

Annotator instructions

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1. Installation

First thing you are going to need is to install PHP (we recommend the latest version available) on your system. The easiest way to do that is by following the instructions on this web page: <http://php.net/manual/en/install.php> . be careful to look for the right instructions depending on your operating system. After the PHP has been installed just unzip the files wherever you desire and make „index.php“ as your homepage, and the installation part is over.

Next thing to do is to set pictures for annotation. That is made by putting pictures in the folder „Pics/“. Subfolders with pictures are also permitted. In every folder with pictures there must also be a .txt file „Classes.txt“ with user defined classes which are going to be used for annotation. Structure of that file looks like this:

name of the class (like „Cars“)

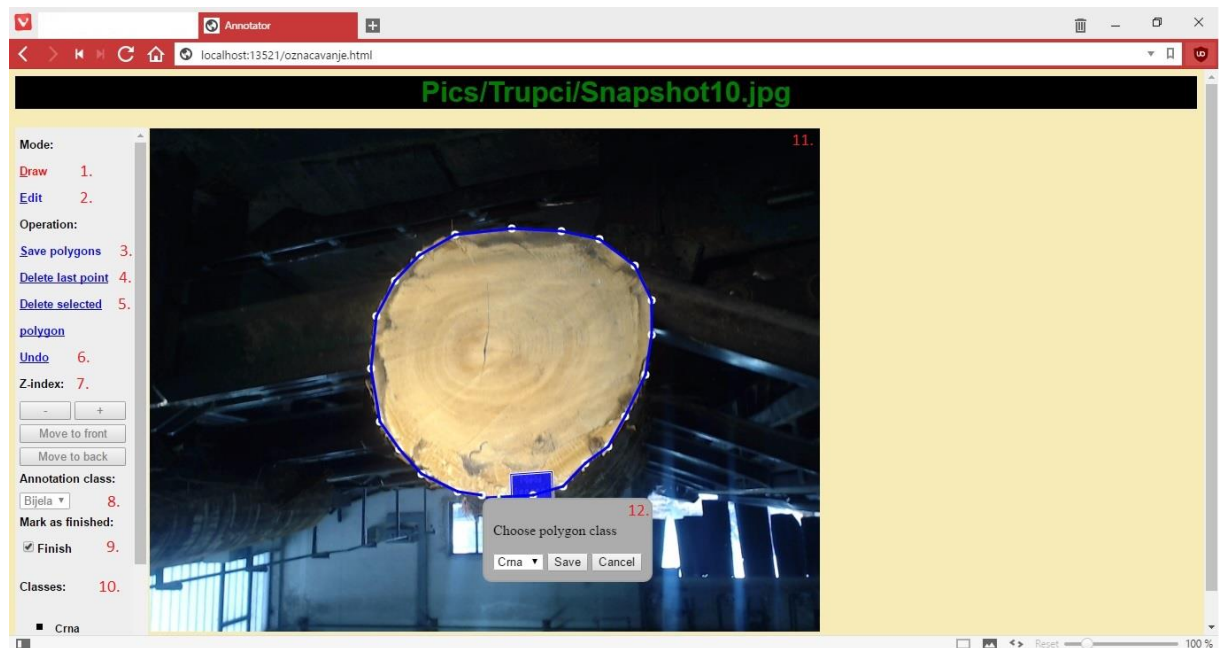
HEX Color (like ff0000)

repeat...

After all this is set the users are ready to start annotating. To use Annotator the users must connect to the server with their web browsers (anything newer than IE9 will be fine) and use it like any other web application or web site.

