MA2787:Harnessing the Power of Top-Down Design in Autodesk® Inventor®

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Bottom Up Design

Bottom Up Design Philosophy

“Quick”

- All parts drawn independently before the assembly is created

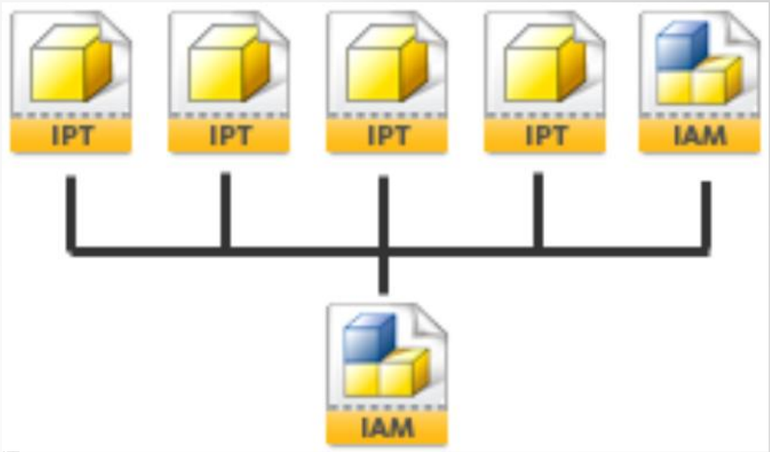


Image courtesy of ASCENT

“Simple”

- No links between parts or subassemblies
- Only constraints to tie the parts together in the assembly

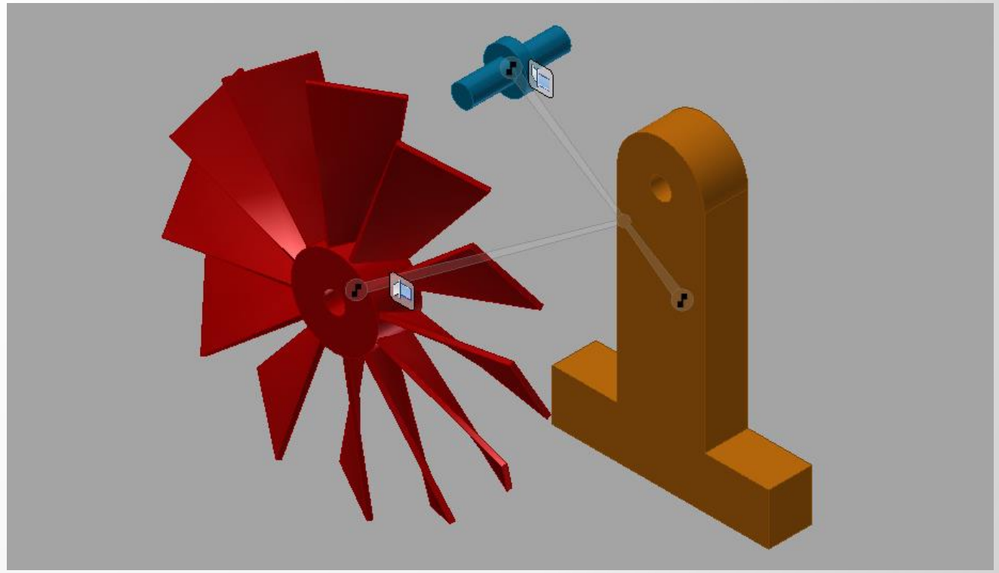
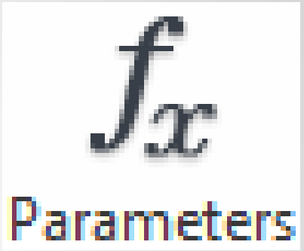
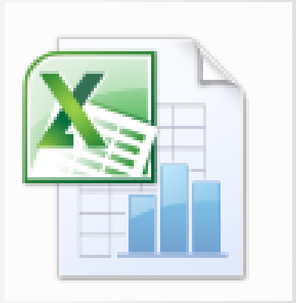


