

Fusion 360 Multi-user Assembly Design Collaboration

Tyler Henderson

Principal User Experience Designer, Fusion 360

John Helfen

Product Manager, Fusion 360

Speaker Introductions

Tyler Henderson



- Based in Portland, OR
- Mechanical Engineering background
- 16th year at Autodesk
- Experienced in Inventor Assemblies and Sketching | Fusion 360 Simulation, Generative Design, and Assemblies

John Helfen



- Based in Troy, MI
- Product Manager - Design & Engineering
- 25 years at Autodesk
- Mechanical background, Education, Maker (3DP/CNC), Inventor, Buzzsaw, Tinkercad, Fusion 360

Class Introduction

IM500038 Fusion 360 Multi-user Assembly Design Collaboration

Why is remote collaboration more important than ever?

- The Pandemic has forced many people to work away from the office.
- Meetings and discussions to plan projects and hand off work are less efficient and effective.
- Waterfall methods of Engineers and Designers working on their areas of expertise subsequently cause longer lead times and increased overhead.

How has Fusion addressed the changing needs for remote team collaboration?

- Data in the cloud, can be accessed by anyone in the team from anywhere in the world.
- Edit In Place to allow multiple users editing different components in the same assembly.
- The ability to see who is working on what and when.
- Implicit Reservation to prevent loss of design history while collaborating.



Today's Agenda

Instructions Demonstrations of the following:



Team Member Avatars



Design Reservation



Edit In Place and Assembly Contexts



Reference Objects

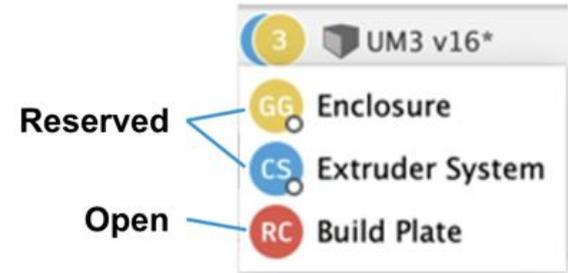
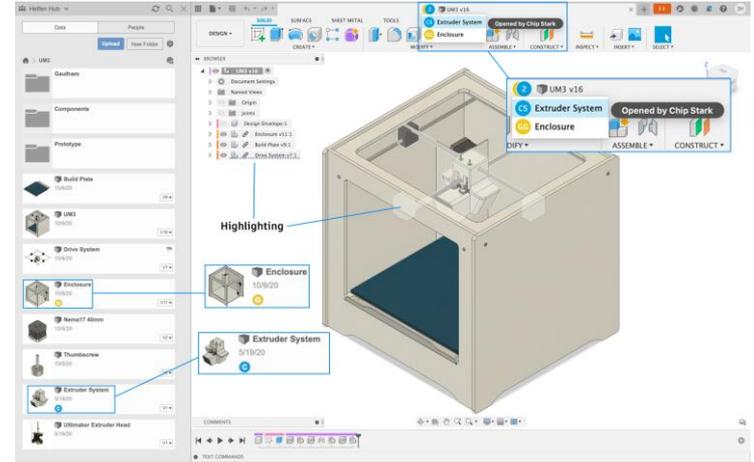
Demo Time

Team Member Avatars and Design Reservation

Design Avatars provides visual cues to you about what other team members are working on.

