Exercise 1 (Comparison of VR displays, 4 Credits)

Please compare the following categories of VR displays: fish tank VR display (i.e., stereoscopic monitor, please specify whether you consider autostereo or with glasses), head-mounted display, immersive projection technologies. For each category, list their advantages and their disadvantages.

Exercise 2 (Progressive Meshes, 5 Credits)

Write a pseudo-code for an edge-collapsing algorithm that can create a progressive mesh, given a high-resolution mesh as input. You can assume that all neighbourhood information are given/known within a mesh.

Exercise 3 (LRU strategy, 4 Credits)

Please assume the following sequence of colour elements passed to a sorting buffer during rendering of a scene graph: AACDEFGHABGHCCCCAGHJABABCCCAAG, where A to J represent different colours.

Apply the LRU strategy for a buffer size of $k = 1, 2, 3, 4$ and discuss the results with respect to number of colour changes. Which value for $k$ is considered to be the optimal solution?

Exercise 4 (Stereoscopic Image Cloning, 3 Credits)

Derive the formula of simple image warping mentioned in the lecture slide "Stereoscopic Image Cloning (Stereo without 2x rendering)"