Image courtesy of Nolan Friesen

Top Down Design

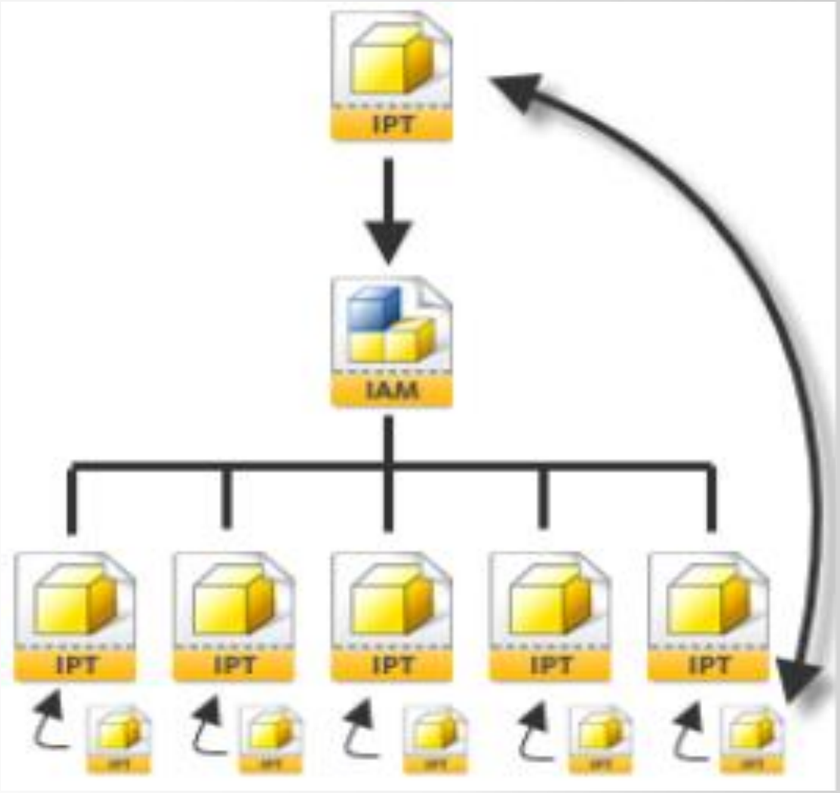
- Multi-body Parts
- Layout Design
- Adaptive Parts
- Parameter Linking
  - Spreadsheets
  - Parts
  - Assemblies





Multi-Body Parts

- The entire assembly design structure is contained within an IPT file
- Simple structure – no need for file/folder structure at the initial design phase
- Each solid body can be extracted as a separate derived part



