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DXF JANITORS

USER MANUAL

Learn how to use the program

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Innhold

1. Notable information before usage

Not all versions of the *AutoCAD DXF* format are compatible with this software. Specifically, the *AutoCAD 2018 DXF* version is incompatible. Before using the software, the user should ensure that the file to open is of a valid format. A file can be converted directly in *AutoCAD* by saving it as another format.

Figure 1: Picture from File type selection when saving a file in AutoCAD.

2. Launching the software

Download the bundle from <link>. Ensure that both Rust and Python are installed and that the correct Python libraries are installed. Locate the executable and run it.

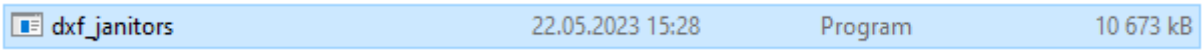


Figure 2: Screenshot of how the executable file looks

3. Opening a file

1. Press **File > Open file**.

    1a. Alternative: Press "**Ctrl + O**" on the keyboard.

2. Locate the chosen DXF file in the file directory.

3. Press **open** or enter on the keyboard.

1. Press “**File**”.

Figure 3: Screenshot showing location of "File"

2. Press “**Open File**”

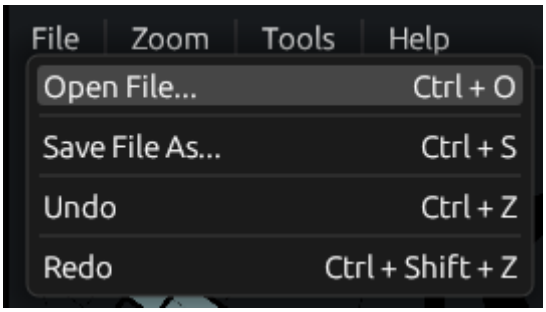


Figure 4: Screenshot of menu after "File" is clicked

3. Locate the chosen DXF file in the file directory and press “**Open**”.

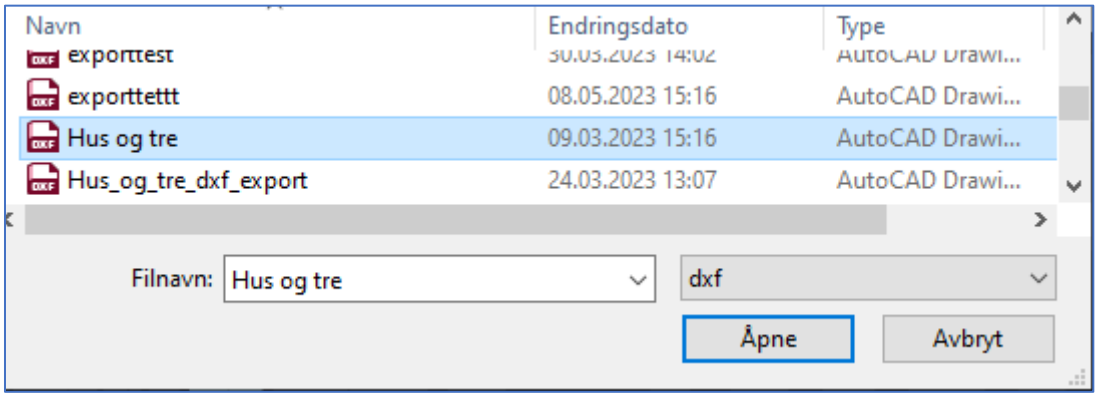


Figure 5: Screenshot of files in file dialog.

4. If done successfully, a visualization of the open file is displayed, and the componential layers are displayed as a list on the right.

