

## What is *ANSYS Workbench*?

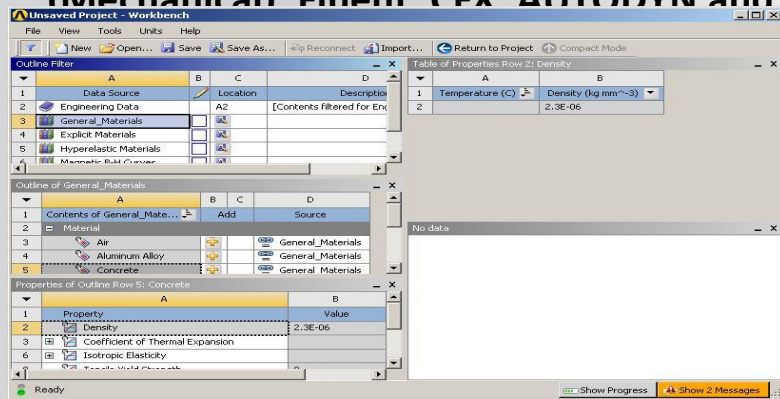
- *ANSYS Workbench* provides powerful methods for interacting with the ANSYS family of solvers. This environment provides a unique integration with CAD systems, and your design process.

## *ANSYS Workbench* is comprised of various applications :

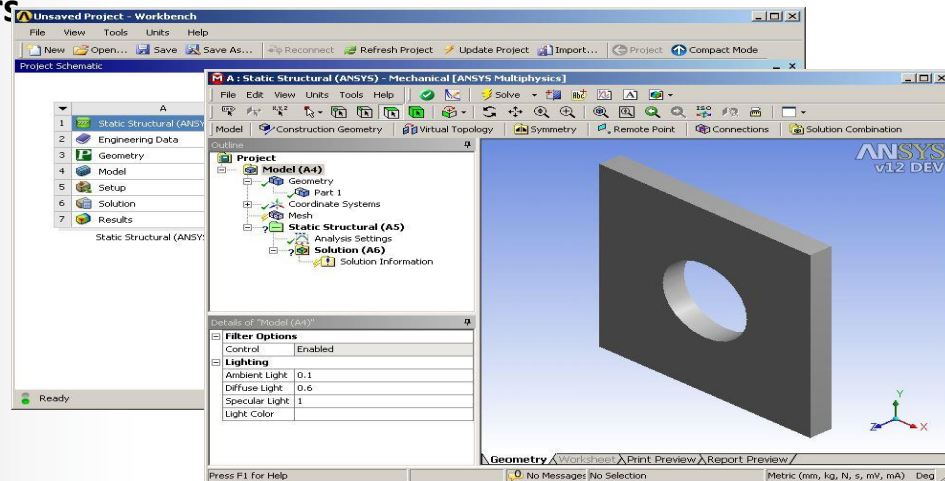
- *Mechanical* for performing structural and thermal analyses using the ANSYS solver
- *Explicit Dynamics* for performing non-linear dynamic analyses using the AUTODYN solver.
- *Geometry (DesignModeler)* for creating and modifying CAD geometry to prepare the solid model for use in *Mechanical*.
- *Meshing* for generating Structural and CFD meshes
- *Advanced Meshing* for generating Structural and CFD meshes using ICEM CFD
- *Design Exploration* for optimization
- *Finite Element Modeler (FE Modeler)* for translating a NASTRAN and ABAQUS mesh for use in ANSYS
- *AUTODYN* for explicit dynamics simulations featuring modeling of nonlinear dynamics

The Workbench environment supports two types of applications:

- **Native applications (workspaces):** Current native applications are Project Schematic, Engineering Data and Design Exploration.
  - Native applications are launched and run entirely in the Workbench window.
- **Data Integrated Applications:** current applications include Mechanical, Explicit Dynamics (Mechanical) Fluent CFX AITODYN and others.



