Assembly Modeling
Part I: Intro
Using Autodesk Inventor
Level: Introduction
0. OUTLINE

1. Initialize:
   - Project, New Assembly

2. First Component
   - Place, Constrain to origin

3. Second Component
   - Constrain Planes, axes
1. INITIALIZATION
• Start Inventor
• Verify project
  ✓ Selected Project
  ✓ Workspace
  ✓ Libraries
  ✓ Folder Options

a. Startup
b. New Assembly Model
• Reference Planes
  Select: <Ctrl>+<lmb>
  Visibility

• View
  Home
  Other
  Navigation
  Pan
  Zoom
  Orbit
  View Face

c. Adjust Display
d. Save

- Save
  - Workspace: Working
  - File name: FirstDemo.jam
  - Save as type: Autodesk Inventor Assemblies (*.iam)
- Pick: Place
- Pick: FirstDemo.ipt
- <RMB> Place Grounded...
- <RMB> Ok

a. Place Component
b. Location

- Grounded:
  - Part XYZ planes match Assembly XYZ planes
- Move the part:
  - Pick: FirstDemo.ipt
  - Drag (Hold <LMB>): Move Cursor
    - No motion
• Remove Ground
  ✔ <RMB> FirstDemo.ipt
  ✔ Pick: Grounded
  ✔ Verify change:
    • Before:  
    • After:  

• Move the part
  ✔ Pick: the component
  ✔ Drag: Free to move

C. Position
• Assemble:

• Constrain
  ✔ Selection 1: Front Face
  ✔ Selection 2: XZ Plane
  ✔ Flush
  ✔ Select: Apply | Close

Before:

After:

d. Reorient (first Constraint)
e. Verify  (First Constraint)
• Align Part to Assembly XYZ planes
• Assemble:
  • Constrain
    ✓Selection 1: YZ Plane
    ✓Selection 2: Axis
    ✓Mate

Before:

f. Reorient (Second Constraint)

After:
Select: Apply Close

Verify

☑ View:
☑ Drag:

Before:

After:

g. Verify (Second Constraint)
• Align Part to Assembly XYZ planes
• Assemble:
  • Constrain
    ✔ Selection 1: XY Plane
    ✔ Selection 2: Face
    ✔ Flush:

h. Reorient  (Third Constraint)
i. Verify (Third Constraint)
3. SECOND COMPONENT
Pick: Place
Pick: FirstDemo.ipt
<RMB> Done

a. Location
b. Color

- Appearance:
  - Pick: Component
  - Pick: As Material
  - Pick: Blue
• Reference Planes
  - Select: <Ctrl>+<lmb>
  - Visibility

  ![Image of Reference Planes]

  ![Image of Visibility]

  ![Image of Adjust Display]

  ![Image of Inventor - Assembly Model Intro -jcS]

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d. Orient

- Rotate Component
  - Pick: Component
  - <RMB>
    - Pick: Component
    - Pick: Free Rotate
    - Drag: Component
e. Orient

(first Constraint)
f. Verify (First Constraint)
- Align Part edges
- Assemble:
  - Constrain
    - Selection 1: Edge
    - Selection 2: Edge
    - Mate:

Before:

After:

**g. Orient** (Second Constraint)
h. Verify (Second Constraint)
Add additional components and constraints

3. PRACTICE
• Continue
  ✅ Place component:
  ✅ Constraints
  ✅ Verify - Drag: No Motion

a. Additional components
4. FINISH