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Thessaloniki

Zagreb

La Sénia

Aradippou

Lowicz

TAKING PHOTOS FOR 3D MODEL & DOCUMENTING TEAM WORK

Geodetska škola, Zagreb



CROATIA



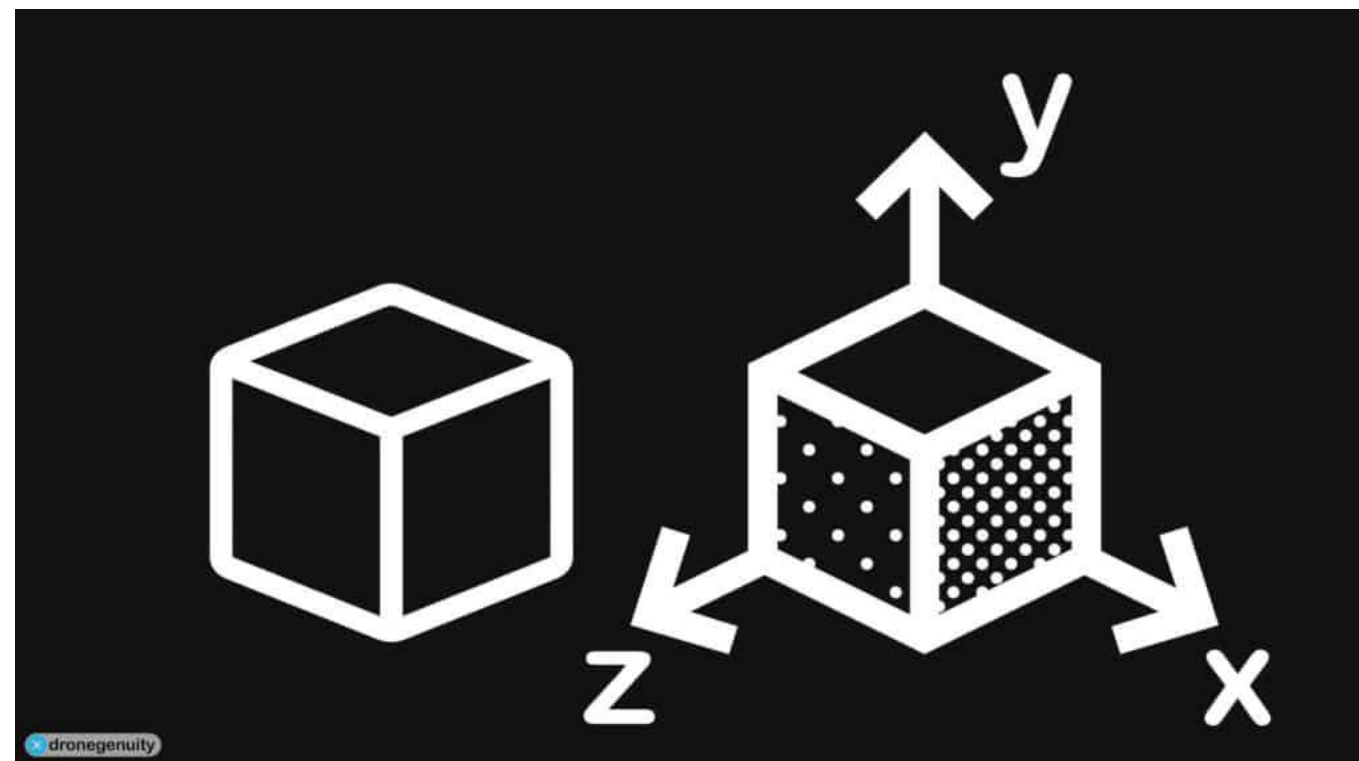
3D Modelling

3D modeling is the process of creating a 3D representation of any surface or object.



3D Model

A 3D model is a model with three dimensions on the X, Y, and Z- axis.