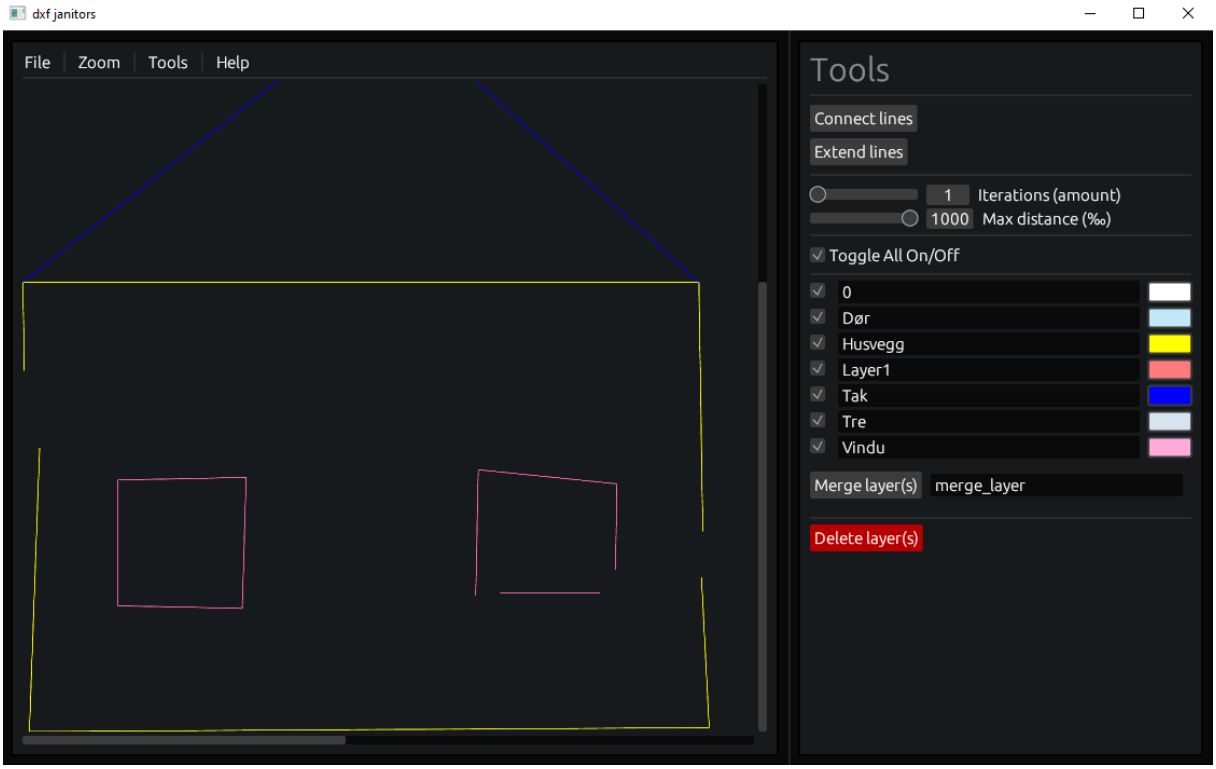


Figure 6: Visualization of the opened file in the program.

5. If the file opening was invalid, an error message is displayed:

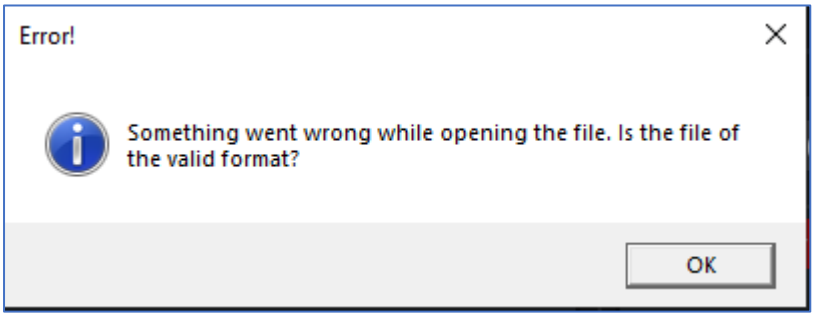


Figure 7: Error alert shown to user if the file is corrupted or invalid.

4. Saving an edited file

Pre-condition: A file needs to be opened. See step 3.

1. Press **File > Save File.**
    a. Alternative: Press "**Ctrl + S**" on the keyboard.
2. Choose a location for the file in your local directory.
3. Pick a name for the saved file.
4. Press "**Save**".