2. User interface

2.1. Annotator

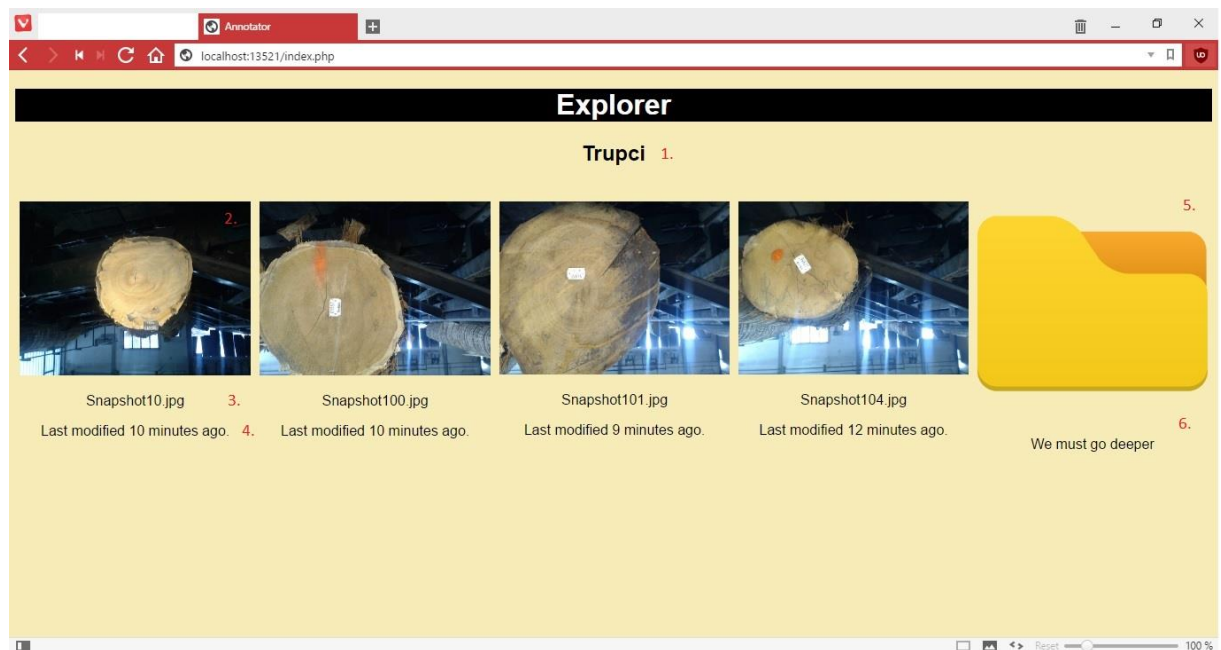


Picture 1: Annotator

1. **Draw mode:** this mode enables annotation drawing on the picture. After this mode is selected the user can start drawing annotations with the mouse on the picture. Left click draws a new point on the annotation. After one point has been made the user can make rectangle with the right click or continue drawing polygon with the left click. Right click finishes all drawing actions. Mouse wheel is used for zooming action (this also applies for the edit mode).
2. **Edit mode:** this mode enables editing of the user made annotations. In this mode user can select annotations, delete them, move points and change their z-index. To do this the user must first select annotation with his left click after which the annotation will change color. After that the user can move points with his mouse or other available actions. Canceling edit on the current annotation is made by clicking on the empty space on the picture or going into draw mode. In this mode picture panning with the mouse is also enabled.
3. **Save polygons:** After clicking on this the user saves its annotations on the server. Pop-up also informs him if the action has been successful.
4. **Delete last point:** Clicking on this deletes last drawn point in the draw mode. If the point was the last one left then the whole annotation is deleted.
5. **Delete selected polygon:** Clicking on this deletes the polygon that has been selected in the Edit mode.
6. **Undo:** Clicking on this removes user last action, for example: drawing points or whole annotations.
7. **Z-index:** this set of controls is for setting Z-index (order how the objects are stacked one on another) of the annotation. Use + and – controls for incremental setting of the index, „Move to front“ if you want to set annotation on the top or „Move to back“ if you want to set annotation on the bottom. Newly drawn annotation is set to the top by the default.
8. **Annotation class:** use this control if you want to change the class of the already drawn annotation. This control can be used only in Edit mode.

9. **Mark as finished:** this control is used to mark annotating on this picture as finished. Every picture which is marked as finished will have its title colored green instead of default red.
10. **Classes:** this is list of user defined classes along with their names and their associated color.
11. **Working canvas:** this is the place the annotations will be drawn and edited. Pictures are automatically scaled by their aspect ratio and resolution to fit the user monitor so that user won't have to scroll them vertically or horizontally.
12. **Pop-up window:** this windows pops up when the user right clicks in the draw mode. Here the user can choose from the list of classes for the annotation and then decide whether it wants to save the annotation or continue working on it.

2.2. Explorer



1. Current folder
2. Picture thumbnail
3. Picture name
4. Time after last annotation
5. Folder icon
6. Folder name

3. Keyboard shortcuts

S – Save annotations

D – Draw mode

E – Edit mode

Delete – Delete annotation or last drawn point

PgUp – Previous picture in folder

PgDn – Next picture in folder

Left arrow – Pan left

Right arrow – Pan right

Up arrow – Pan up

Down arrow – Pan down

Ctrl + Z – Undo

4. Annotation format

Every annotation on the server is saved in the same folder as the pictures. Annotations are in the .txt file with this format:

Line 1: true/false -> true if the picture annotations are marked as finished, false if it isn't

Line 2: width height -> width and height of the picture in pixels

Line 3: JSON string with annotations

Example of the JSON string:

```
[{'shape':'polygon','pts_x':[294,345,344,283],'pts_y':[395,395,494,493],'class':'Car'}]
```

This is the example of the one annotation.

First attribute is 'shape' which can have two values: 'rectangle' and 'polygon'. This is because of the different handling of these two objects in the Annotator itself.

Second attribute is 'pts_x' which is nothing more than the array of the x coordinates of the annotation. Same thing applies to the 'pts_y' but only for y axis.

Fourth attribute is 'class' which is name of the some user defined class in that folder.

This type of formatting enables easy parsing of the points and their rasterization. It also uses very little storage space compared to the, for example, .psd format (especially if the annotation files are also compressed in .zip or .rar file).