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EXPERIMENT NO: 2_Assignment **DATE:29-05-2021**

CREATING AND MEASURING A 3D MODEL BY PHOTOGRAMMETRY

Aim:

To print 3D model using photogrammetric concept

Software Requirements:

FDM Creality E-3 machine, 3D model, PLA filament, peeler, cutter, Autodesk Recap Photo , Ultimaker Cura

Procedure:

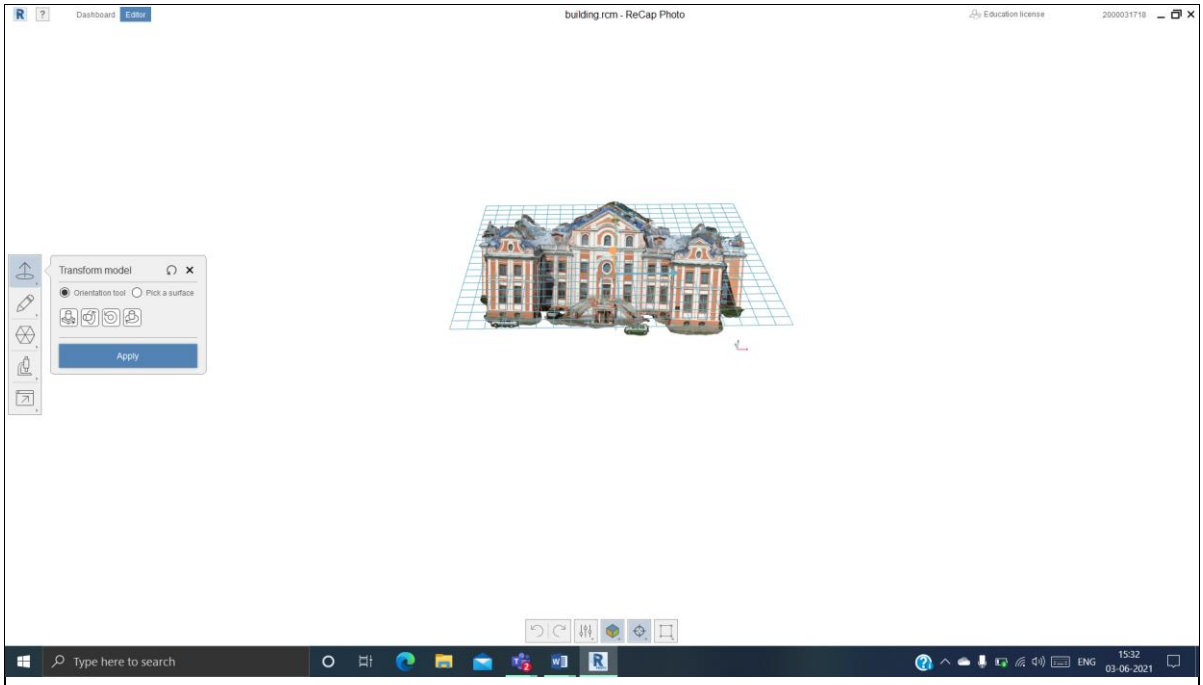
• Select a 3D model to be printed.
• Arrange the suitable background such a way that model visibility should be clear.
• Take pictures of model in 3600 and ensure all parts are captured well.
• Delete repeated and blurred images.
• Store all images in single folder and save it on desktop (preferably).
• Double click on Recap Photo icon and wait to initialize and to run the software.
• After initialization sign in into the app using login credentials.
• After clicking on object it will ask you to upload images of model to be captured and saved.
• After clicking to upload files, select the folder of data, select all images (minimum 20) and click on open

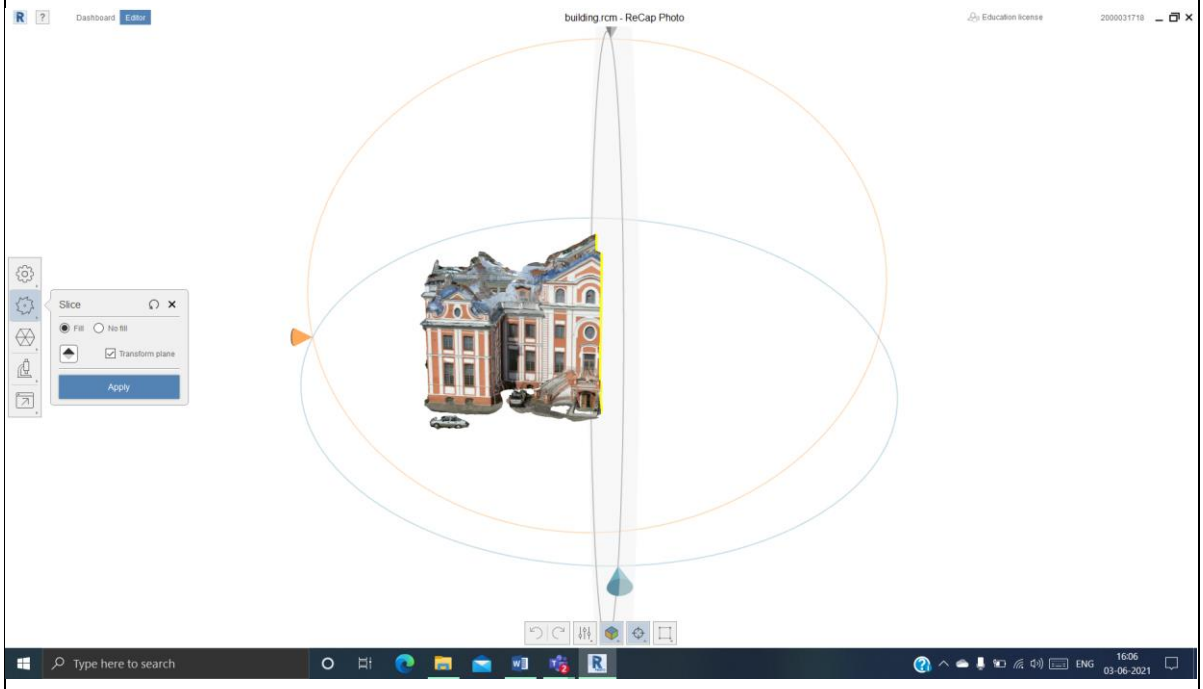
• After opening folder wait till all images selected and click on create.
• After clicking on create it will ask you to give file name, put file name as you wish and click on start
• After clicking on start, you will be come up with photo preparation-uploadingprocessing indication in terms of
• After 100% process completion we will get down load option which can be indicated by downward arrow head. Click on it and download the processed file by selecting the folder/location wherever you wish.
• Downloaded file will be in .rcm format. Click on that to open.
• By using export option we can export model in different formats.
• After clicking as shown in above figure you will get popup to select the format we want, select STL format and click on export
• Finally STL file will be saved which can be edited, sliced and customized in CURA software to generate G codes.(refer experiment 1)
• Transfer G codes to SD card and to FDM machine CPU for printing purpose.

