POWER OF AR AND VR

CLASS-VR LESSONS

Co-funded by the European Union

JACEK KAWAŁEK

IMPORTANT

FIRST OF ALL, YOU NEED TO CAREFULLY EXPLAIN AND ENFORCEMENT THE SAFETY RULES FOR USING 3D GLASSES

WE IMPLEMENT OUR PROJECTS ON TWO SYSTEMS

HTC

CLASS VR

FOR HTC GLASSES WE USE UNITY

THIS IS A GREAT SYSTEM

BUT IT ALLOWS YOU TO INVOLVE ONE PERSON

POWER OF AR AND VR

OF COURSE THIS CAN BE SOLVED DIFFERENTLY BY CREATING WEBSITES OR APPLICATIONS FOR USE ON A COMPUTER OR SMARTPHONE

LEKCJE Z CLASS-VR

A SOLUTION THAT CAN BE USED MORE EFFECTIVELY IN CLASSES IS TO USE THE CLASS-VR SYSTEM

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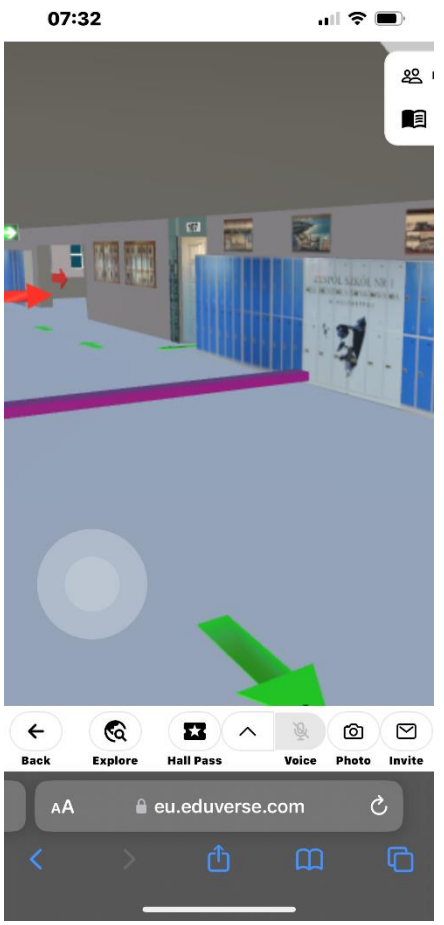
IN THIS SYSTEM WE CAN ANALYZE
MANY STUDENTS AT THE SAME TIME

