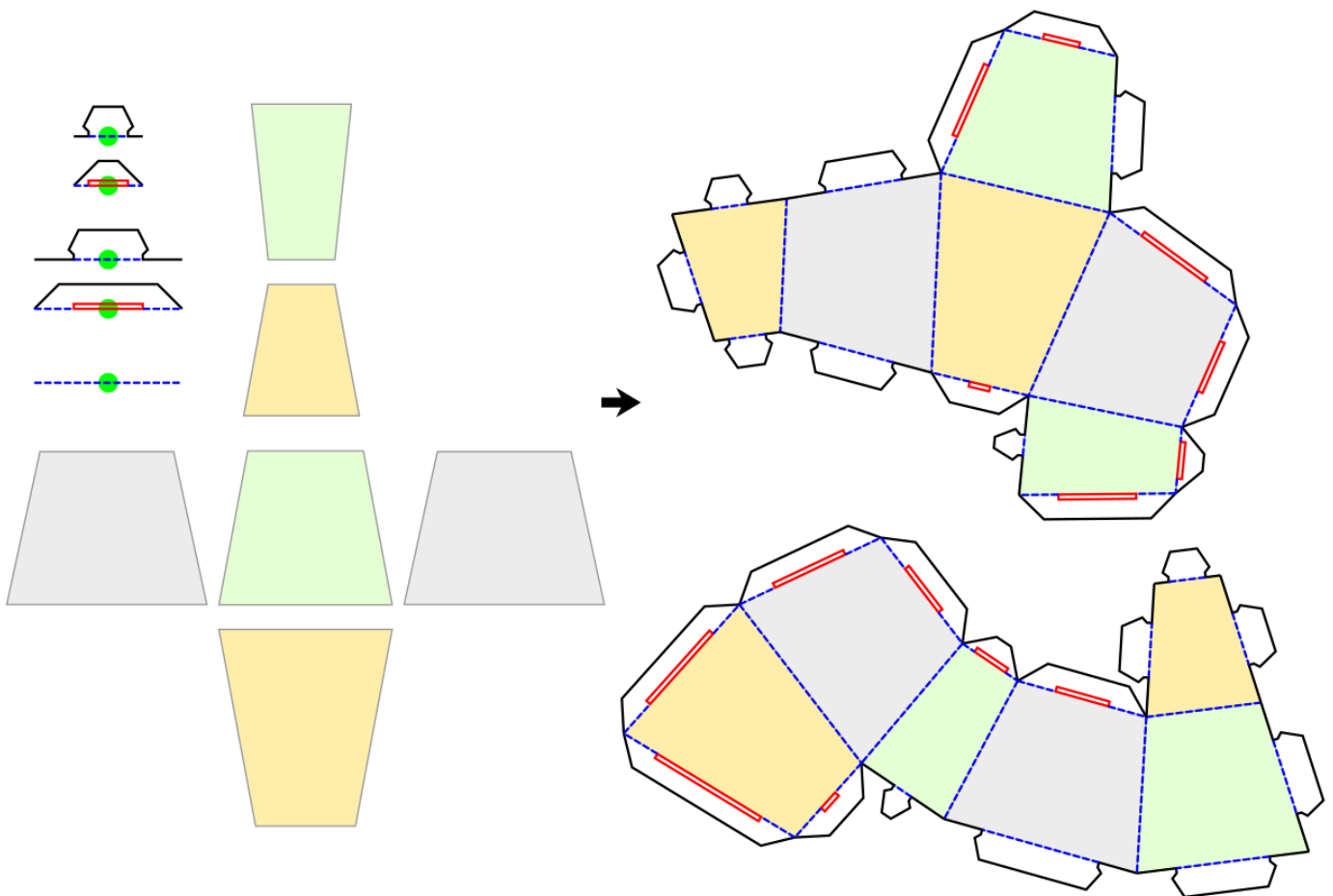
Parallel Translation

Source: https://github.com/chris0371/parallel-translation_extension

Allows parallel translations and alignment operations of selected straight lines. These lines can be simple path objects (with only start- and end-node) or line segments of larger path objects.