1. Press "**File**":

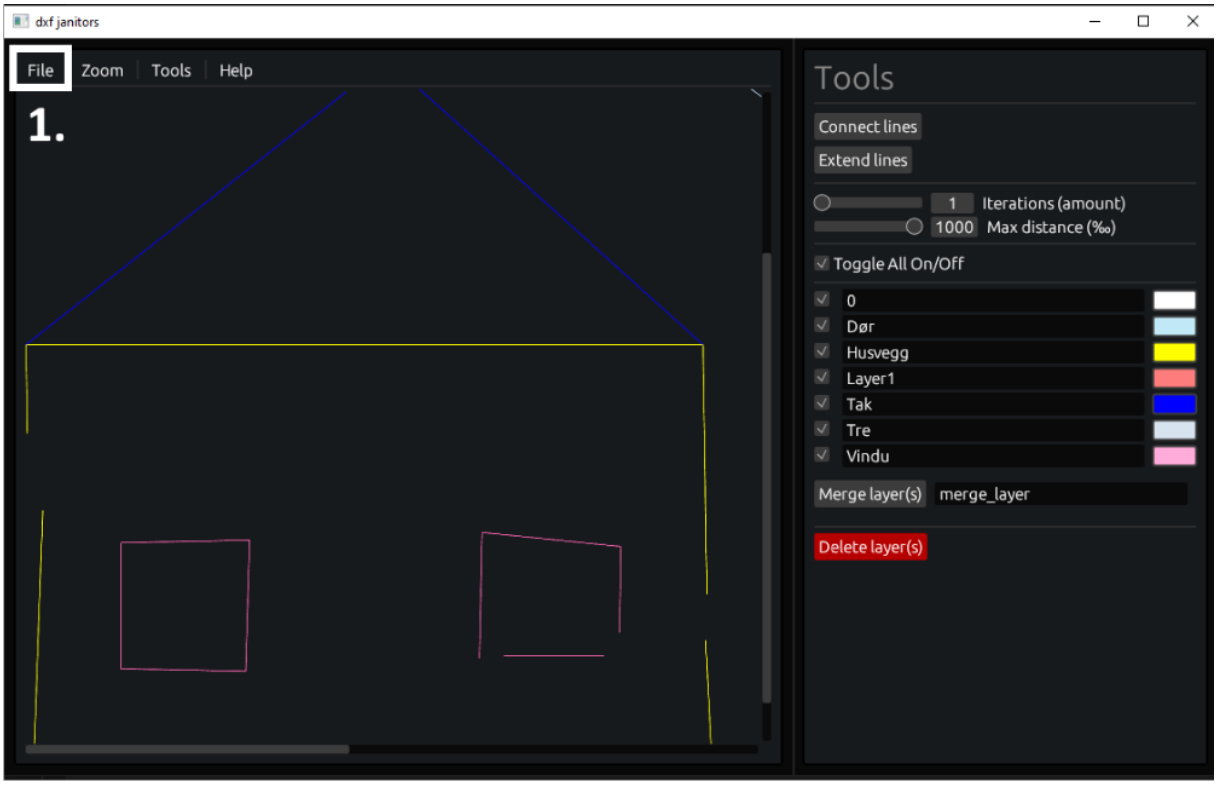


Figure 8: Screenshot of program showing the location of "File".

2. Press “**Save File As**”:

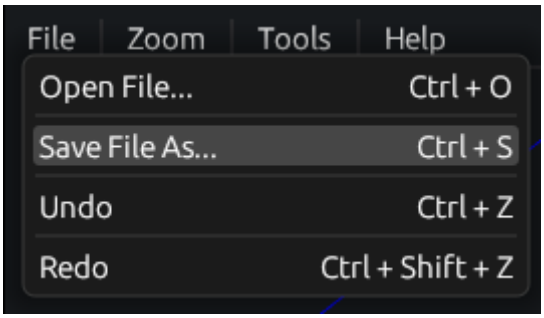


Figure 9: Screenshot from the program showing the button for saving the file.

3. Pick a name for the file, the extension (DXF or SVG), and location to save it in your local file directory:

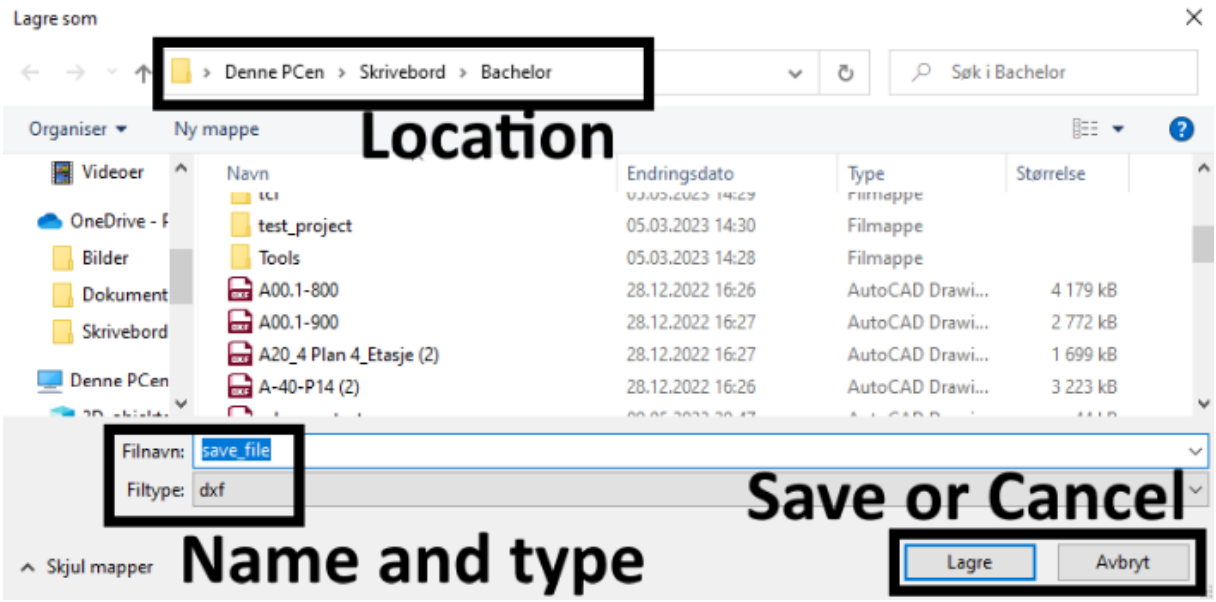


Figure 10: Description of the different adjustable fields in the file dialog while saving.

NOTE: Wait a couple of seconds before closing the programing, while the system is saving the file. A lock here is not yet implemented.

5. Basic controls

The user interface is composed of three main parts. The first part (marked 1) is a toolbar where the user can access most of the software's functionality. These actions are also linked to different key binds and are therefore mostly an accessibility addition for new and returning users. The second part (marked 2) always houses the visualization of the current file. When saving, the output file will be almost identical to the visualization. This is a scrollable window, so the user can get a better look at the file. The third part (marked 3) is the main tool section. Here, the user can perform several actions that alter the content of the file.