LEKCJE Z CLASS-VR

ADDITIONALLY, WE CAN ALSO USEMULTIPLE COMPUTERS AND SMARTPHONES



I WILL NOT EXPLAIN HOW TO USE THIS SYSTEM

ALL INFORMATIONAND TUTORIALS ARE VERY WELL PRESENTEDON THE INTERNET

EVERY SYSTEM HAS SOME LIMITATIONS

HOWEVER, IN ORDER TO USE IT EFFECTIVELY, YOU HAVE TO SIMPLY KNOW IT

YOU SHOULD BE AWARE

THAT WE DO NOT HAVE TO PRESENT EVERYTHING WITH 3D GLASSES

NA PRZYKŁAD

ANIMATION THAT WE DID AS STANDARD FOR BIOLOGY IN BLENDER WILL LOOK VERY GOOD ON A BIG SCREEN

BIOLOGY

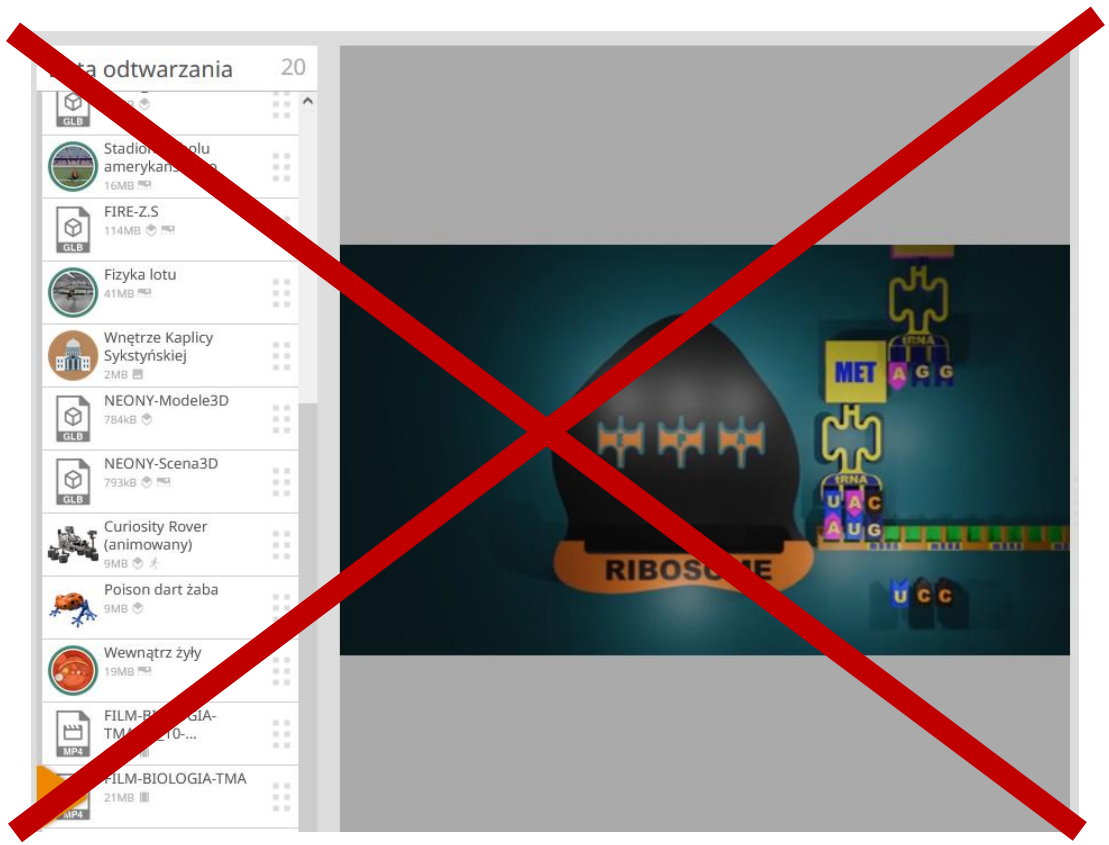
PROTEIN BIOSYNTHESIS

YouTube

https://youtu.be/NgaW5EXi17Y

HOWEVER,

IT IS NOT AT ALL SUITABLE FOR PRESENTATION IN 3D GLASSES



TO SHOW THIS MOVIE IN 3D GLASSES IT NEEDS TO BE RENDERED IN

4K

IN

10 FOKAL LENGTH

BIOLOGY

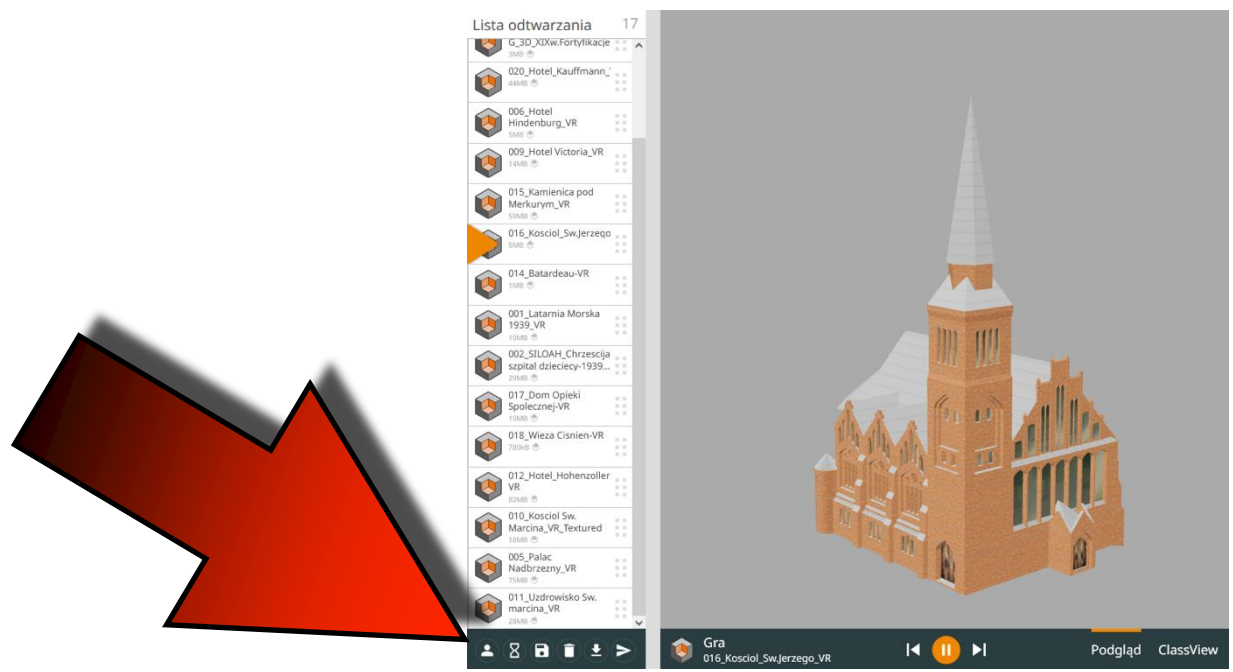
PROTEIN BIOSYNTHESIS

4K 10 FOCAL LENGH

YouTube

https://youtu.be/Eg2bdVH9Wo0

THE USE OF 3D GLASSES IN CLASSES SHOULD BE INTRODUCED GRADUALLY BY USING THE AVAILABLE TOOLS THAT NEED TO BE KNOWN VERY WELL