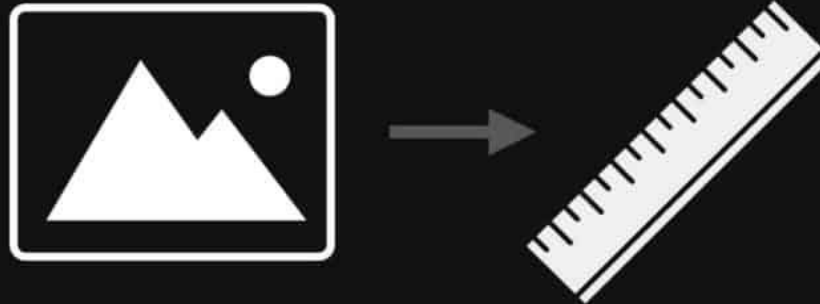


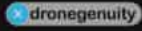
Photogrammetry

The science that enables the process of converting a series of images into a 3D model is photogrammetry

Photogrammetry

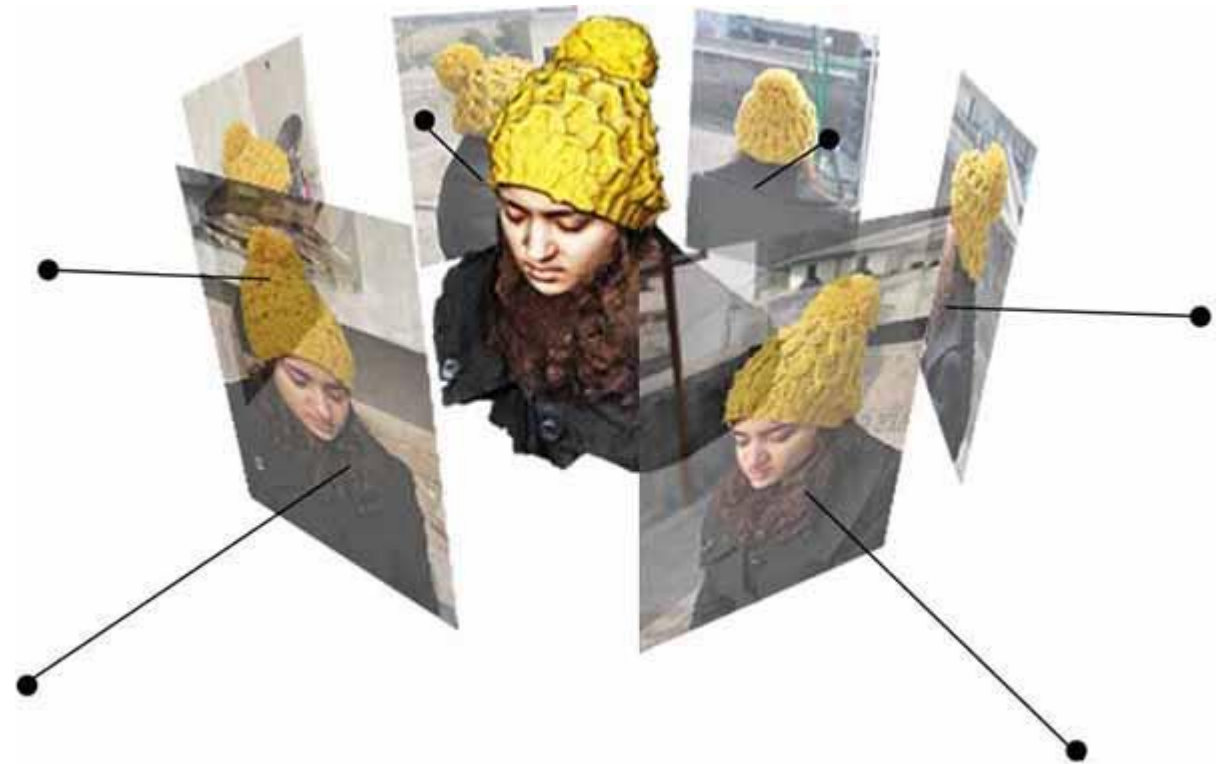
The science of making measurements from photographs