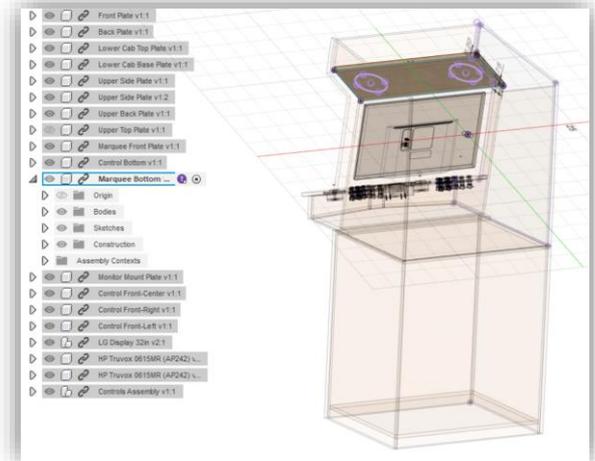
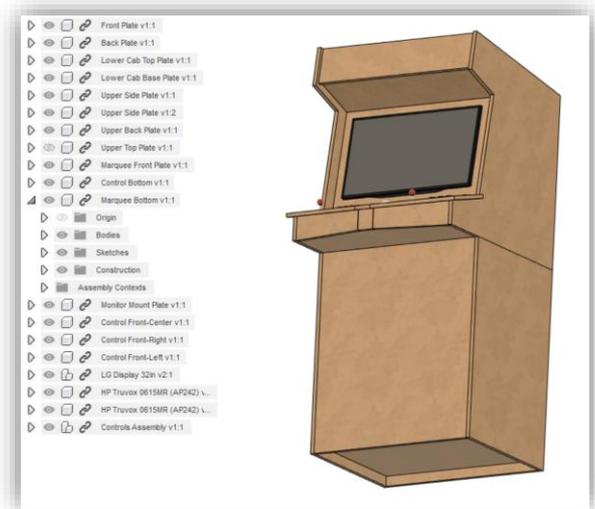
You'll see other members' avatars (uniquely colored circles with initials) in a document tab if they have the same Fusion design open as you. You'll also see their avatars in the Data Panel and Fusion Team.

Implicit Reservation happens when you start editing a Fusion design. You automatically reserve the design until you save your changes or close the design without saving. Other member can open and edit a design, but they cannot save any changes until the design is no longer reserved. This helps protect from loss of design history.



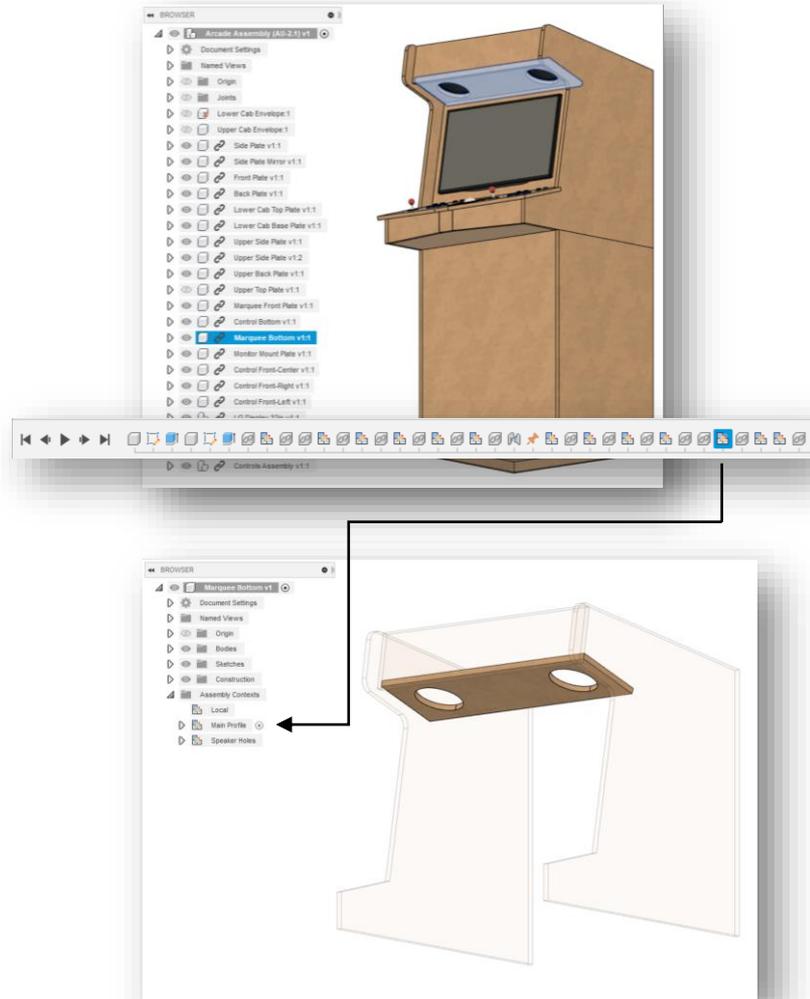
Edit-In-Place (EIP)

- Allows editing external components (Xrefs) in the context of an assembly. You don't have to open the component in its own tab to make changes.
- Accessed with flyout “pencil” on component browser node or right-click menu
- Edit-in-place can be associative or non-associative
- Associative Edit-In-Place creates Assembly Contexts (discussed in next section)
- Saving the assembly will also save Edit-In-Place changes to components