THE USE OF 3D GLASSES SHOULD NOT BE LONGER THAN 10-15 MINUTES DURING A LESSON

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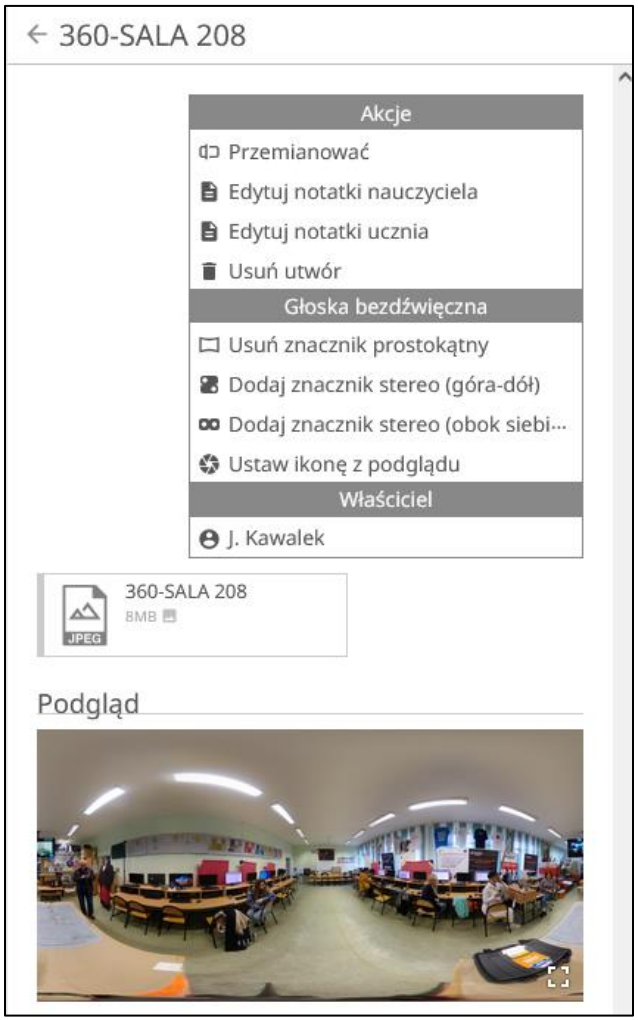
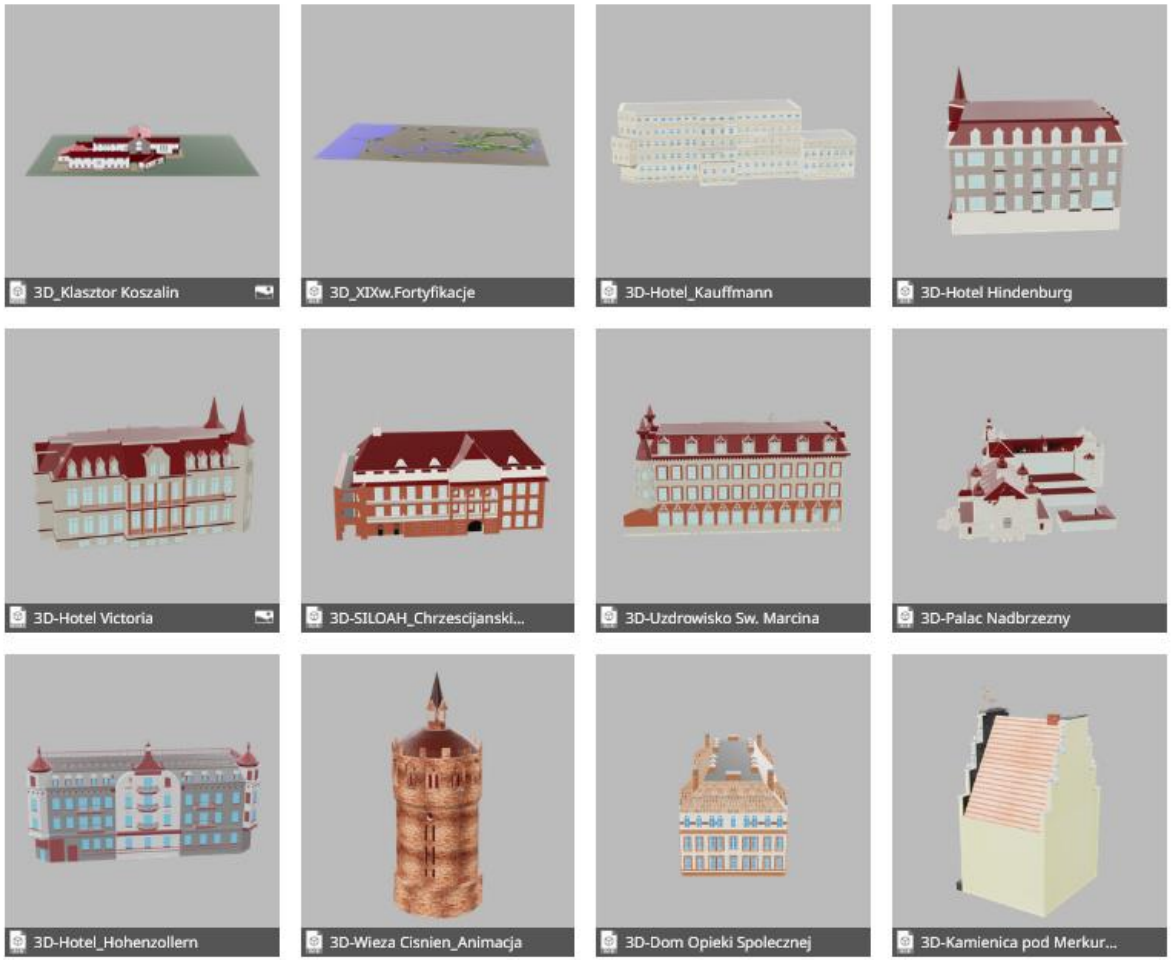
360 PHOTOS AND VIDEOS LOOK VERY GOOD IN THIS SYSTEM WHICH CAN BE EASILY TAKEN WITH A DRONE OR 360 CAMERA