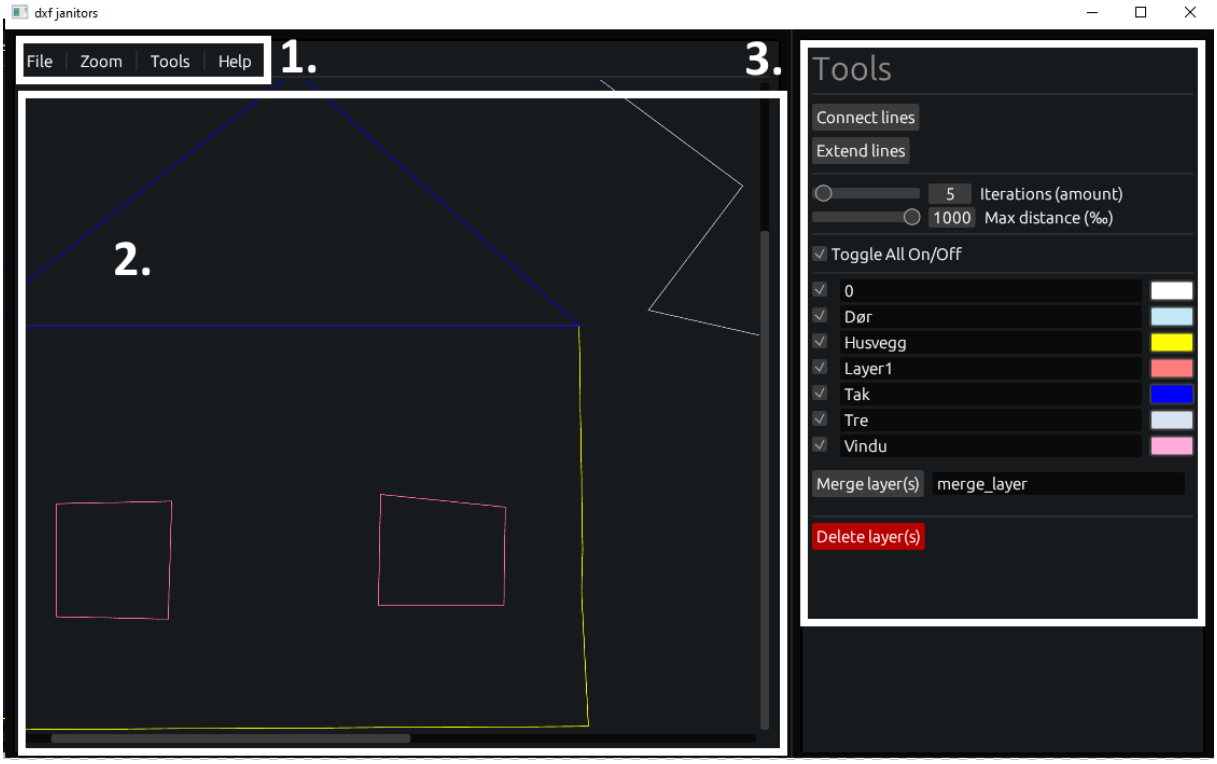


Figure 11: Screenshot of the program showing three different sections. Number 1: The toolbar. Number 2: The central-panel with visualization of the drawing. Number 3: The side-panel with functionality for the user.

5.1 Hide specific layers.

In the list of layers, the checkboxes indicate if the layer should be visible or not. Use the checkboxes to update the visual representation in real-time.

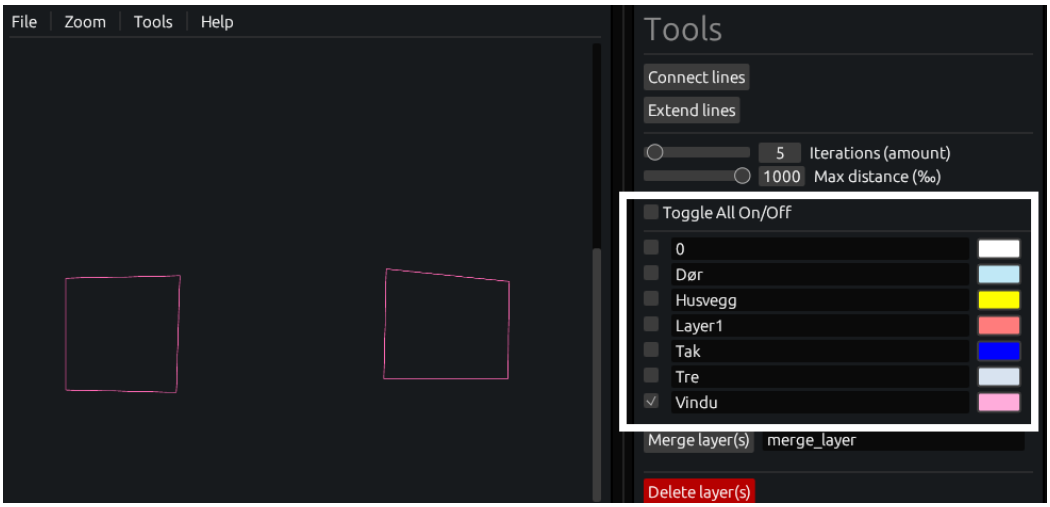


Figure 12: Screenshot of the program showing the checkboxes that allows the user to hide or unhide specific layers.