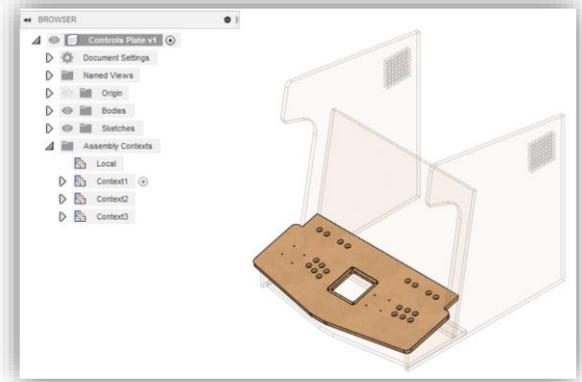
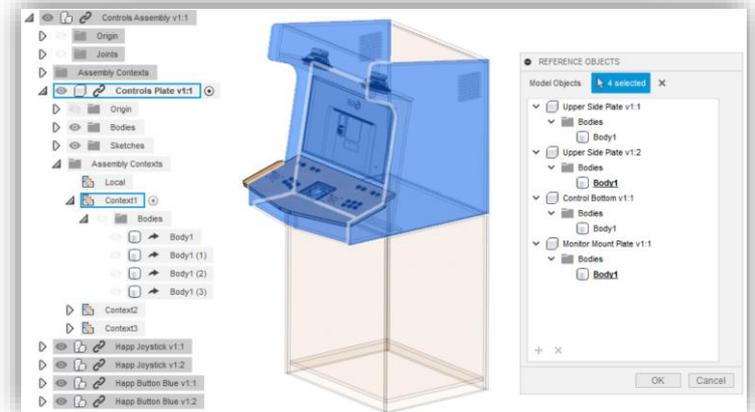
Assembly Contexts

- Created during Associative Edit-In-Place.
- Captures geometry and position references from the assembly
- Referenced objects are essentially derived into the edited component
- Contexts can be activated to make the referenced objects visible and available for continued referencing
- Contexts become “out-of-sync” when there are saved changes to the referenced geometry
- Out-of-sync Contexts can be synchronized manually in the component browser or assembly timeline.



Reference Objects

- Available in the Edit-In-Place toolbar menu.
- Let's you select any sketches, bodies, components, etc that you want to explicitly add to an Assembly Context
- When you open the component in its own tab, the selected objects can be seen and referenced when you activate the Context which includes them
- A great way to create and prepare components in an assembly so they can be detailed later without having to open the assembly

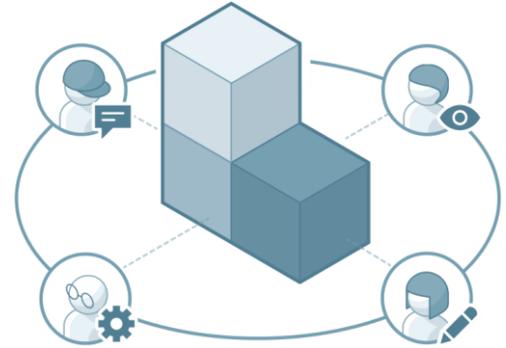


The background is a dark, almost black, abstract composition. It features several diagonal lines and planes that create a sense of depth and movement. The lines are rendered with a slight glow, giving them a metallic or polished appearance. The overall aesthetic is modern and sleek.

Let's Wrap It Up

Summary

- **Avatars** help you see WHO is working on WHAT.
- **Implicit Reservation** prevents conflicts when collaborating.
- **Edit-In-Place** allows editing external components in assemblies and multiple collaborators in the same assembly.
- **Assembly Contexts** capture associative geometry and position references from the assembly when doing Edit-In-Place.
- **Reference Objects** allows you to explicitly select references in an assembly to be used when detailing a design outside of the assembly.



Thank you so much for attending our class!

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For more information and guidance on these topics please download the handout and the data set from the class resources.

The image features a dark, almost black background with several large, metallic, 3D-rendered geometric shapes. These shapes, which resemble parts of a mechanical assembly or architectural components, are positioned in the corners and along the edges, creating a sense of depth and industrial design. The lighting highlights the sharp edges and reflective surfaces of these objects. In the center, the text 'AUTODESK UNIVERSITY' is displayed in a large, bold, white, sans-serif font, standing out prominently against the dark background.

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