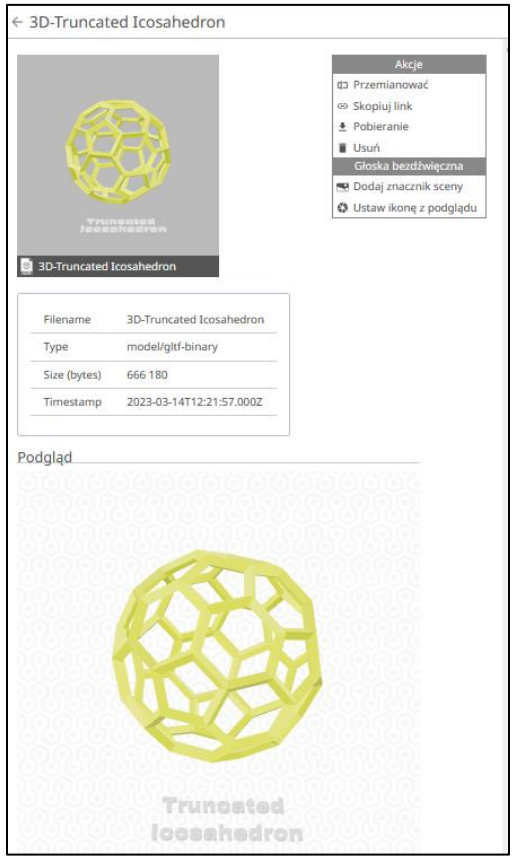


LEKCJE Z CLASS-VR

WHEN CREATING YOUR OWN MODELS AND SCENES IT IS GOOD TO USE ICONS THAT MAKE IT VERY EASY TO FIND THE RIGHT MODEL

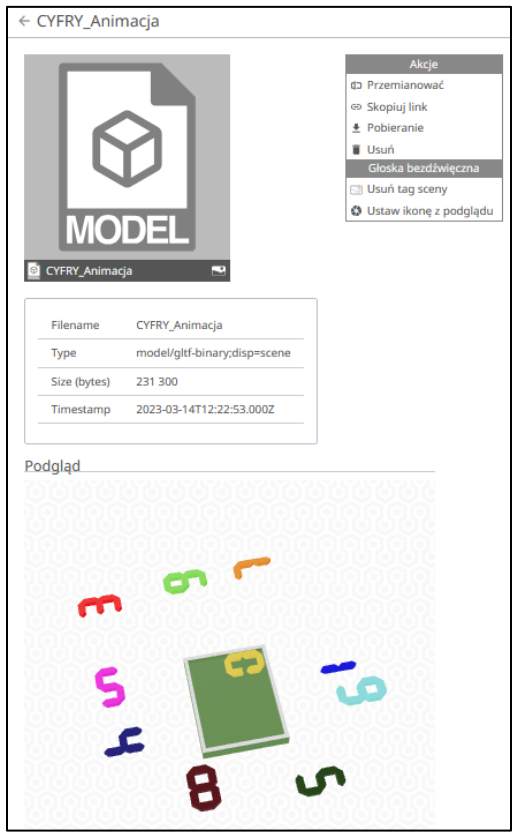


FOR BETTER EFFECTS DURING CLASSESWE CAN COMBINE 3D GLASSES WITH 3D PRINTING



YOU CAN PRESENT A SHORT ANIMATIONIN GLASSES OR ON THE SCREEN AND AFTER TURNING IT OFF

GIVE THE PRINTED BLOCKS TO BE ARRANGED

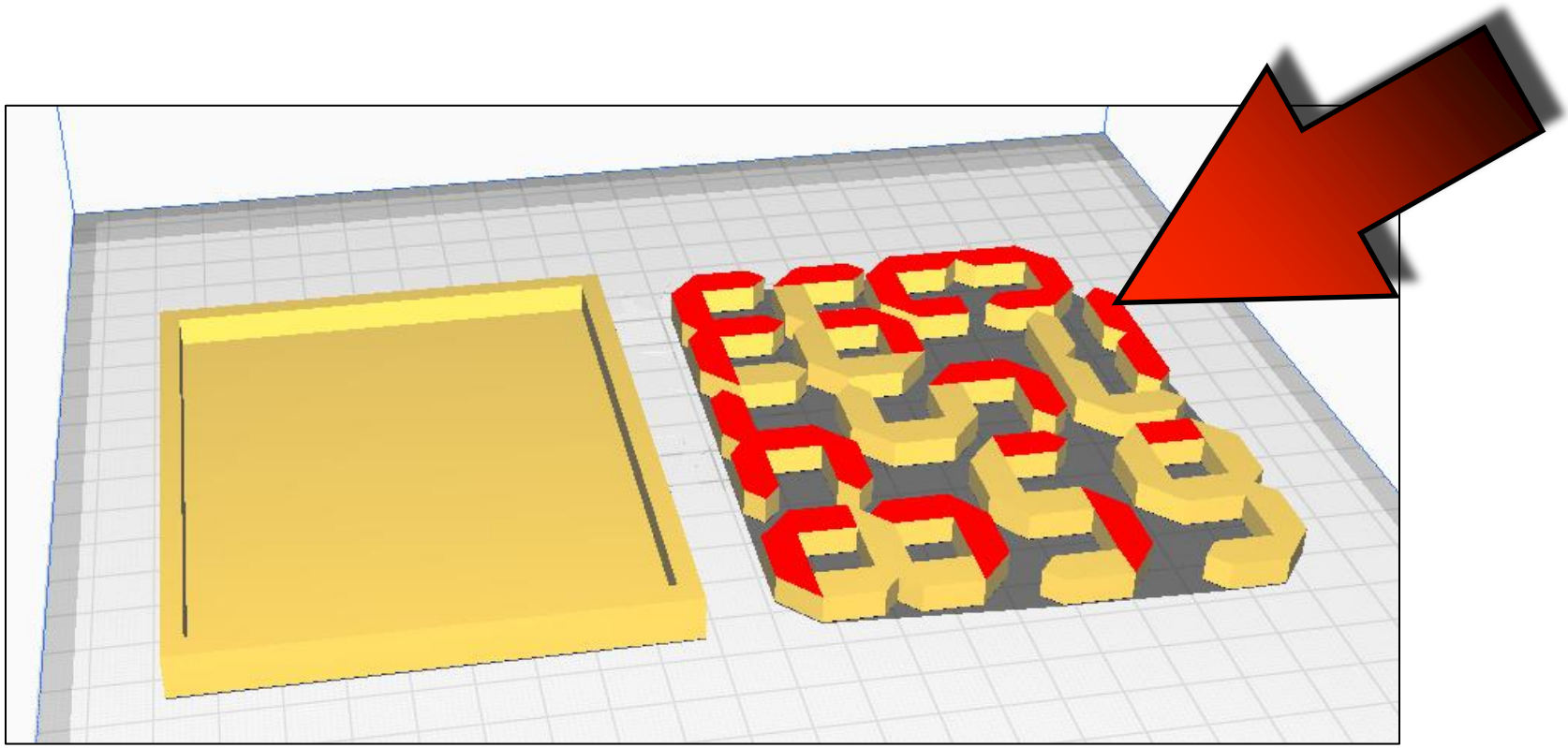


YouTube

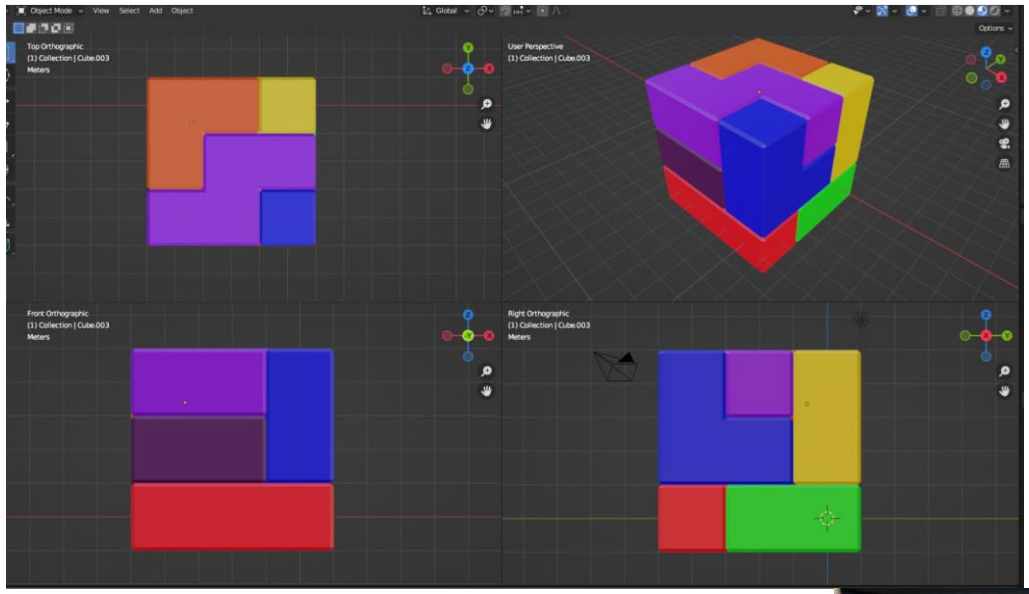