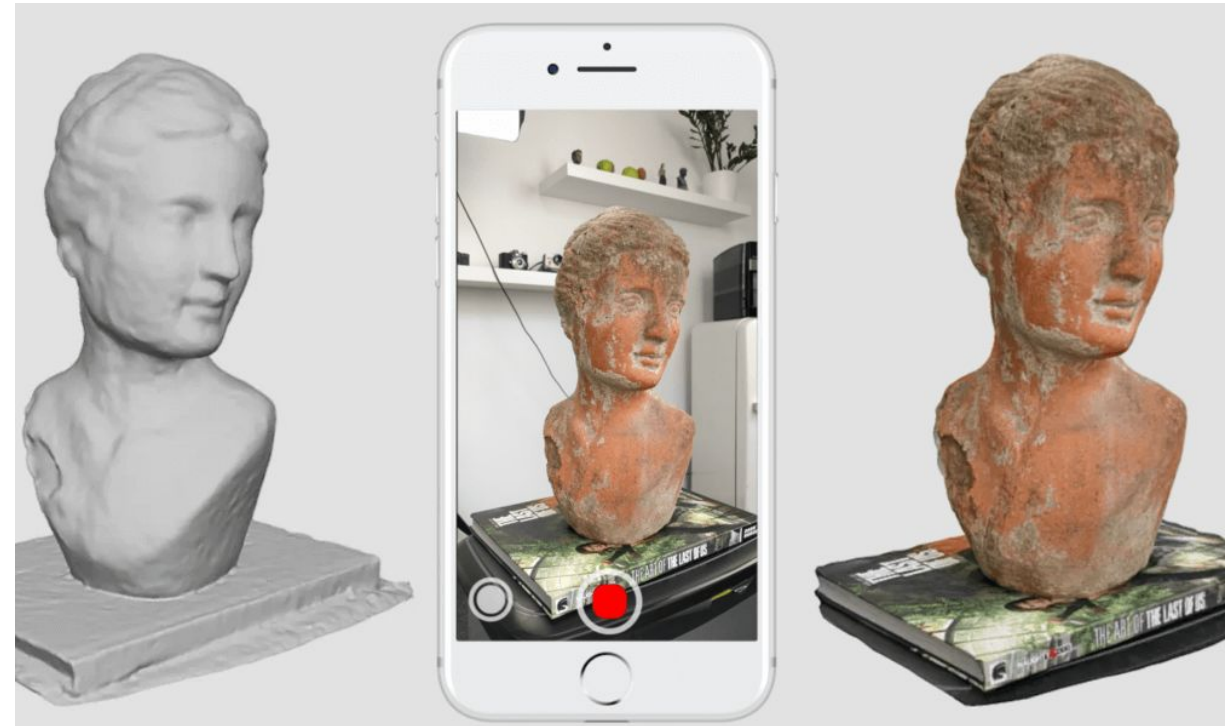
Photogrammetry

The input to photogrammetry is photographs, and the output is typically a map, a drawing, a measurement, or a 3D model of some real-world object or scene.



Equipment

You can use any camera for this, a smartphone camera will work just fine





Location

First scout the locations.
Exit with the camera. Find
the object and take a few
reference shots.



Object

Statues are perfect for photogrammetry, there are lots of details, their surface is rough, unable to cast any reflections.