**Native Application**

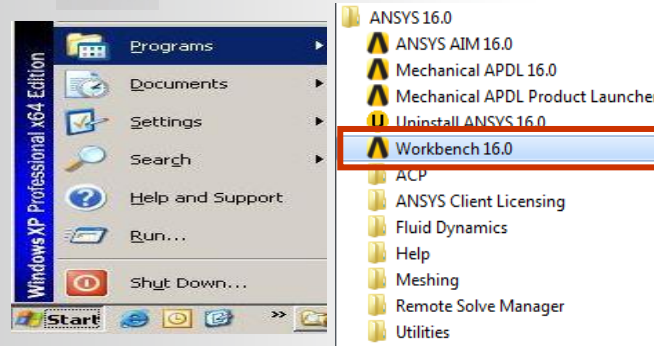


**Data Integrated Application**

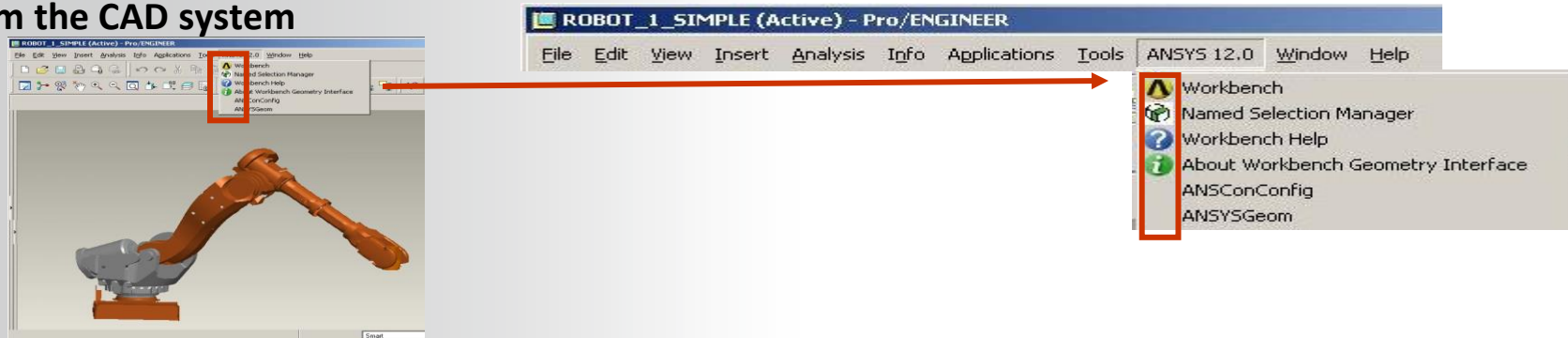
# Starting Workbench

There are two methods of launching Workbench:

- From the Windows start menu:

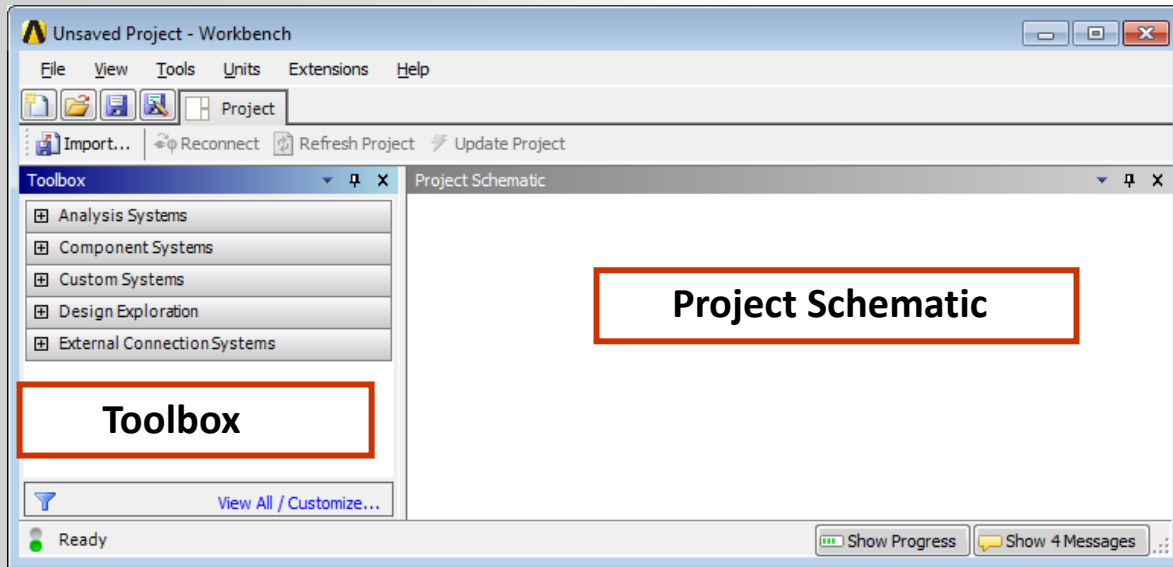


- From the CAD system



# The Workbench Environment

For most situations the Workbench GUI is divided into 2 primary sections (there are other optional sections we'll see in a moment):



