EN1740 Computer Aided Visualization and Design

Spring 2012

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Brian C. P. Burke

Last Time:

• Creating models in Pro/Engineer:

  • Customizing and formatting the Pro/E environment

  • Introduction to Datums

  • Sketcher

  • Solid feature creation

    • Extrude

    • Revolve

Tonight:

• More solid modeling tools

  • Hole

  • Round

  • Chamfer

  • Pattern

• Model some parts

  • Part modeling – Best Practices

• Pro/Engineer survival tips

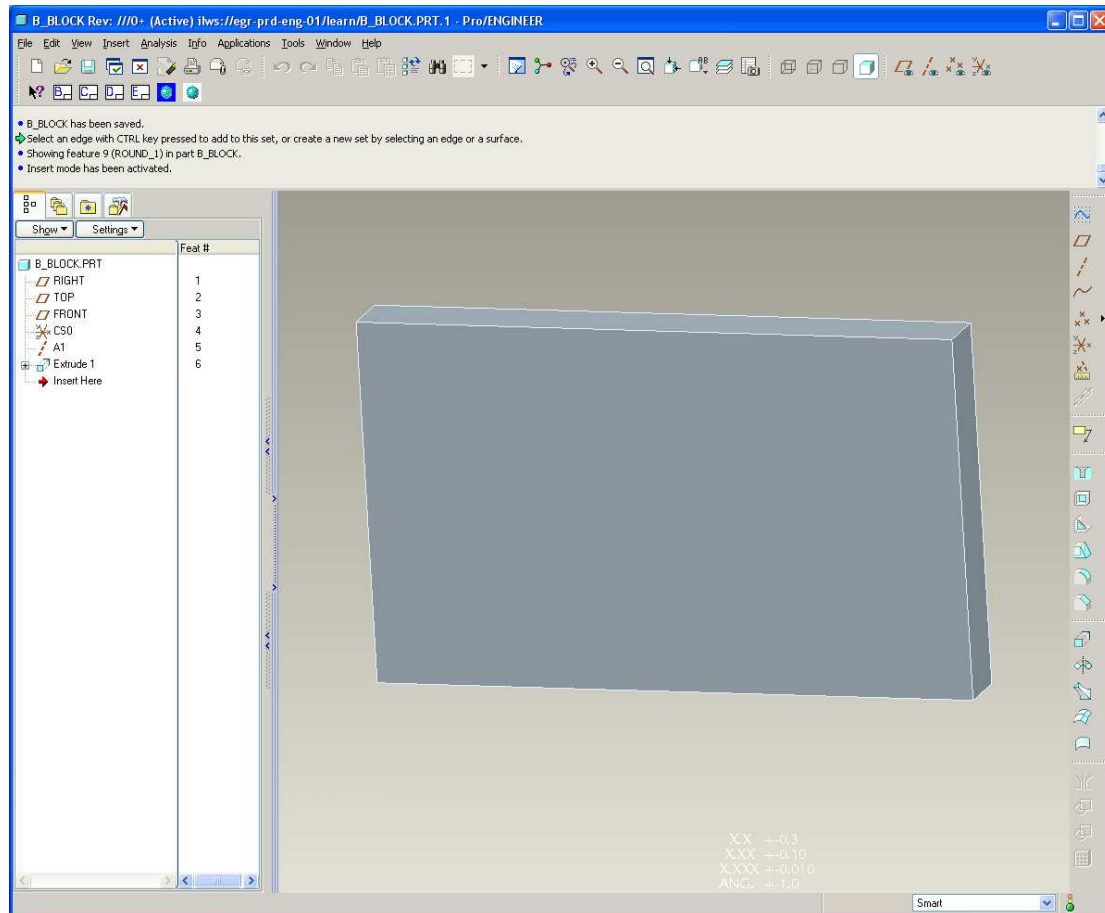• Review of individual project proposals

EXERCISE - The Flat Plate

From what we learned last time:

• Create a 3 X 5 X .500 plate

• Extrude part symmetrically wrt datum

We're going to add:

• Two holes

• Four holes in the corners

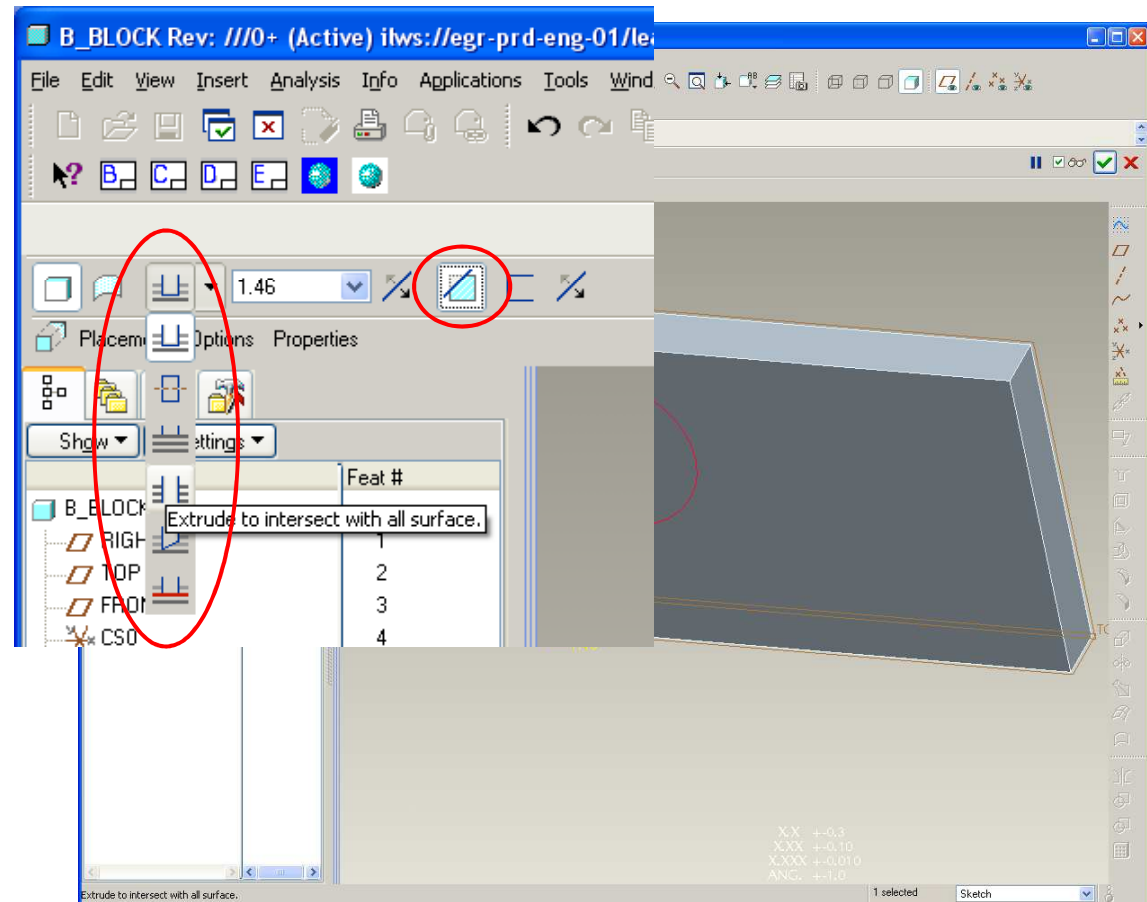• Rounded edges

• Chamfered edges