5.2 Edit the color of a layer

All the layers are color-coded. The current color of the layers is displayed on the right side of the layer's name. The user can change the colors by pressing the color box.

1. **Press the color box for the option of changing the color.**

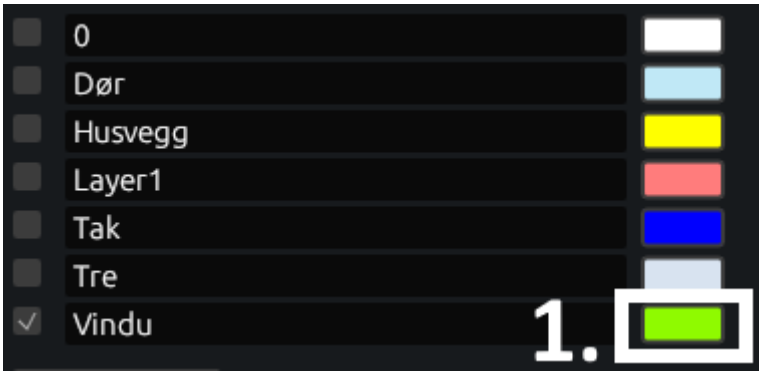


Figure 13: Screenshot of the list of layers where the user are able to change the color of a given layer.

2. **Select a new color in the RGB color picker.**

Figure 14: Screenshot of the RGB color picker the user utilizes to change the color of a layer.

5.3 Zoom and interact with the image

The image is interactive through **Click + Drag.** Hold down left mouse-click and drag it to adjust the center of focus.

To interact with the image:

- Hold **Left mouseclick + Drag** wanted direction to adjust the image.

To Zoom:

- Press **Alt + Scroll**
- Use toolbar button **Zoom > Zoom (in or out).**
- Use the keyboard binding: **Ctrl + "+" or "-".**

5.4 Undo or redo changes

Every time a change is made to the file, the old version is temporarily stored and the user is able to go back in between previous versions using the undo and redo functionality.

Both Undo and Redo are located under **File** in the toolbar.

To **Undo or Redo**:

1. Press **File>Undo/Redo**

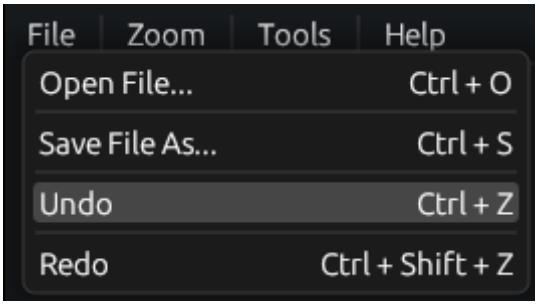


Figure 15: Screenshot of the location of Undo and Redo in "File".

Or

2. Use the keybindings:
    - **Undo:** Press "**Ctrl + Z".**
    - **Redo:** Press "**Ctrl + Shift + Z".**

6. Advanced controls

This chapter includes all functionality of the software with a guide on how to use them. It includes before and after figures to see the effect of the functionalities.

6.1 Renaming layers

1. Locate the list of layers.
2. Press the text-field/label of the layer to rename:

Figure 16: Screenshot of how to edit a layer name by selecting the editable name field.

3. Choose a new name.

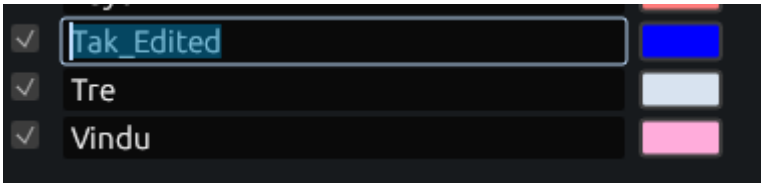


Figure 17: Screenshot of the name that has been edited.

4. Deselect the text-field or press "**Enter**" to confirm the change.

5. If the new name is a duplicate, an underscore is added to the duplicate name, to deter overwrites:

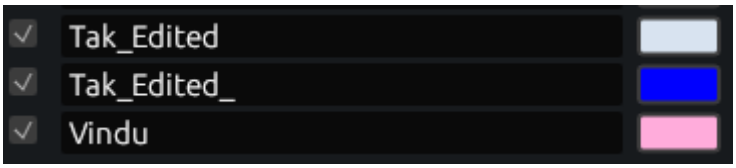


Figure 18: Screenshot of two duplicate names, where an underscore is added to one of them.

6.2 Merging layers

Merging layers combines the selected layers into a single new layer.