The toolbox contains 5 subgroups:

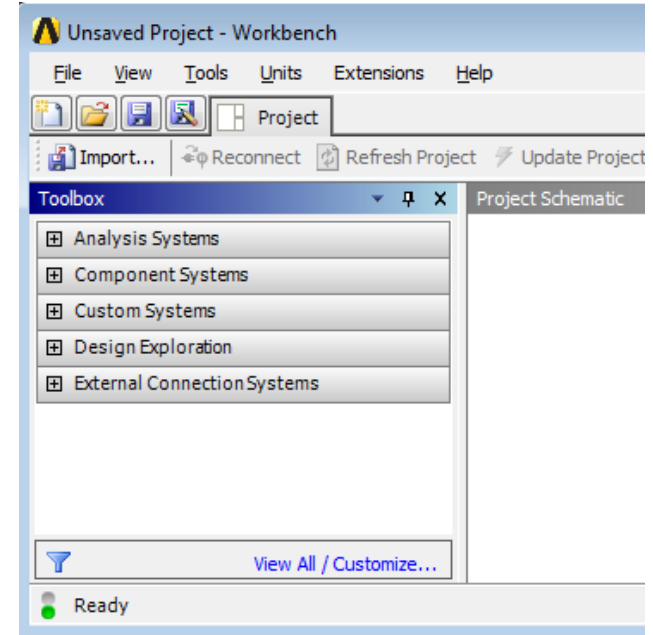
**Analysis systems**: predefined templates that can be placed in the schematic.

**Component systems**: various applications that can be accessed to build, or expand, analysis systems.

**Custom Systems**: predefined analysis systems for coupled applications (FSI, thermal-stress, etc.). Users can also create their own predefined systems.

**Design Exploration**: Parametric management and optimization tools.

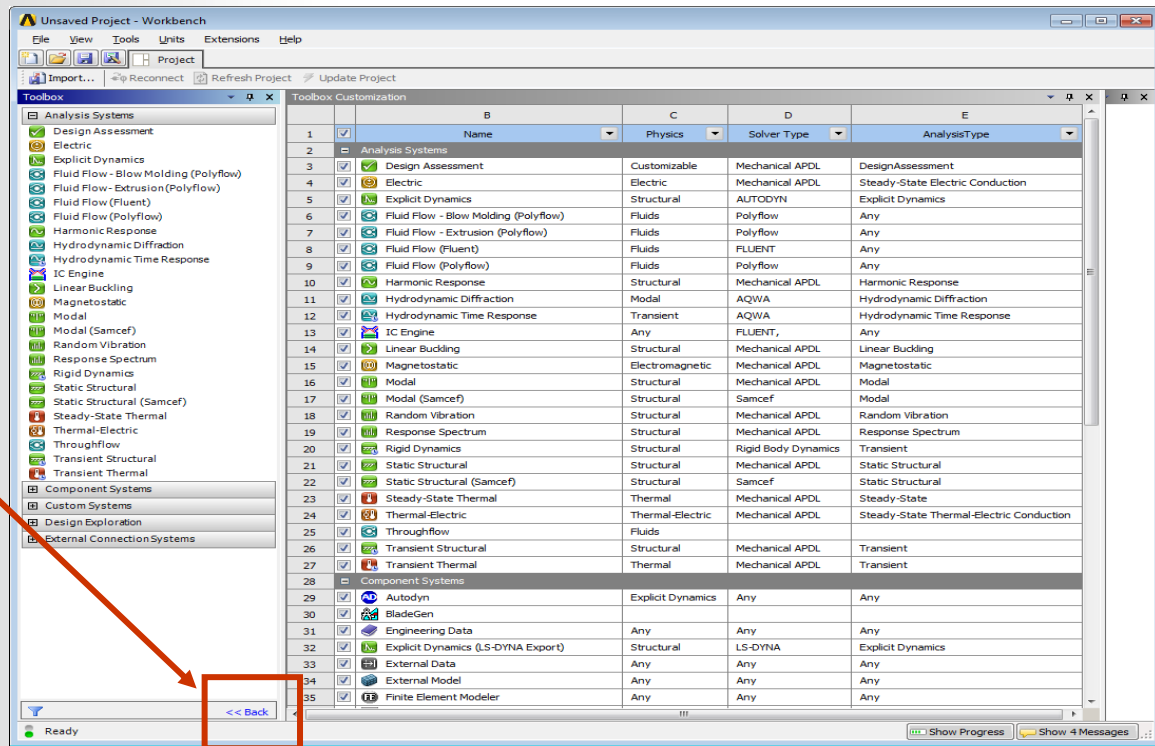
**External Connection Systems**: Allows external applications to participate in the workflow defined in the Project Schematic.