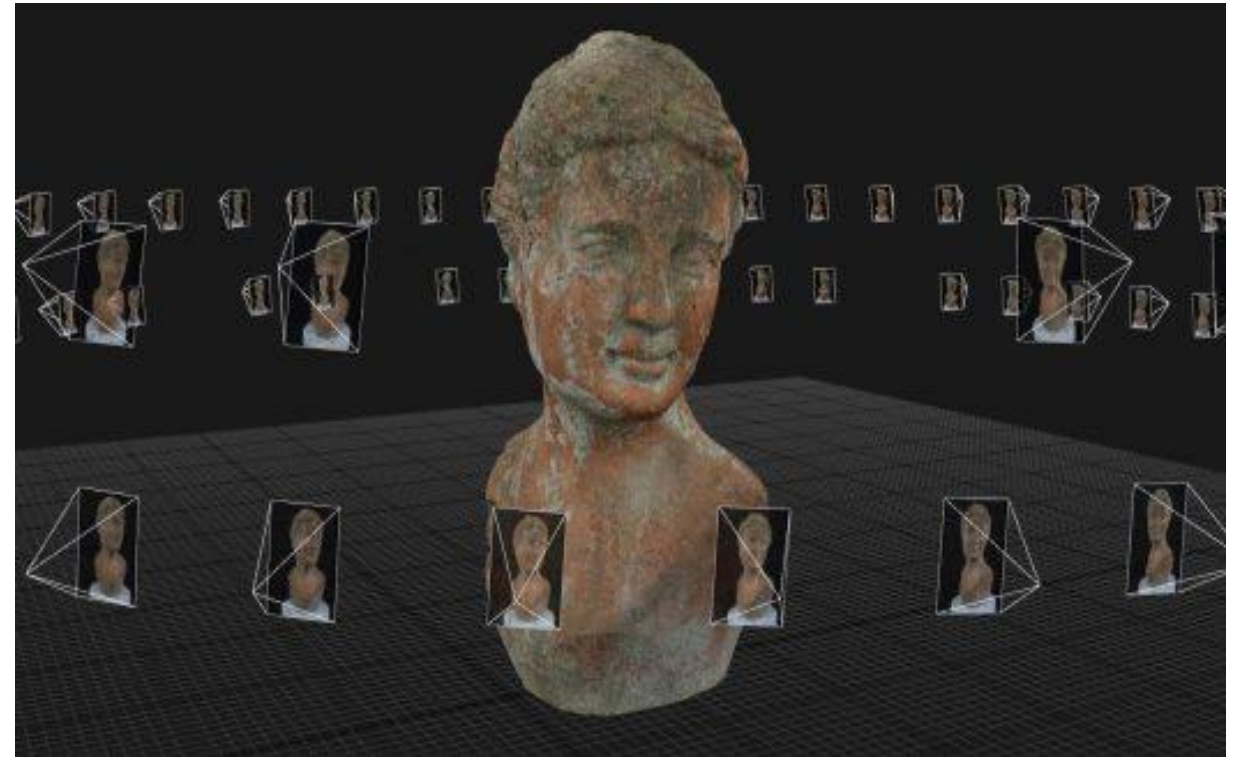
Capturing the object

Capture your object by taking pictures of it. These images will serve as the foundation for the rest of your project and will later become a 3D model.



Photographing

In order to make a 3D print based on photos, we first need to get the right images.



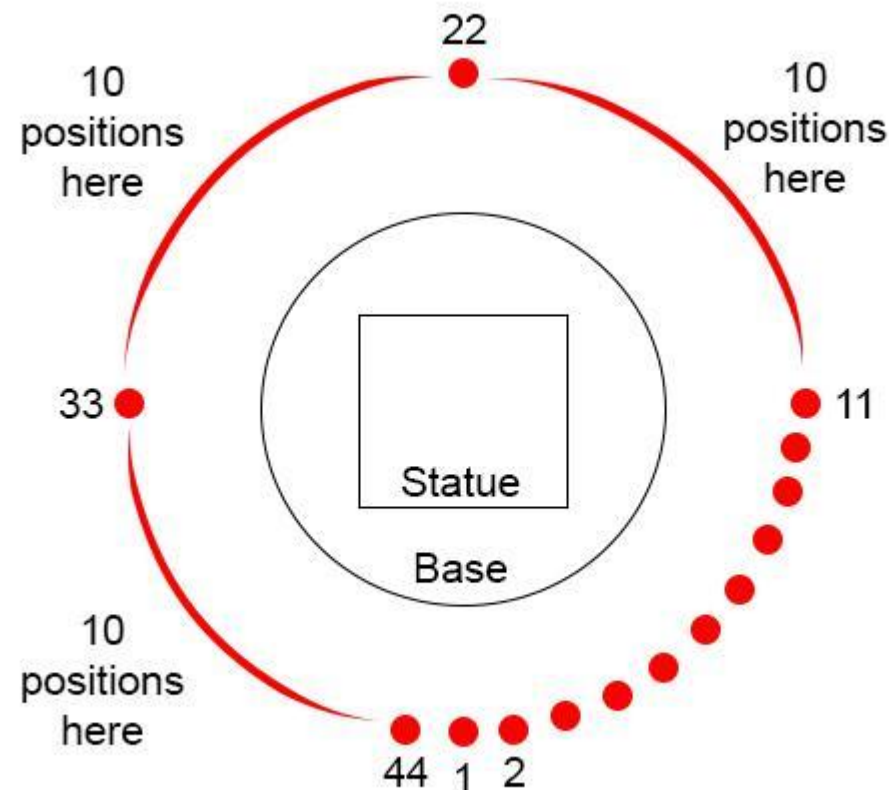
Photographing

Move around the target object in circles.

Do not move the object or its surroundings between pictures.

You must have at least **20** photos per object.

50 photos is maximum.