1. Use the checkboxes to select layers before merging.
2. Fill in a new name in the text-field by the "**Merge layer(s)"** button below the list of layers, marked in white in the figure below:

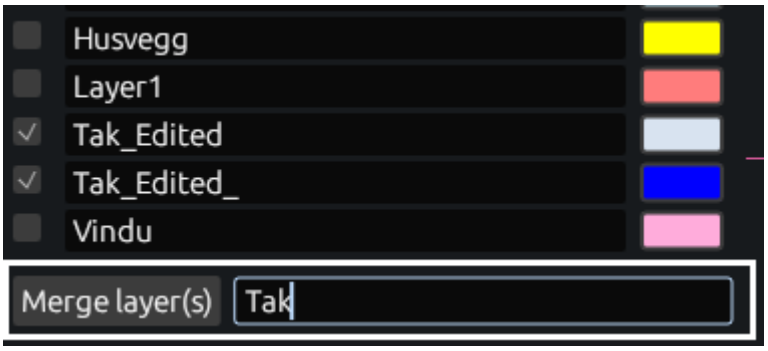


Figure 19: Screenshot of the button for merging layers and giving it a name.

3. Press the button "**Merge layer(s).**

   The layer "Tak_Edited" and "Tak_Edited_" is merged into the new layer "Tak":

Figure 20: Screenshot of the new merged layer. The two selected layers from the previous figure is now merged into the new layer "Tak".

6.3 Deleting layers

1. Use the checkboxes to select layers to be deleted.

2. Press the red "**Deleted layer(s)"** to initiate a deletion of the selected layers:

Figure 21: Screenshot of the location of the delete button.

3. When pressed, an alert box is shown to the user to confirm the deletion:

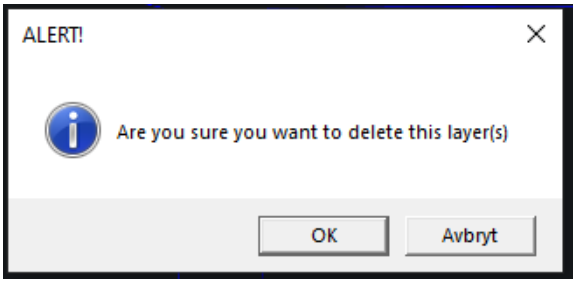


Figure 22: Screenshot of the alert message before confirming the deletion of the selected layers.

The user must press "**Ok"** for the deletion to be successful.

6.4 Connecting open polylines

The connect and extend tool buttons initiate an algorithm that closes open polylines, creating larger polylines/polygons. The figure below marks:

1. An example object that should be closed.
2. The toolbar is used for connecting and extending lines.

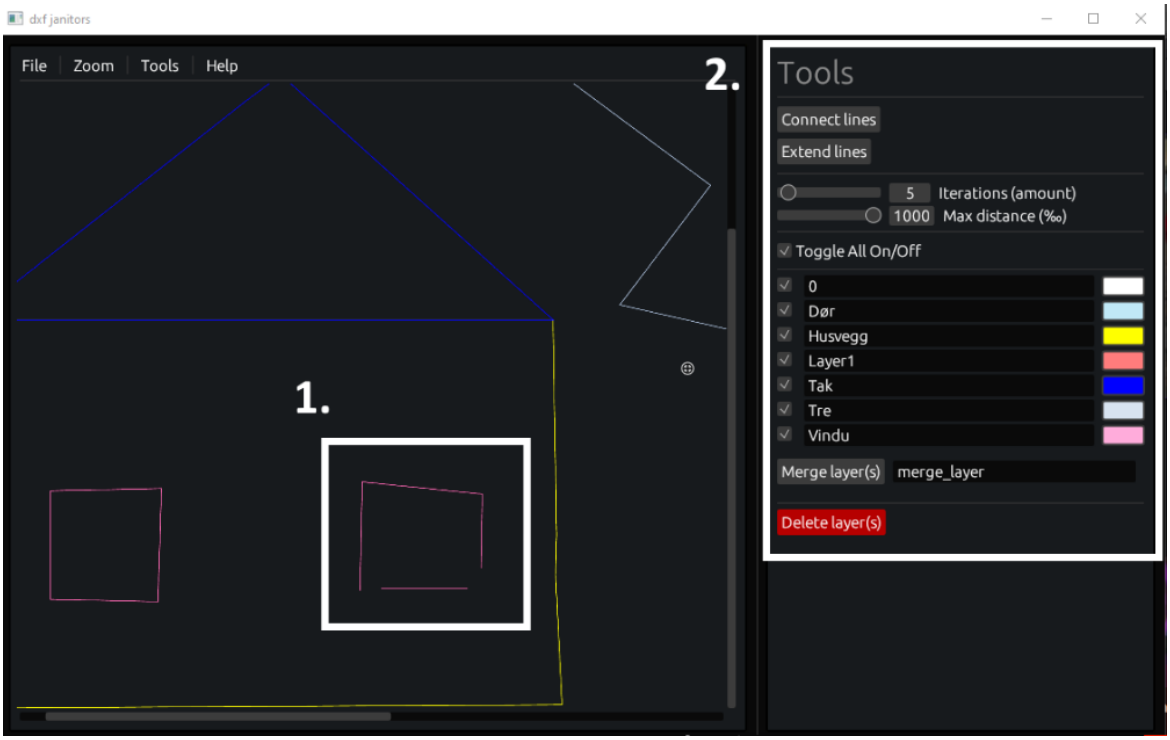
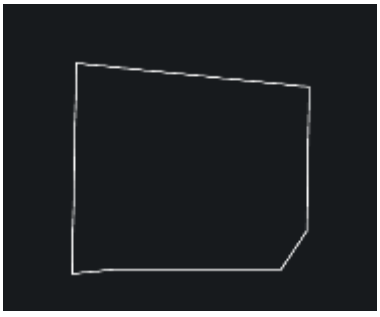


Figure 23: Screenshot of the program. Number 1: Example of polylines that needs to be connected. Number 2: The location of the tools in order to connect.