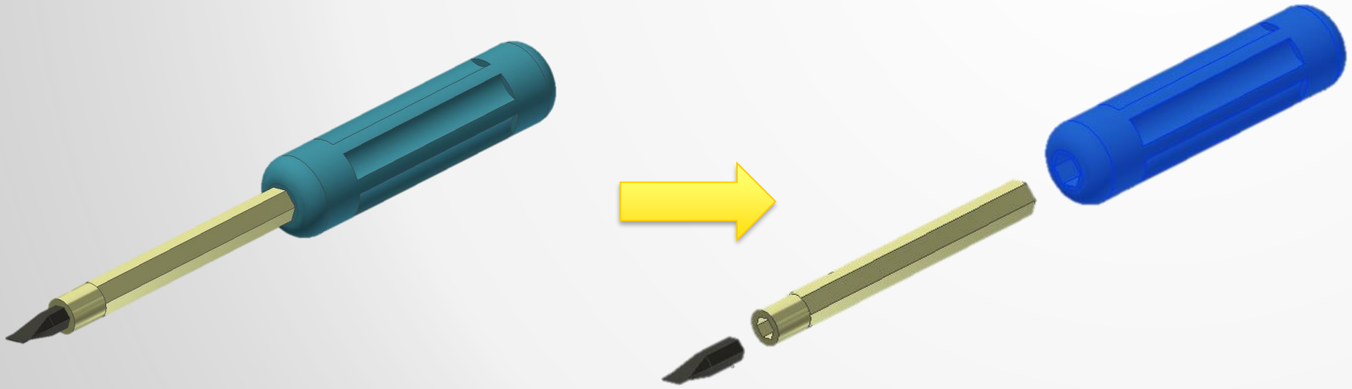
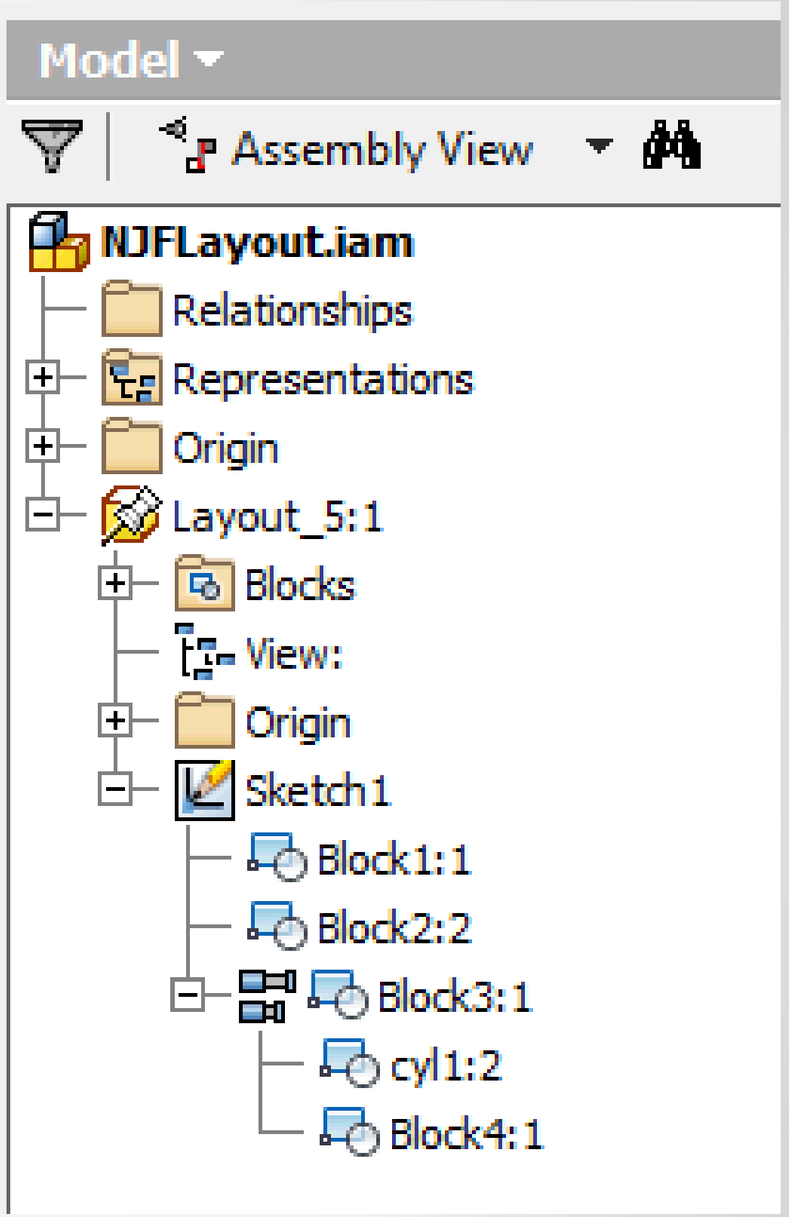