Purpose

This extension has been written to help making a strange kind of paper cube with angles different to 90 degrees. It helps to align the faces together (probably in different arrangements, as indicated in the right side of the screenshot below) and to add complex folding flaps with lines in different colors to the edges. There are options to resize the length of the flaps so that they match the length of the edges.



More detailed description

The functionality of the extension is spread across different tabs of the UI. The currently selected tab determines what functionality is performed by the extension. At first glance, the individual tabs seem to have completely different functionality, but if you look closer, it all comes back to the same basic concept.

You have to tell the extension what object(s) of your drawing to use/modify by selecting them before hitting the apply-button.

Object types to select

Within all the objects selected by you, the extension always looks for a **line segment**, calculates its orientation angle and length, and performs some tasks based on that calculation. This line segment could be

1. a simple path object with just the start- and end-node. In such a case, you just have to select the whole path object. Or it could be
2. a line between two nodes of a larger path object. In that case, you have to select the two nodes of the path.

For the "Group-Alignment" functionality, the extension also looks for an **alignment group**. This is a group of an arbitrary number of other objects, which is aligned to the line segment we've talked about earlier. 'Aligned' means that the group is rotated, moved, and it's width is modified to match the position, orientation and length of the line segment.

The extension assumes two things about an alignment group:

1. The group shall be in its horizontal default orientation. That means that if this group is to be aligned to a horizontal line segment drawn from left to right, it does not need to be rotated.
2. The group shall contain exactly one special object which center marks the rotation center of the whole group. It is recommended to use a circle or square or simple path for this. The extension identifies this special object by its fill-color. The color to look for can be set in the UI (at the "Group-Alignment"-tab) and defaults to neon green (#0x00FF00)

Information Tab

This first tab contains version information and a brief explanation of extensions functionality. Hitting the 'Apply'-button in here will just show some basic information about the drawing, what objects are selected, and some basic calculations done on those objects (like length and orientation angle for the selected line segment(s)).

Translation Tab

This tab performs parallel translation of the selected line segment. That is, the extension calculates the orientation angle of the selected line segment, and moves the object by the given distance in the direction of a right angle to the lines direction.

There are options to apply the movement to just the original object, to the original object and leaving a copy at the original position, or to a copy of the object leaving the original one untouched.

There are also options to revert the movement direction and to use a fixed translation angle instead of calculating it from the original line orientation.

Group-Alignment Tab

This tab aligns the selected group to the selected line-segment. 'Aligned' means that the group is rotated, moved, and it's width is modified to match the position, orientation and length of the line segment.

There are options to apply the alignment to just the original group, to the original group and leaving a copy at the original position, or to a copy of the group leaving the original one untouched. Further, there are different options to adjust the width of the aligned group.

There are also options to apply an additional rotation of 180 degrees to the group and to auto-remove the group rotation center object from the aligned group.

For the strange-paper-cube example, this functionality can be used to place the folding flaps at the straight but odd-angled edges of the faces.