The user could choose either **Connect** or **Extend**.

The differences are showcased in the figures below. (The original objects is marked as 1. in the figure above):

Connect:



Extend:

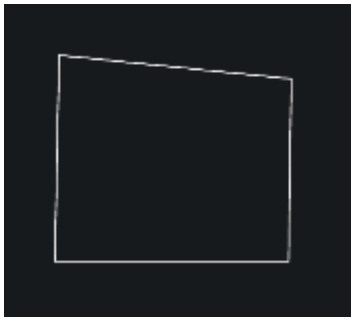


Figure 24&25: Screenshot on how the Connect and Extend funciton would work on the rectangle from the previous figure.

Step-by-step:

1. Use the checkboxes to select the layers the actions should be performed on.

2. The user can slide the iterations slider to decide the number of times the algorithm should try to close lines. In bigger files, the number of unconnected lines can, leading to a higher number of iterations necessary for a full close.
   The user can use the max distance slider to ensure open points far from each other are not getting closed. The values are pro mile of the diagonal of the image.

3. Choose **"Connect"** or "**Extend**", based on preference.

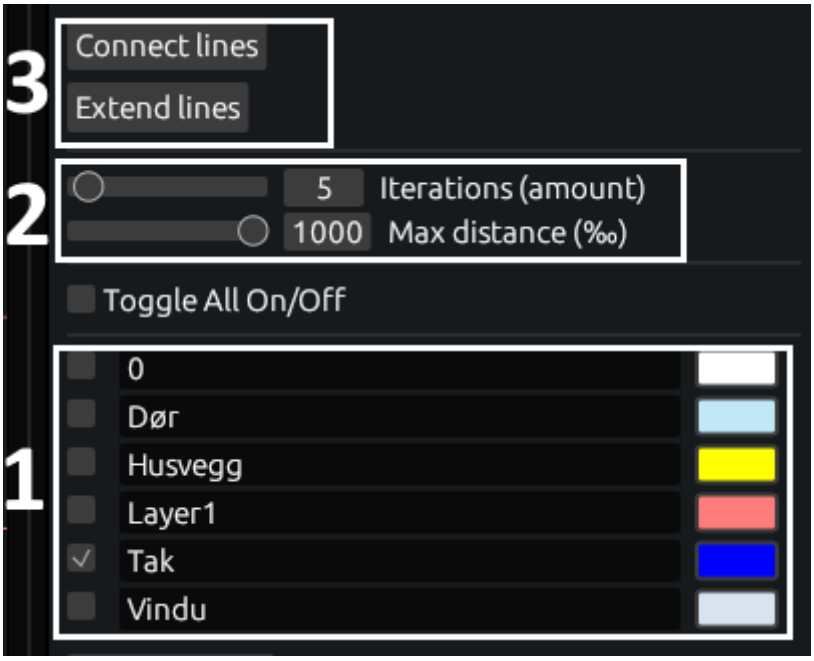


Figure 25: Figure that explains the differnet adjustments the user can do before connecting. Number 1: Select affected layers. Number 2: Adjust the amount of connections and the maximum distance between two points before connecting. Number 3: Buttons action.

EXAMPLE BEFORE CONNECT/EXTEND

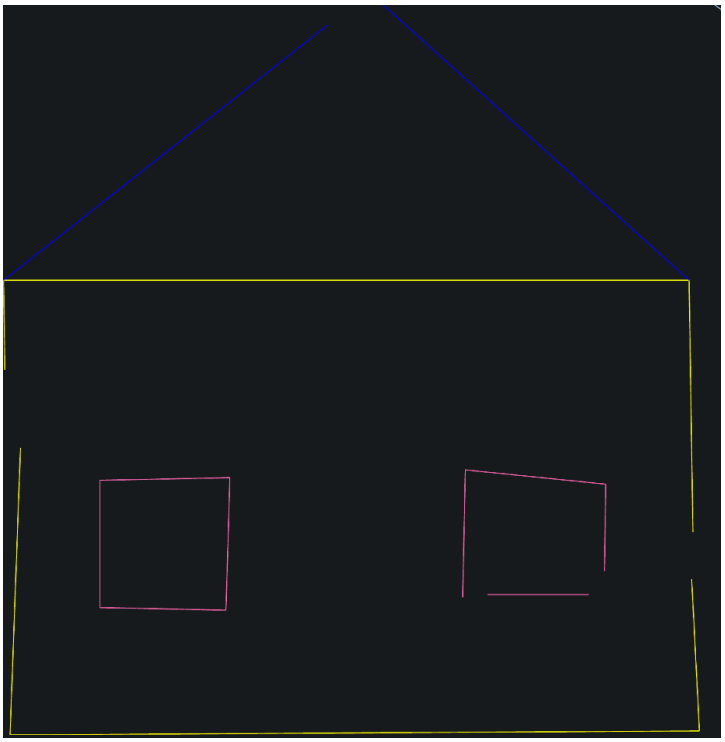


Figure 26: Example of a full drawing before connection of lines.