https://youtu.be/IzmngNM3iWI

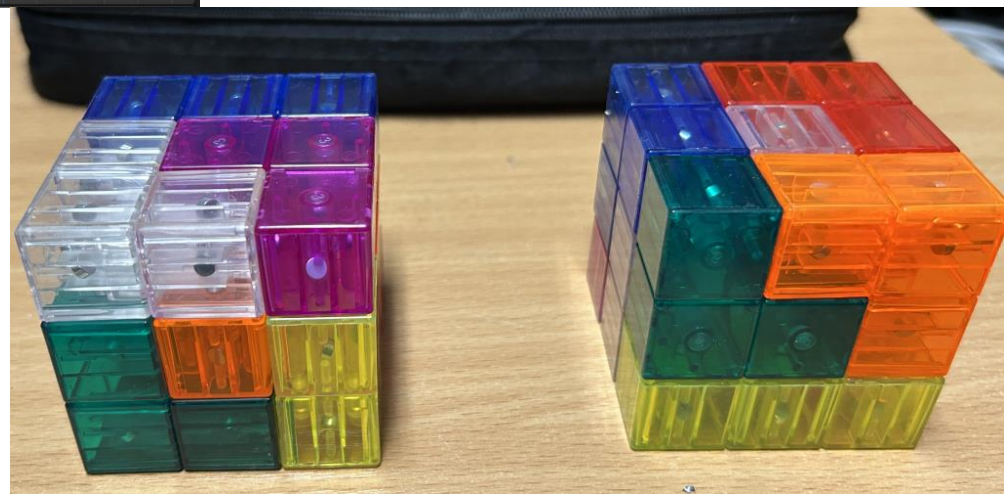
WHEN PRINTING, REMEMBER THAT THE WALLS IN THE MODELS ARE CORRECTLY REVERSEDIN THE ULTIMAKER CURA PROGRAM, THE RED COLOR INFORMS US ABOUT THE WRONG WALLS.

THIS IS DESCRIBED IN THE TRAINING ON NUMBERS



SIMILARLY, WE CAN USE OUR PREVIOUS EXERCISE AND USE MAGNETIC CUBES





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FOR BIOLOGY LESSONS WE HAVE PRINTED OVER 600 BLOCKS WHICH ARE VERY ENGAGED IN STUDENTS