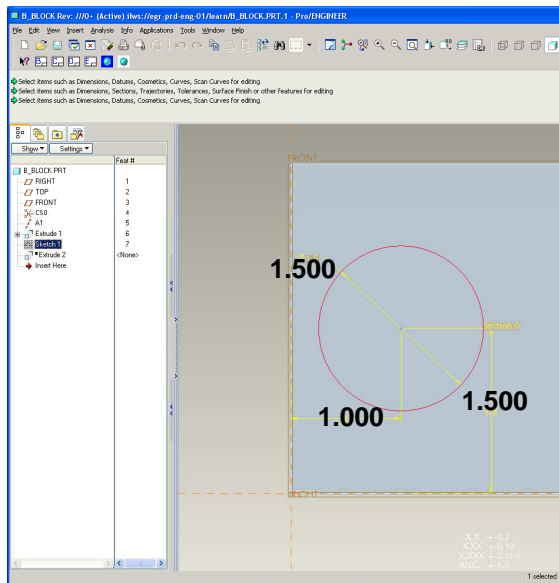
• Pattern the corner holes

EXERCISE - Holes by Extrude, Cut

Cut – just like extrude….
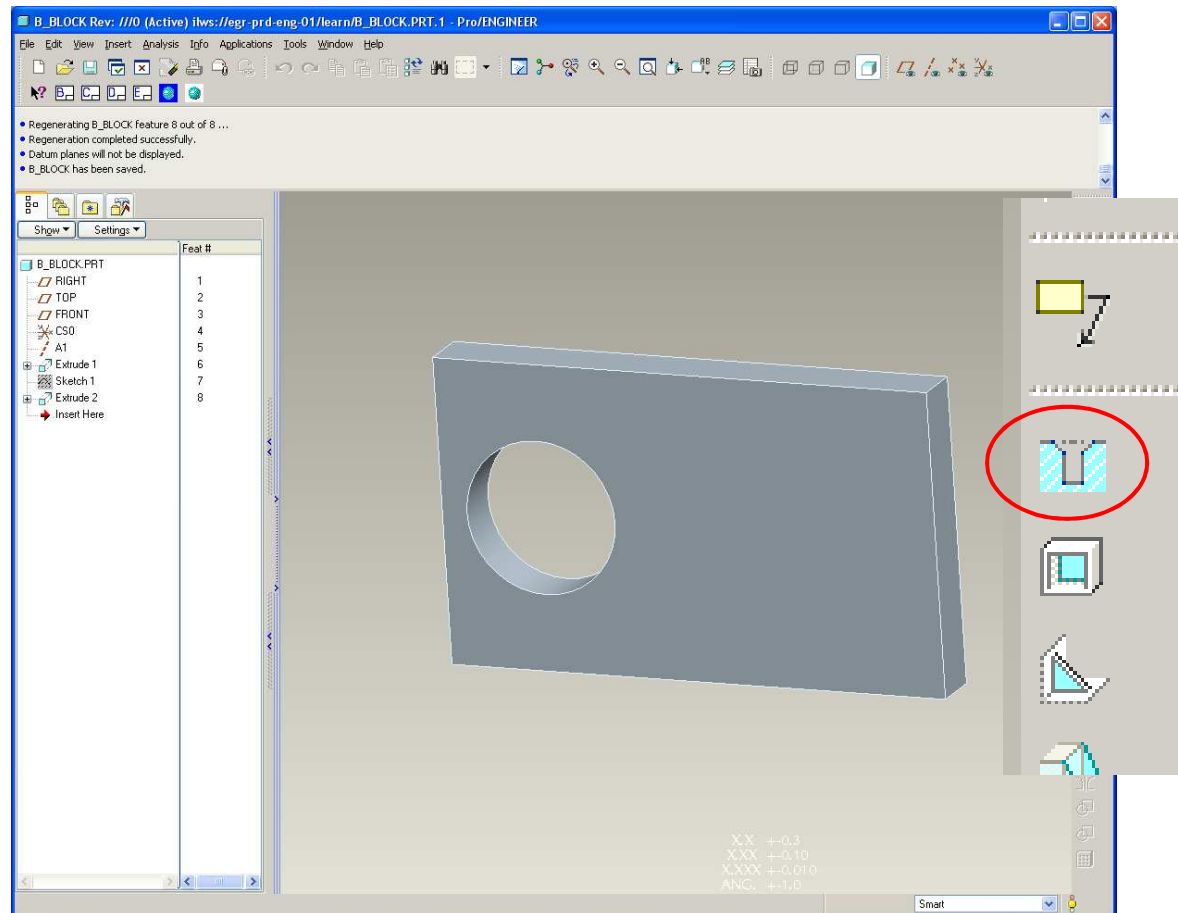
Extrude > Toggle "Cut"