The systems and components displayed in the toolbox will depend on the installed products.

Using the check boxes in the “View All / Customize” window, the items displayed in the toolbox can be toggled on or off.

The toolbox customization window is normally left closed when not in use.



**The Workbench project schematic is a graphical representation of the workflow defining a system or group of systems.**

**The workflow in the project schematic is always left to right.**

**There are currently several applications which are native to Workbench, meaning they run entirely in the Workbench window:**

- **Project Schematic, Engineering Data and Design Exploration**

**Non-native applications (called data-integrated) run in their own window:**

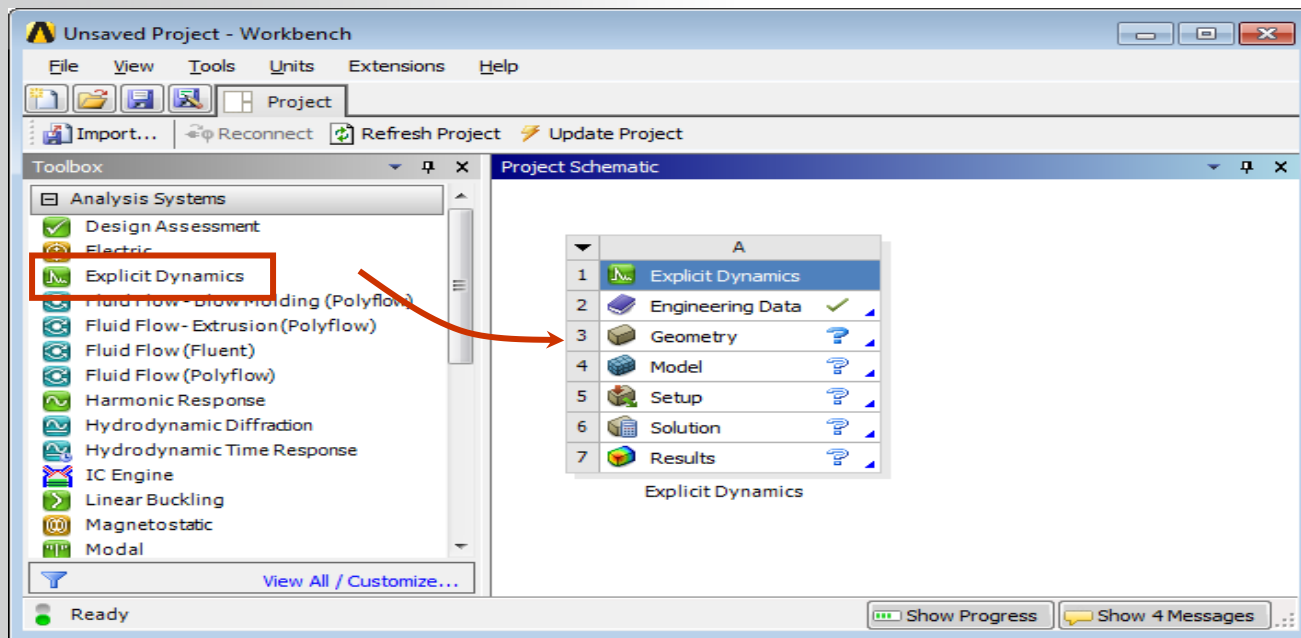
- **DesignModeler, Mechanical (formerly Simulation), Mechanical APDL (formerly ANSYS), ANSYS AUTODYN, ANSYS Fluent, ANSYS CFX, Etc . . .**

**Blocks of cells can be deleted by RMB menu selection.**

# The Project Schematic

In this example an Explicit Dynamics analysis type is selected for the project schematic.

From the toolbox the selection can be dragged and dropped onto the schematic or simply double clicked.





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