LEKCJE Z CLASS-VR

CLASS-VR SYSTEM CAN BE USED IN TWO WAYS

WHEN IT IS CONNECTED TO THE INTERNET

OR WHEN THERE IS NO POSSIBILITY TO USE IT

IN BOTH CASES, I RECOMMEND UPLOADING THE MODELS TO THE GLASSES BEFORE THE CLASSES

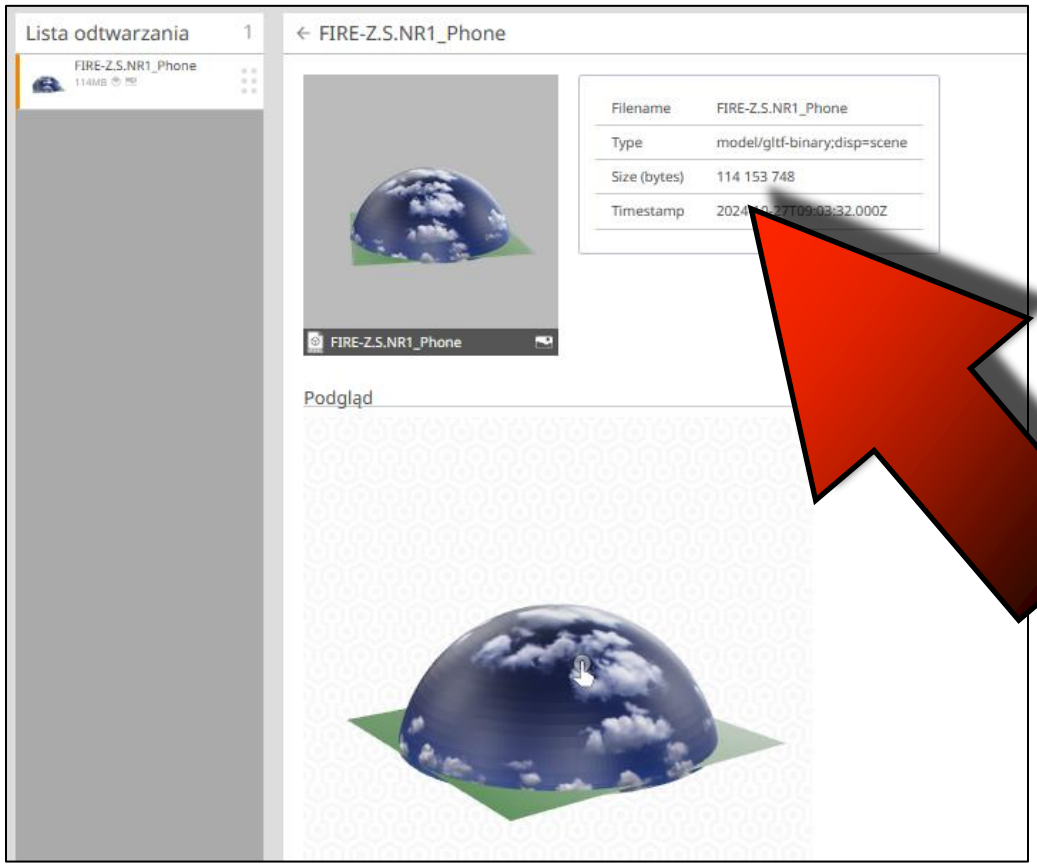
EVEN THOUGH WE REMOVE THEM FROM THE LIST, THEY WILL BE WRITTEN IN THE GLASSES

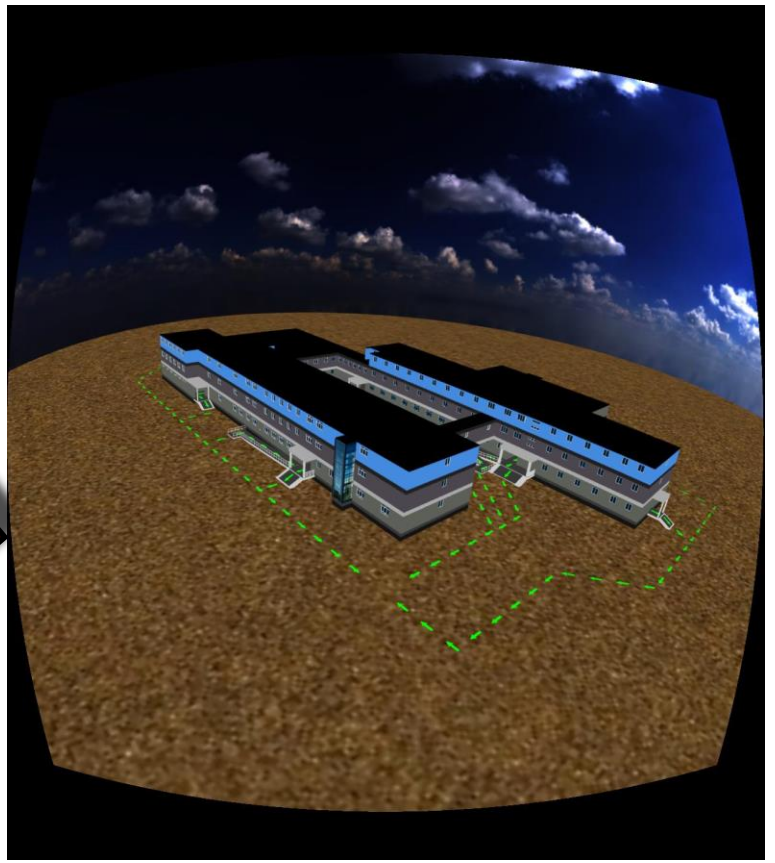
AND WHEN YOU CALL THEM AGAIN THEY WILL BE LOADED QUICKLY

HOWEVER, WHEN WE DO NOT HAVE ACCESS TO THE INTERNET, WE NEED TO UPLOAD THE ENTIRE LIST

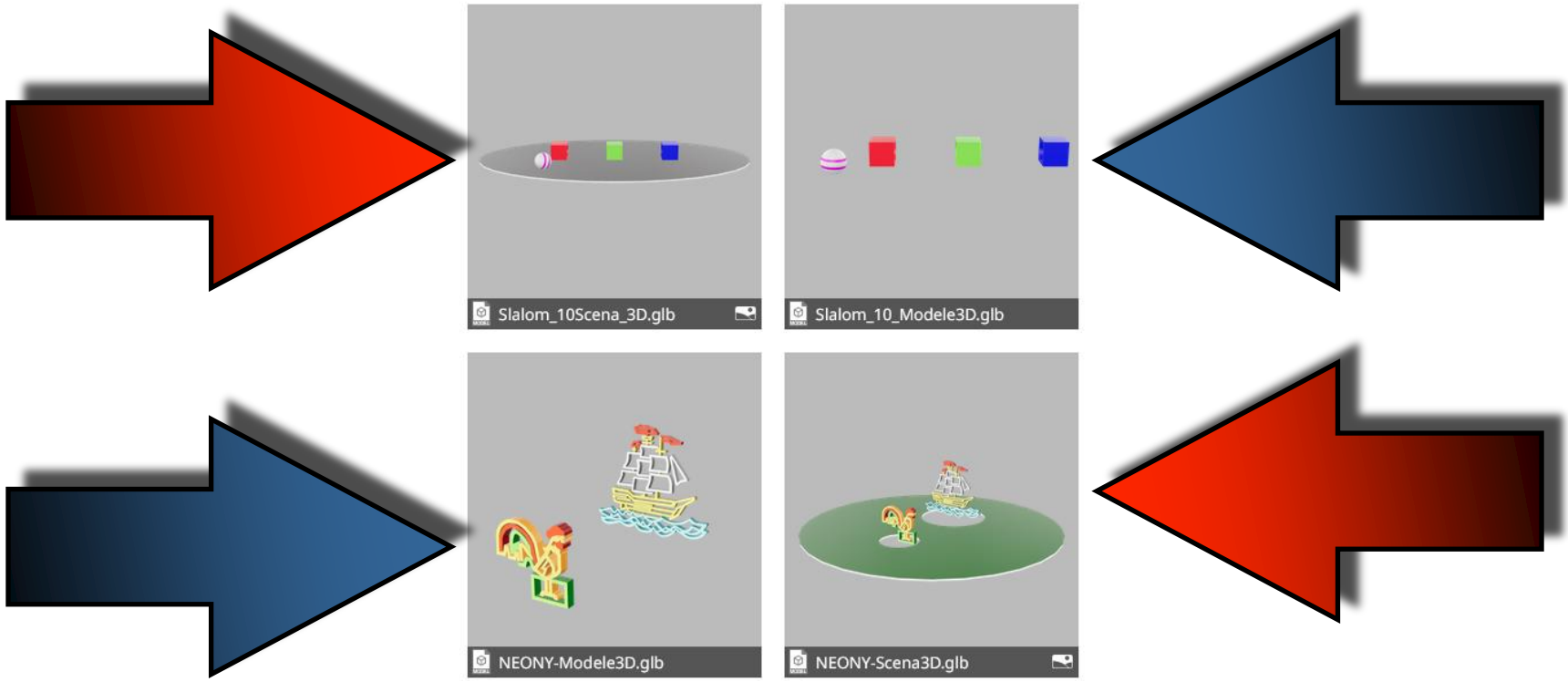
THIS IS A VERY USEFUL WAY WHEN WE GO SOMEWHERE TO CONDUCT TRAINING AND WE DON'T KNOW WHAT THE INTERNET ACCESS WILL BE LIKE.

