Using SolidWorks to Design a Piece of Furniture

SolidWorks and other 3D rendering software open up a world of possibilities when it comes to product design and assembly. This is particularly true when it comes to furniture design. These programs allow the user to visualize some of the most important aspects of furniture design that might be difficult if not impossible to visualize with standard drafting procedures. Using 3D rendering software allows the designer to visualize the overall scaled size of the furniture, specific design aspects that might or might not be attractive, the functionality of the piece, how certain woods and/or materials work together, and even how certain components or joints might work or need to be built.

Your challenge for this project is to design or replicate a piece of furniture using SolidWorks. You should find inspiration with designs or pieces you find online and then start assembling the pieces to make a final assembly. I have broken down each part of this process below. Please follow the steps in order.

1 - Research:
Please take the time to look around for designs or pieces of furniture you like. Insert a picture of three pieces you like the most in the spaces provided below. *You can simply drag any images you find into the boxes provided below*
When looking for pieces of furniture try to find pieces that are not too complicated but also not too simple. You want to be able to build this using SolidWorks within a few days, not spend weeks on it or only a few minutes. Our goal will be to make whatever you choose to design as realistic as possible.

2 – Selection:

Once you have found a few pieces you like you will need to narrow it down to one single piece that you would like to replicate or base your design off of. It would be great if you could find multiple views of the piece of furniture you plan on building. This will make the design process that much easier. Please put your final design in the boxes provided below. Use only one box if you could only find one view and use multiple boxes if you were able to find multiple views of your piece of furniture.

Please include the direct link you used to find your piece of furniture in the space provided below:

Knowing the approximate dimensions of your piece of furniture will be greatly beneficial to your design process. What are the approximate / estimated dimensions of your piece of furniture?

Length	
Width	

Height	
Other?	

3 – Design:
Now that you have a pretty solid understanding of the design and dimensions of your piece of furniture you can start the process of designing the piece. How you go about designing it is completely up to you and you should utilize the skills you have learned up to this point with SolidWorks, but there are a few requirements for your design. Your design must include at least the following:

1. The final design should be an **assembly** made of at least **five components** (although it is more likely that you will have MANY more).
2. The final design should have at least one type of woodworking joint incorporated into it such as; mortise and tenon, sliding dovetail, finger / box joint, dovetail joint, box and dowel, dado joint, rabbet joint, etc… It is likely you will have more than one joint in your design.
3. The final design should be fully assembled and the appearance of the components should be similar to how you would want them to appear if you were to build them out of wood or metal.

4 – Extra Challenges:
Many of you will want to go above and beyond with this project and I want to encourage you to do so. Complete one or more of these challenges to gain extra points for this and other assignments.

1. Include a component (or two) that has motion such as a door or drawer.
2. Make the hardware for the piece of furniture. This could include screws, hinges, knobs, handles, etc..
3. Add accessories to your piece of furniture; lighting systems, decorative components, stuff in the drawers, show how it is used, etc…
4. Build another piece of furniture that goes with it such as a chair that goes with a desk or table.
5. If you think of any other challenges that I have not mentioned here just give me a shout and I'll see if it fits the bill.

5 – Finish and Record:
Once you are 100% complete with your assembly you should do a 30 second recording of your piece of furniture and then you can upload that to Google Classroom. Make sure to show me all of the required aspects of the project along with any extra challenges you completed. Finally, complete this table below to summarize how you built the piece of furniture. You should turn in **BOTH** the video and this document for complete credit.

Please describe the piece of furniture you decided to build.	

Why did you choose this specific piece of furniture to design?	
Approximately how many components is this piece of furniture made of?	
Describe the type(s) of joinery you used to build this piece of furniture.	
Describe why you used this specific type of joinery.	
Describe the appearance you used for your furniture and why you chose that specific appearance.	
If you completed any challenges, please list and briefly describe them for me.	