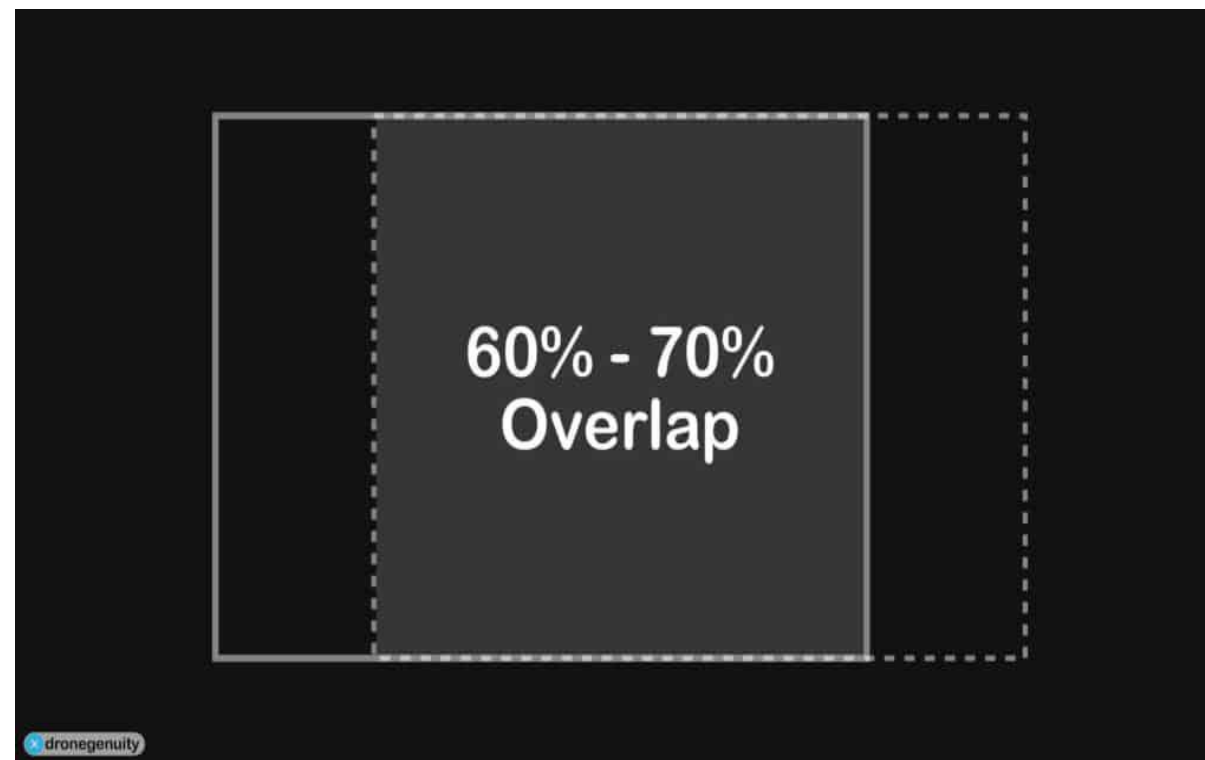


Overlap

For 3D vision we need an **overlap of about 80%**.

Each new image must show 20% more scenes than the last image.

Always shoot in portrait (vertical) orientation.