EVEN IF WE HAVE ACCESS TO THE INTERNET, IT IS BETTER TO UPLOAD SUCH LARGE MODELS IN ADVANCE TO THE GLASSES



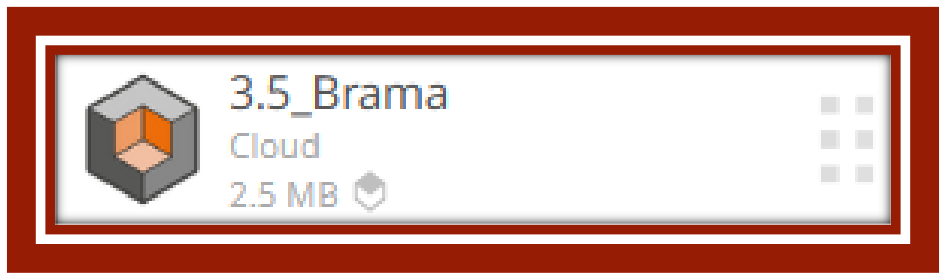


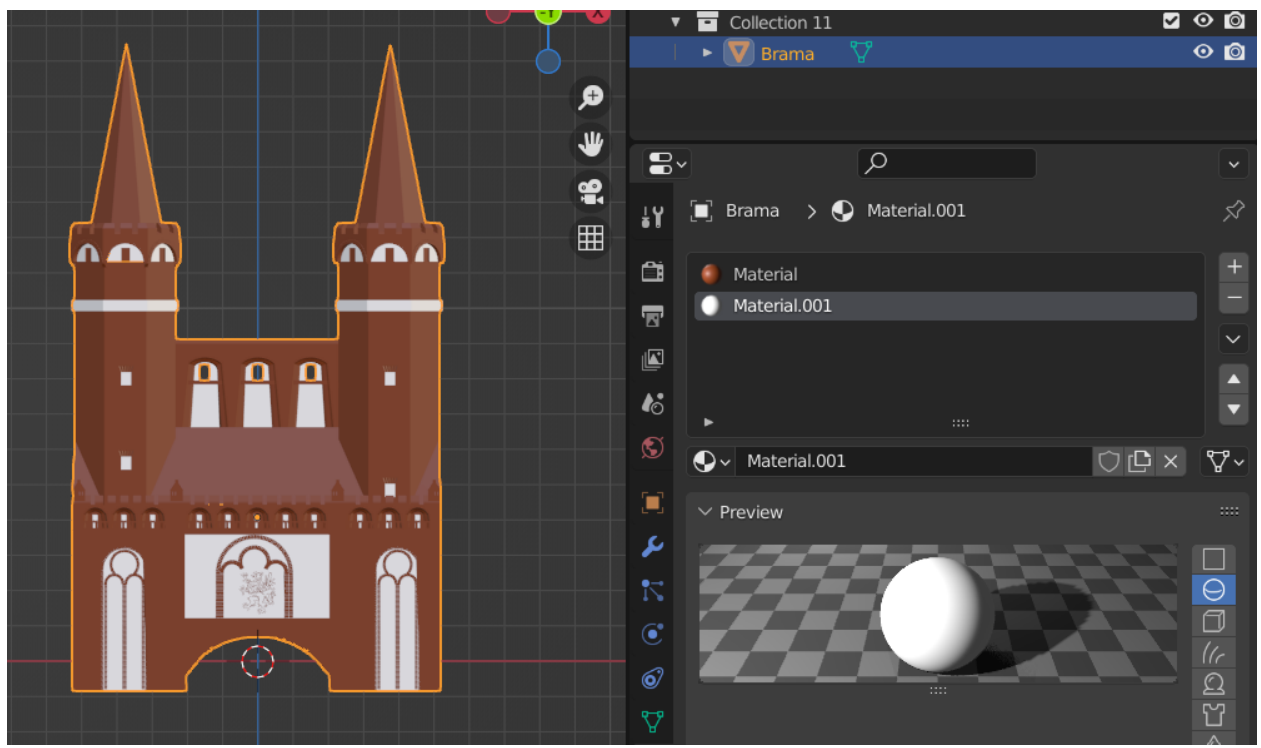
YOU SHOULD ALSO CHECK BEFORE WHICH WILL BE BETTER FOR PRESENTATION A SCENE OR A 3D MODEL



WHEN CREATING YOUR OWN MODELS, TRY TO KEEP THE MESH AS SIMPLE AS POSSIBLE

THIS MODEL WILL BE SUITABLE FOR PRESENTATION IN 3D GLASSES





AND AT THE SAME TIME IT CAN BE PRINTED ON A 3D PRINTER AS A GIFT

YOU ALSO NEED TO TRY TO MAKE SURE THAT THE TEXTURE FILES ARE NOT TOO MUCH OF A BUFFER

GRUNT-1.jpg

GRUNT-2.jpg

GRUNT-3.jpg

GRUNT-4.jpg

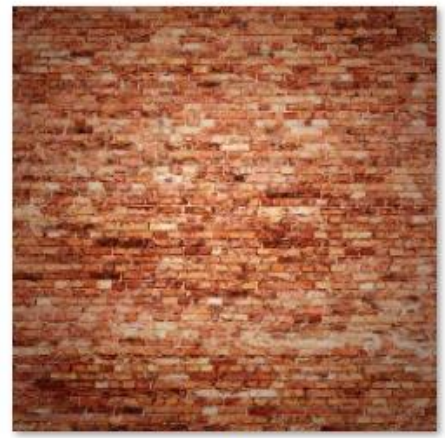
GRUNT-5.jpg

GRUNT-6.jpg

BEFORE USING THE MODEL IN CLASSES,
LET'S CHECK IT BEFORE

4.1_WIEZA_CISNIEN.tif

4.3_1939_Wieza_Cisnien.blend



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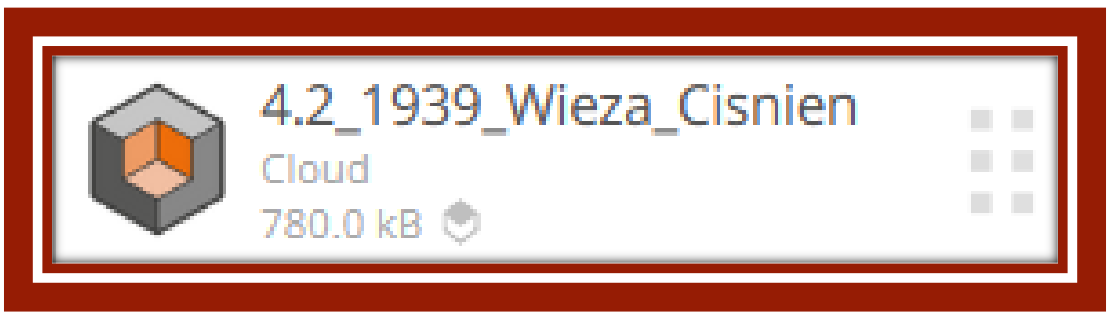
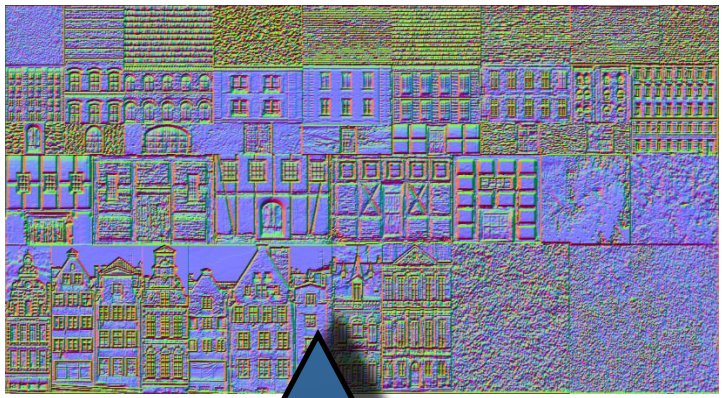
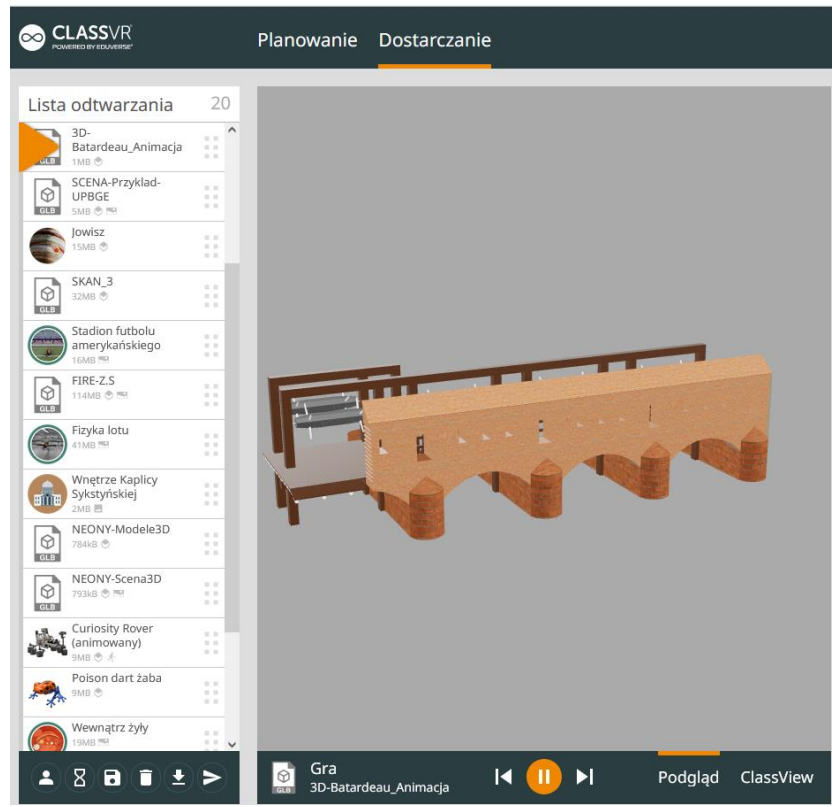