AFTER CONNECT

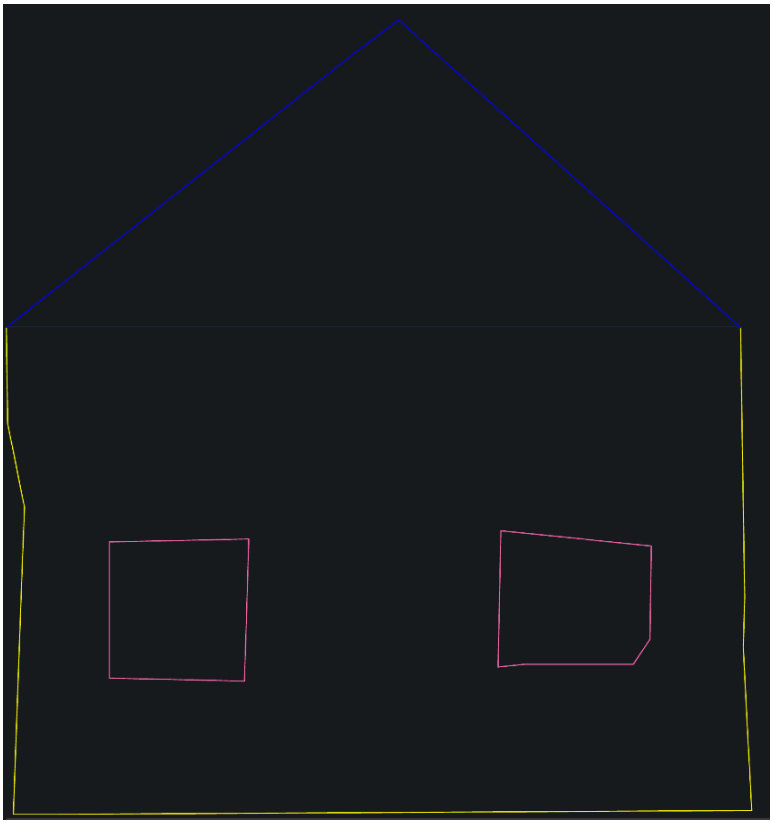


Figure 27: Example of result after "Connect"

AFTER EXTEND

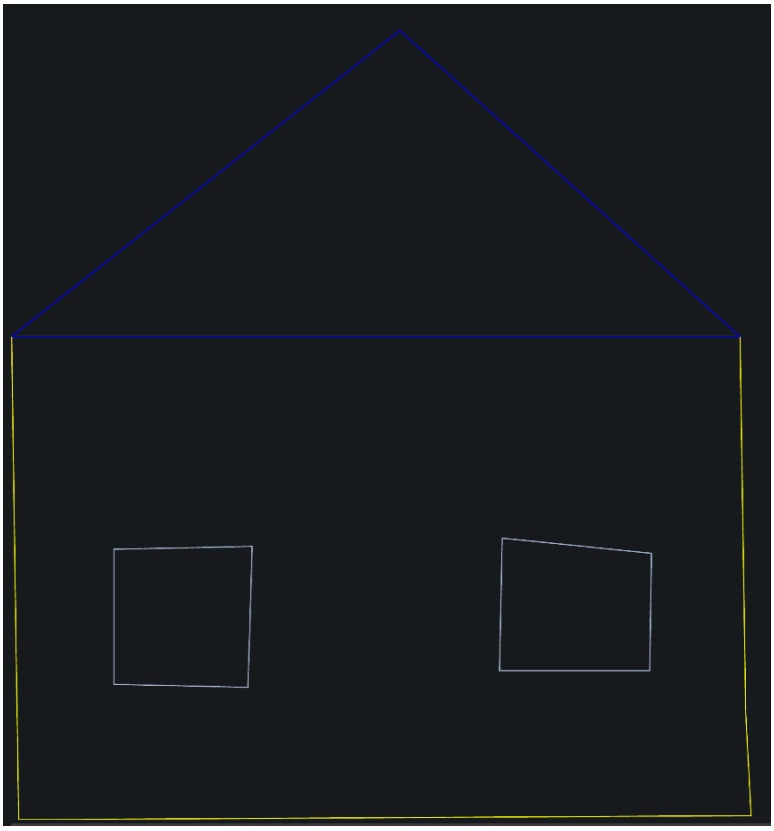


Figure 28: Example of result after "Extend".

7. List of key-bindings

Open file: “Ctrl + O”

Save file: “Ctrl + S”

Undo: “Ctrl + Z”

Redo: “Ctrl + Shift + Z”

Zoom in:

- **“Alt + Scroll”**
- **“Ctrl + ‘+’”**

Zoom out:

- **“Alt + Scroll”**
- **“Ctrl + ‘-‘”**