Image Courtesy of ASCENT

Layout Design

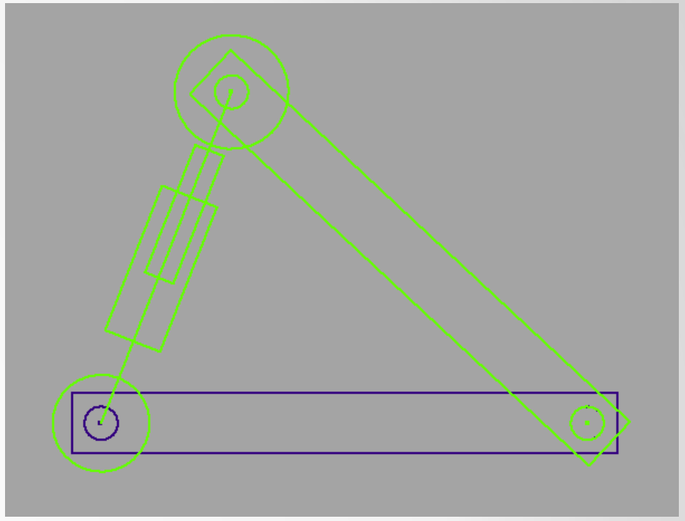
- The Assembly starts from a blank assembly file. Within that assembly, we create a new part using the **Create Component** command for use as the layout. (***layout.ipt***)

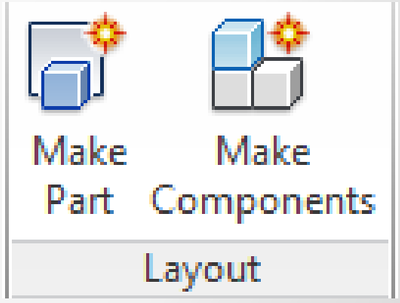
- Create sketch blocks inside a sketch within the layout.ipt



Layout Design

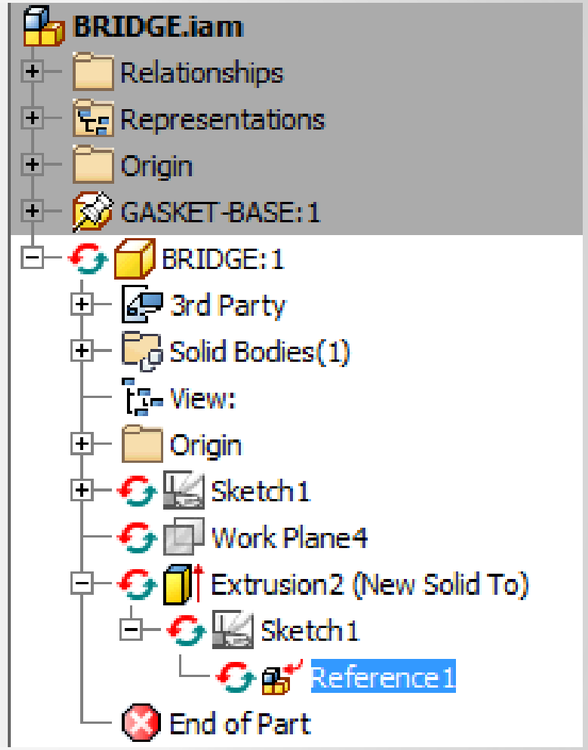
- Constrain blocks to each other to test motion and fits
- Extract those blocks to parts in the main assembly file
- Parts are derived and driven by the layout sketch in the layout part