THAT'S WHY IT'S A GOOD SOLUTION TO PUT ALL THE TEXTURES IN ONE FILE, THEN THE SYSTEM WILL LOAD IT MUCH FASTER

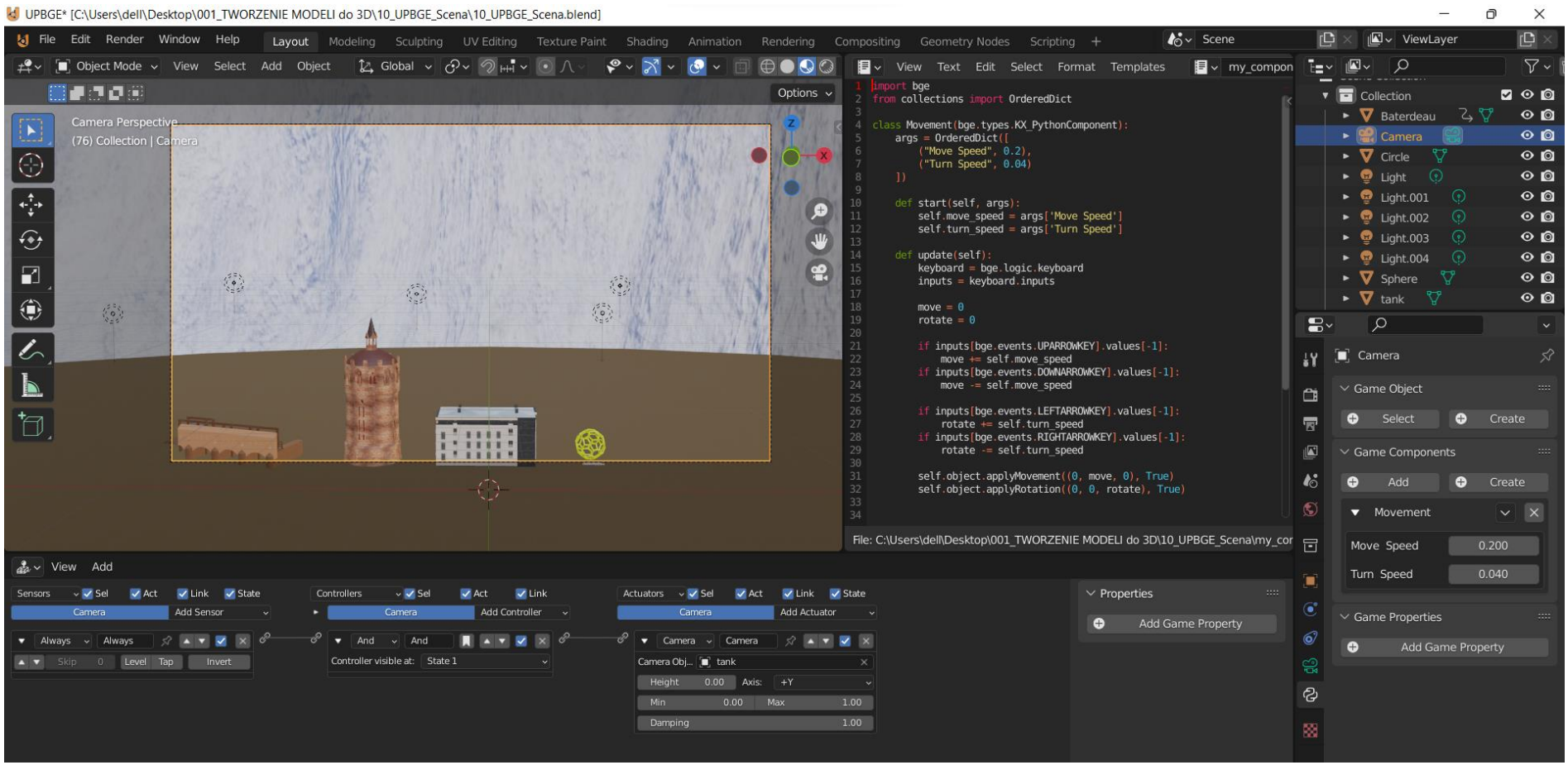
WE CAN ALSO USE NORMAL MAP WHICH WILL GIVE US THREE-DIMENSIONALITY EFFECT WITH A SIMPLE 3D MESH



AFTER THIS TRAINING WE SHOULD BE ABLE TO CREATE OUR OWN 3D MODELS AND EXPORT THEM TO GLB, A FILE THAT THESE SYSTEMS WILL READ



HOW TO CREATE SCENES AND INTERACTIONSI WILL SHOW IN MY NEXT TRAININGS



THANK YOU FOR YOUR ATTENTION

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