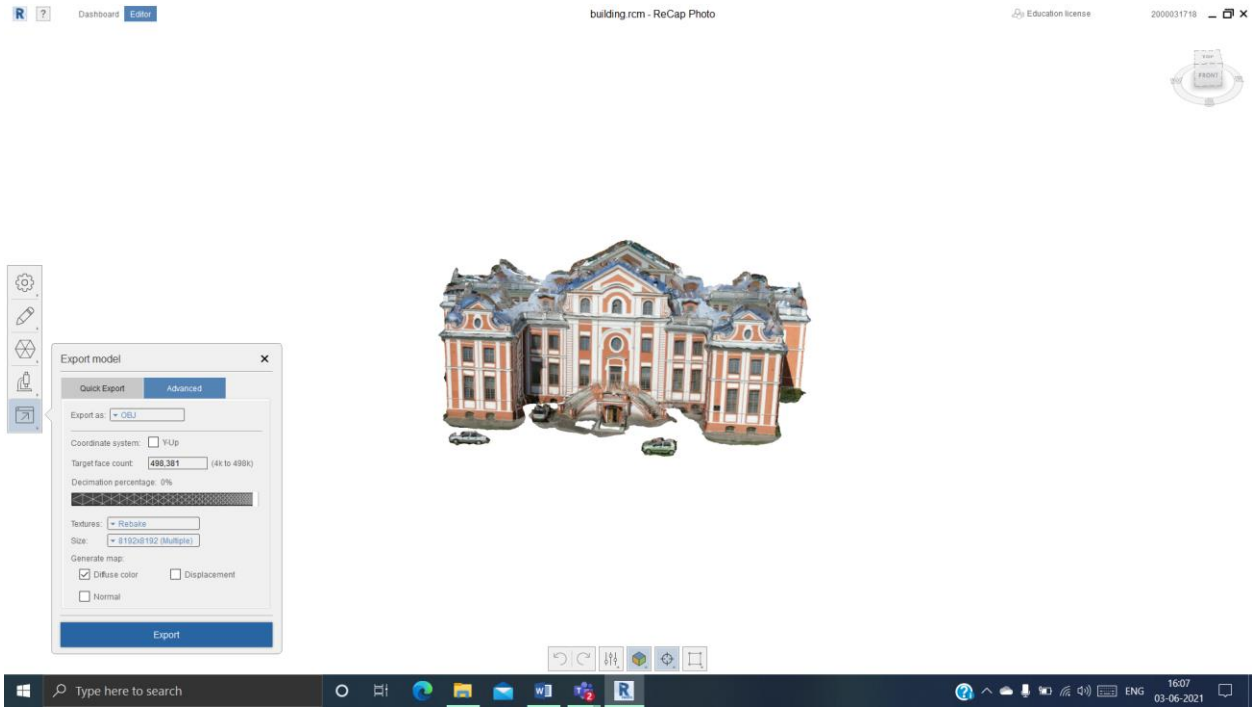
CURA PARAMETERS:

S.NO	CURA PARAMETER NAME	VALUE

Results (All screen shots need to paste here):


Dashboard
Editor
building.rcm - ReCap Photo
Education license
2000031718
Transform model
Orientation tool
Pick a surface
Apply
Type here to search
ENG
15:32
03-06-2021


Dashboard
Editor
building.rcm - ReCap Photo
Education license
2000031718
Slice
Fill
No fill
Transform plane
Apply
Type here to search
ENG
16:06
03-06-2021


Dashboard
Editor
building.rcm - ReCap Photo
Education license
2000031718
FRONT
Export model
Quick Export
Advanced
Export as: OBJ
Coordinate system: Y-Up
Target face count: 498,381 (4k to 498k)
Decimation percentage: 0%
Textures: Rebake
Size: 8192x8192 (Multiple)
Generate map:
Diffuse color
Displacement
Normal
Export
Type here to search
ENG
16:07
03-06-2021

LAB REPORT RUBRIC

LAB REPORT ITEMS	Points	Points Received
VIVA	5	
EXPERIMENT REPORT (All steps clearly stated)	15	
OBSERVATIONS AND DATA		
TOTAL	20	