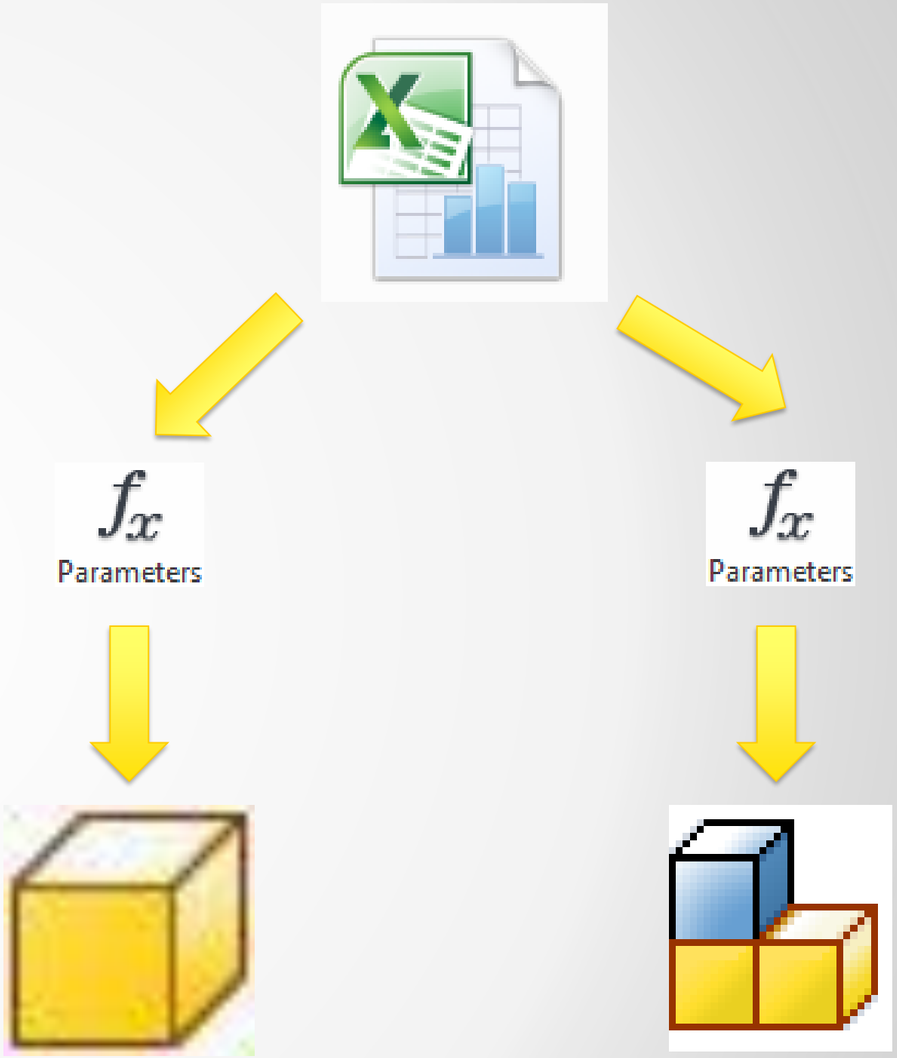
Adaptive Parts

- The Assembly starts with a blank assembly file. We may place a few base parts in the assembly.
- New parts using the **“Create Component”** command
- created within the context of the assembly.
- project existing part edges.



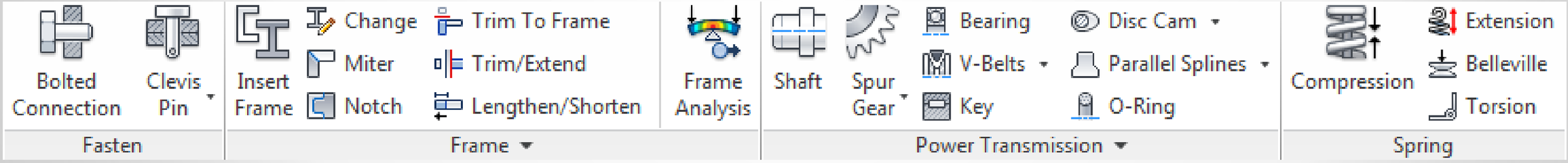
Parameter Linking

- We have to ability to link parameters from an outside source.
- This can include:
  - Excel spreadsheets
  - Inventor Part files (IPT)
  - Inventor Assembly Files (IAM)



Design Accelerators

- Inventor contains the built in Design Accelerators as a way for users to avoid spending extra time on menial parts that they more than likely don't fabricate themselves.



Design Accelerators

- Have to ability to pull pattern information from connected parts
- Have the ability to modify and add features to existing parts
- Can create new parts from the tool
- Select references from assembly parts
- Can access “Named Parameters” as well for references

QUESTIONS?

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