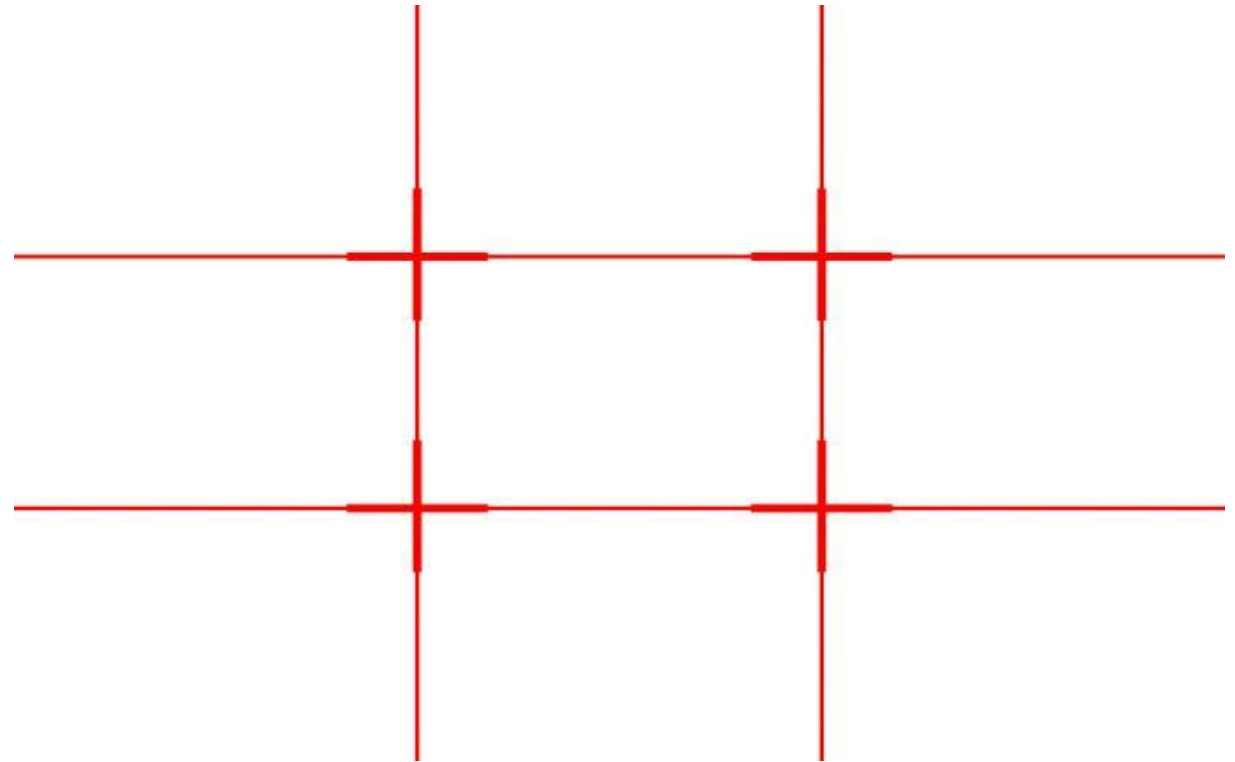




Composition

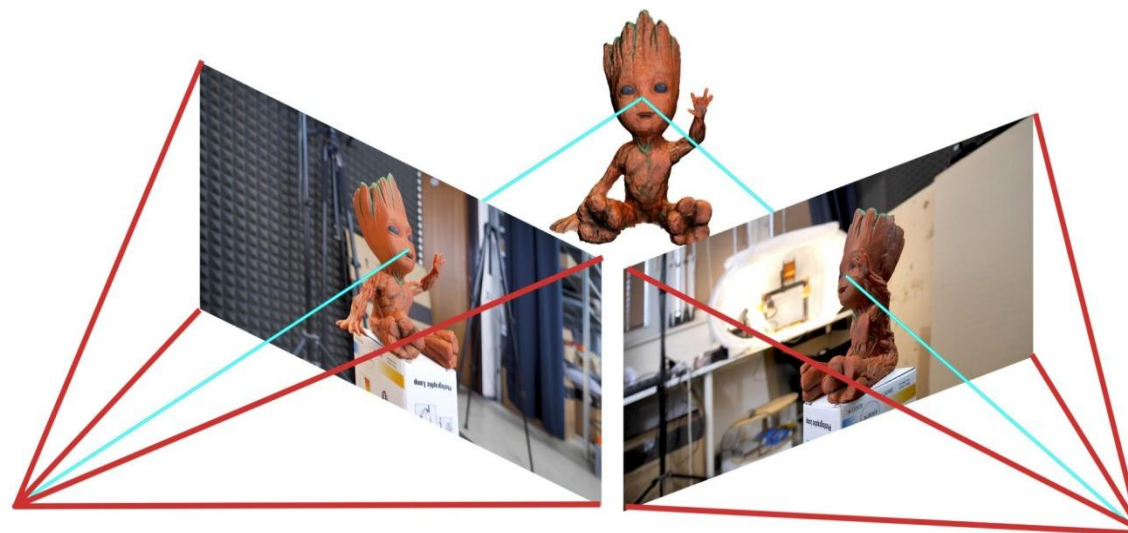
Composition represents the way the subject and objects are arranged within a frame. The rule of thirds is dividing your frame into nine equal rectangles.

The object should make a significant portion of each image.



Composition

Always have a reference point on the object to orient your shots.
The head of the statue can be used as a good reference point.





Shooting

The object should make a significant portion of each image. The three images will follow a procedure.



Shooting



By using the rule-of-thirds grid on the camera's Live View, you could line everything up, straight and flat.



Shadow

Avoid hard shadows, use diffuse lighting or take the pictures outside on a semi-cloudy day.
If you do have to shoot on a bright day, go for the morning or evening.