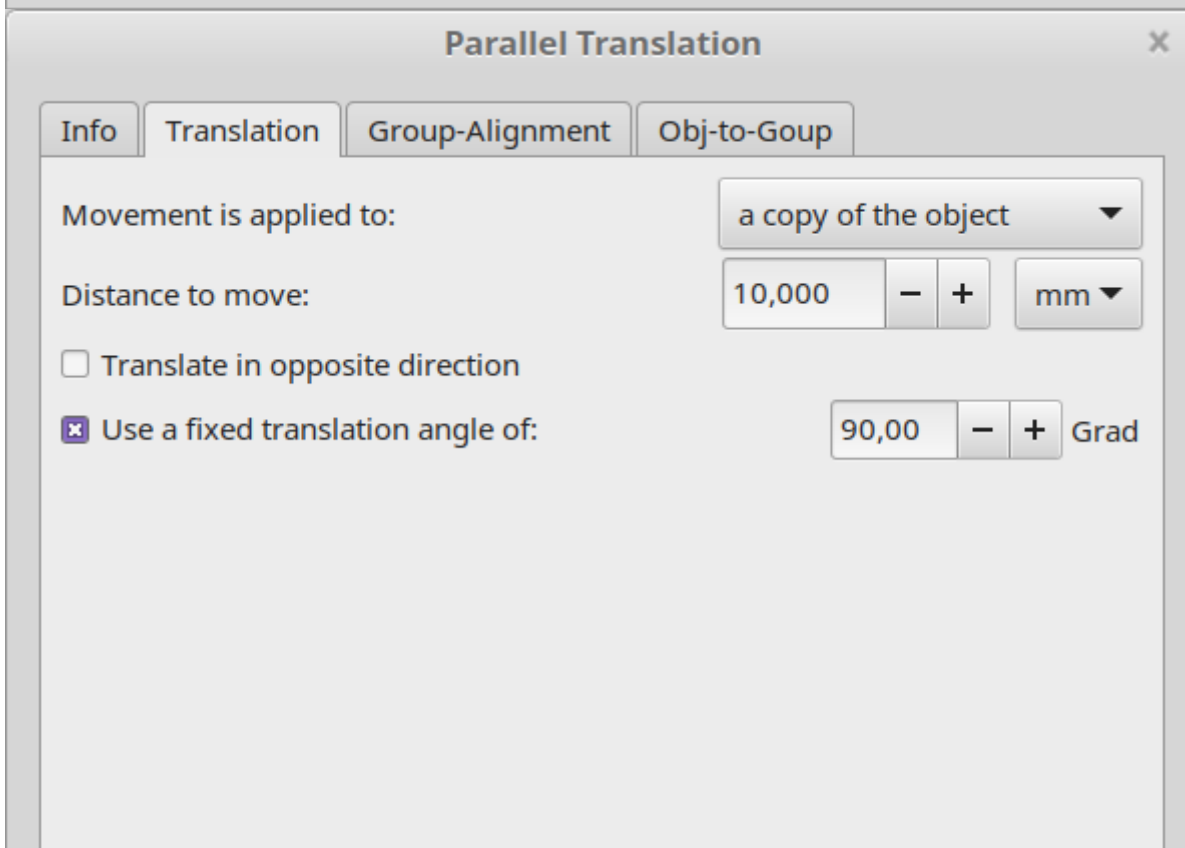
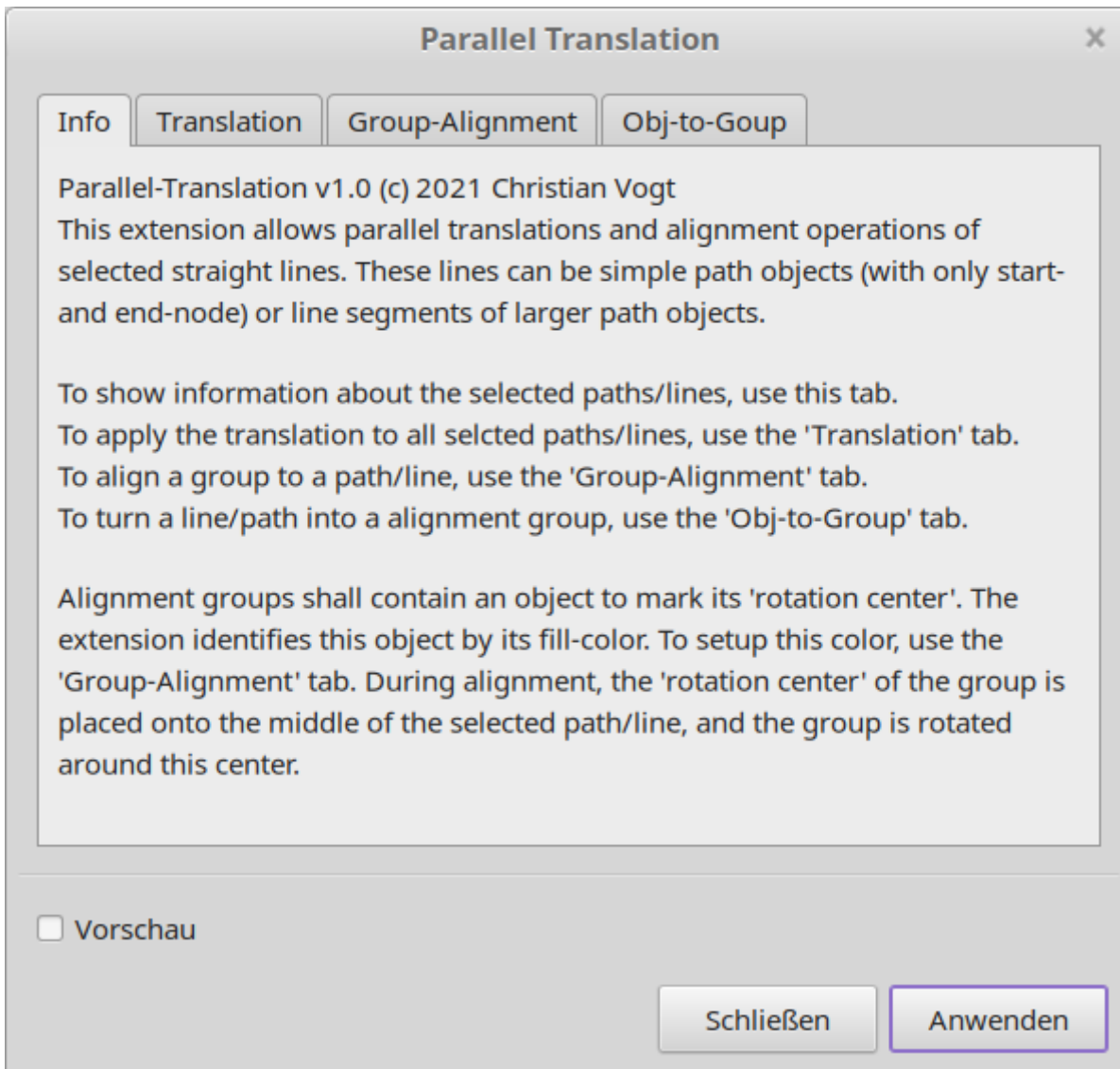
Object-to-Group Tab

This tab is used to turn an ordinary object into an alignment group. This is done by rotating the object so that the selected line-segment is in horizontal orientation, adding a group rotation center object at the middle of the selected line-segment, and then group the objects together.

For the strange-paper-cube example, this functionality can be used to align the faces of the cube together. Moving and rotating face A to align one of its edges with the corresponding edge of a fixed face B would be a 2-step-process like this:

1. Select the line-segment to be aligned from face A and turn the object that makes up the face into an alignment group using the Object-to-Group tab.

2. Select this group and the line-segment to be aligned with from face B. Then align just this group (no copies) using the Group-Alignment tab with no group width adjustment.



Parallel Translation



Info

Translation

Group-Alignment

Obj-to-Goup

Alignment is applied to:

a copy of the group



Group width adjustment method:

no adjustment



Endpoint tolerance

15



Rotation center object fill color:



- Remove rotation center object from aligned group
- Rotate group by an additional angle of 180 degrees

Parallel Translation



Info

Translation

Group-Alignment

Obj-to-Goup

Rotation center object size:

1,000



Px



- Rotate group by an additional angle of 180 degrees

Vorschau

Schließen

Anwenden

Version #1

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