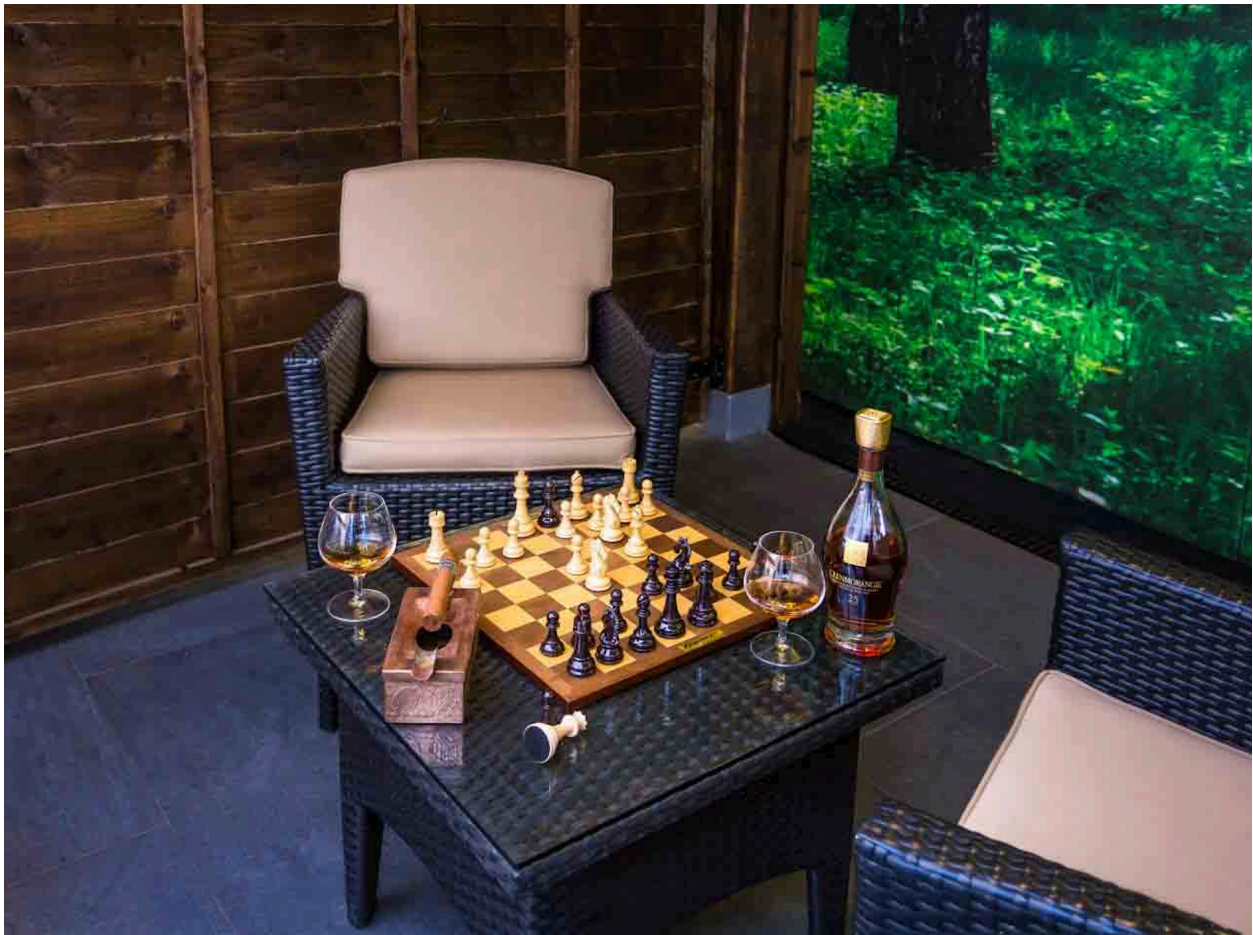


### CS148: Final Project Writeup

For our final project, we decided to model the following scene in Blender Cycles. Hugo came up with the idea since he enjoys playing chess, and found the following image online.



We liked various aspects of this scene: the glasses, bottles, and pane on the table create interesting transmission and specular features. The wooden wall and dark color tones throughout the scene give it a cozy feel. Our primary motive was to create a photorealistic scene that showcased our knowledge about how ray tracing works.

The only imported objects are in our final scene are the chess pieces and the board, from TurboSquid. The board is slightly modified with bevels to give it a more realistic look. All other objects were created from scratch in Blender.

Hugo imported the chess pieces and board into Blender, and rearranged the pieces into the position in the image. He set it atop a simple glass pane. Hugo also created the table and chair models from scratch. For texturing, we found wicker to be a tricky material to work with because of the strange normals caused by their uneven texture. Instead, he made the table completely out of wood textures, and used the following image as a model for his chair:



The textures for the chair and the table are obtained from CC0 Textures. Hugo also created the floor, which was changed from carpet to wood: the carpet looked a little grainy in the background, and the wood floor paneling fit the scene's mood better. Hugo also modeled a simple book, *Modern Chess Openings*, the famous chess book notably featured in "The Queen's Gambit" on Netflix, with a image of the cover found online.

Xiubao created the glasses, bottle, and the wall. She created the whiskey glasses and the liquid inside them from scratch. She also created the whiskey bottle

from scratch, complete with a transparent label, a cap, and liquid. Xiubao created the wall model added a 100% procedural tigerwood texture to it. This procedural texture produces the structured randomness in the patterns we see on the wall. We decided to eliminate the window in the source image because it doesn't fit the cozy mood we wanted from our scene.

Hugo and Xiubao put all the objects into one scene and experimented with lighting and camera options together. For lighting, we settled on a main bright area light coming from the left side of the scene, as in the source image. We used another, weaker area light from the other side to illuminate the darker areas of the scene. Finally, we used a weak point light as a "fill light" to give our glass more specular and reflective effects. We used depth of field, with a smaller F-Stop value, to focus on the chess board, the primary hub of our image.

We are happy with how our image turned out. We think the reflective properties of the glasses around the scene show the power of raytracing. The wall and the book look especially realistic, we think. The rendered image achieves a cozy, warm mood with a touch of mystery.