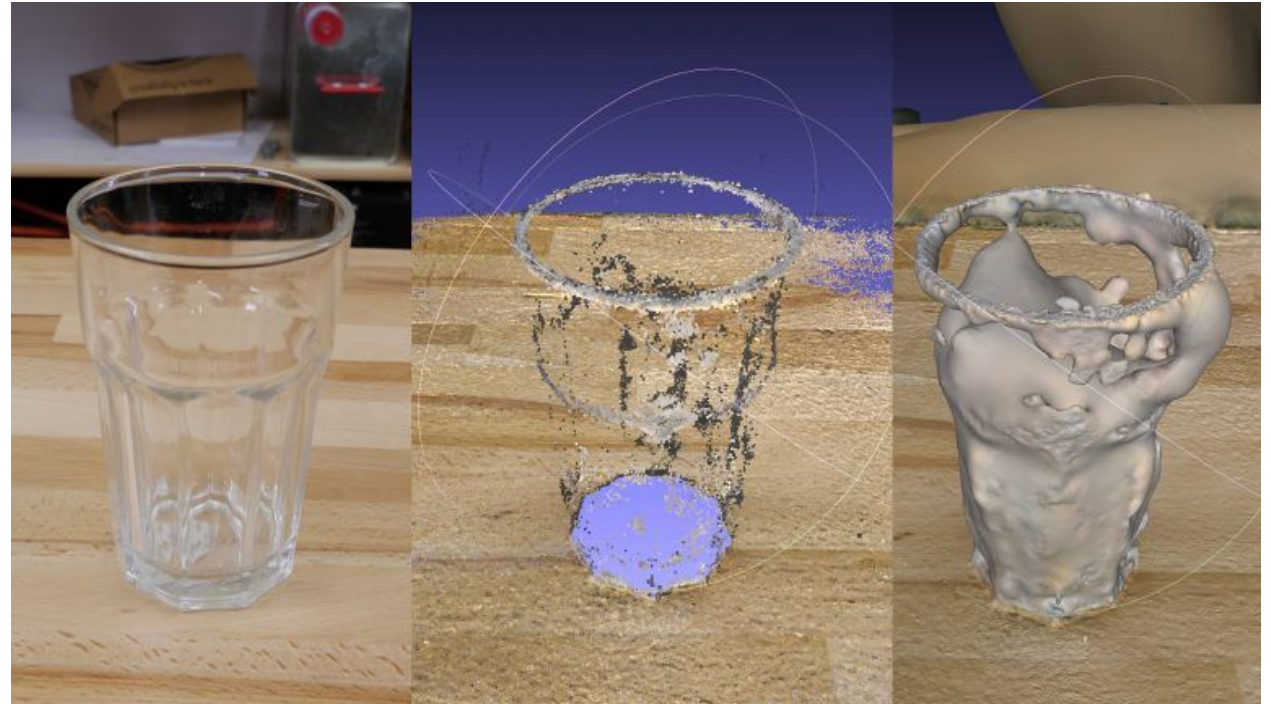
Moving targets

Avoid moving targets.



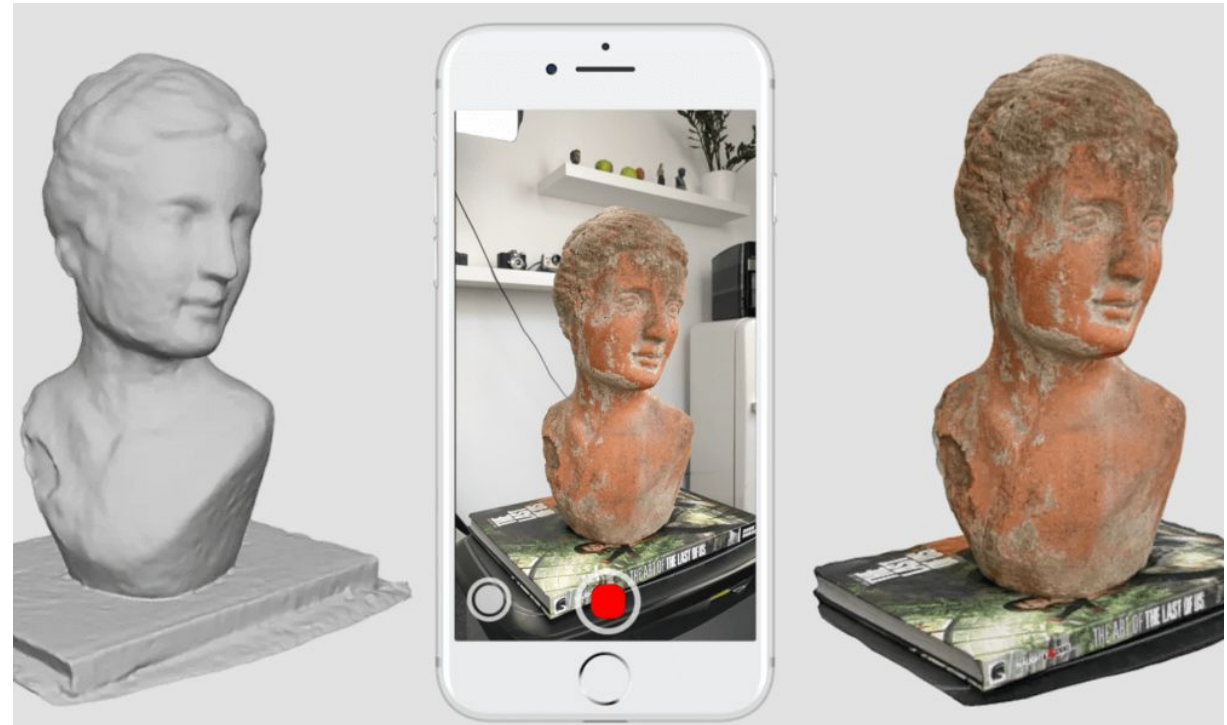
Glossy targets

Avoid very glossy or transparent targets because it changes in appearance and reflects surrounding light sources



Reconstructing

Quickly go through the photos and delete any blurry ones.





Upload your images for 3D model

- Croatia: <https://bit.ly/3b04hPh>
- Cyprus: <https://bit.ly/2SoaoXl>
- Greece: <https://bit.ly/2PlxHKj>
- Poland: <https://bit.ly/3xQUSDJ>
- Portugal: <https://bit.ly/33a4qeF>
- Spain: <https://bit.ly/3vE3ZWo>



Documenting Team Work

In order to document your team work and have fun take some pictures.

You are going to use some of the pictures in your presentation and for the Challenge.



Documenting Team Work

- Take pictures showing the way to the statues



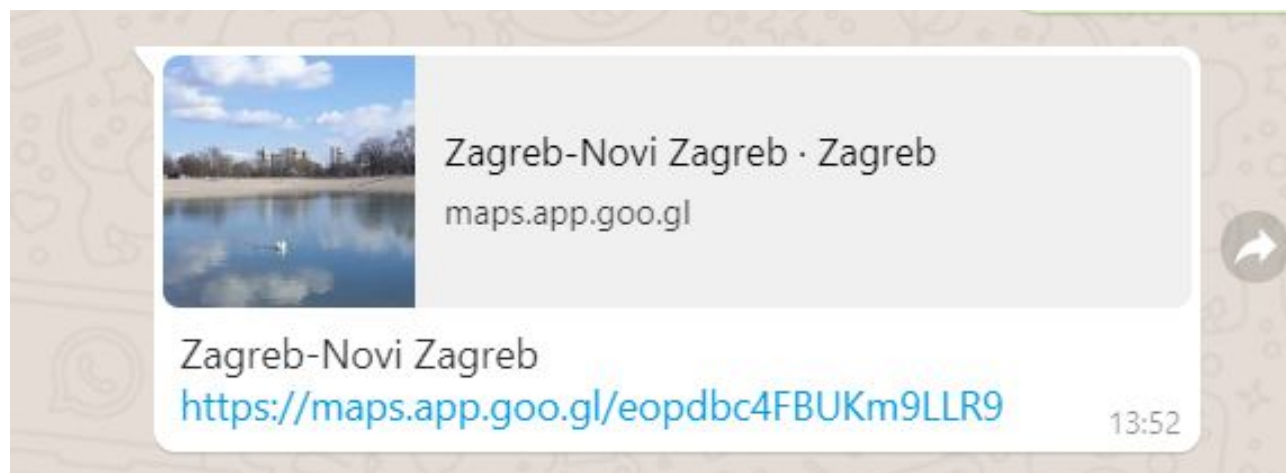
Documenting Team Work

- Take a picture of the group in front of the statue
- Take a selfie or take a photo of anything that is fun or important to you (e.g. your favorite meeting spot, eating place, favorite sight, sports ground, bus stop where students arrive to school,... or anything that comes into your mind).



Documenting Team Work

- Mark the spot of the statue on Google Maps and share it in WhatsApp group *STEAMS ZG 2021*



- Write comments if you see something similar or very different to your school or place!



REFERENCE LIST:

URL 1. <https://www.3dflow.net/technology/documents/3df-zephyr-tutorials>

URL 1. <https://i.materialise.com/blog/en/how-to-make-a-3d-printed-object-from-a-photo-in-5-easy-steps/>

URL 3. <https://www.dronegenuity.com/aerial-photogrammetry/>

URL 4. https://blog.prusaprinters.org/photogrammetry-3d-scanning-just-phone-camera_7811/



Erasmus+



Thanks!

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