Select Depth > "Through All"

Sketch

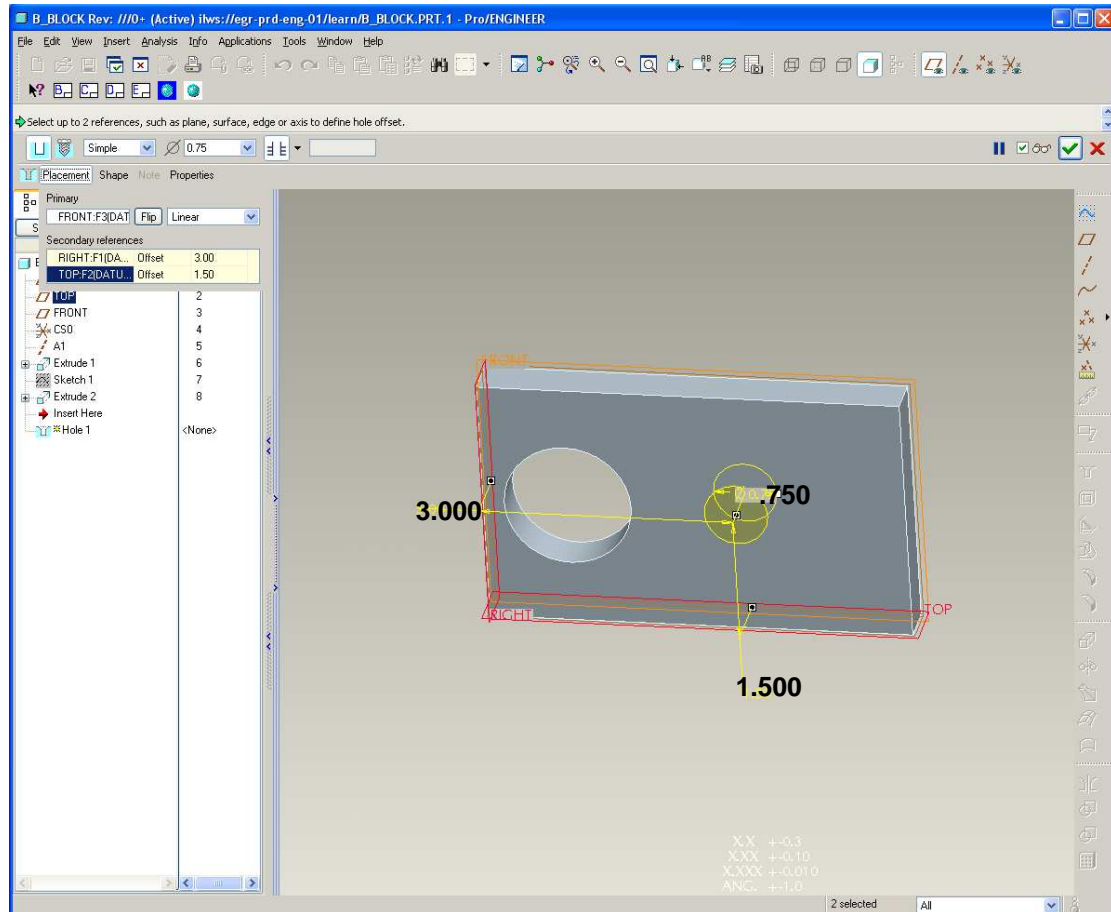# Holes – We'll put the second one in with the Hole Tool

Holes – We'll put the second one in with the Hole Tool

After selecting hole tool:

• Select placement plane

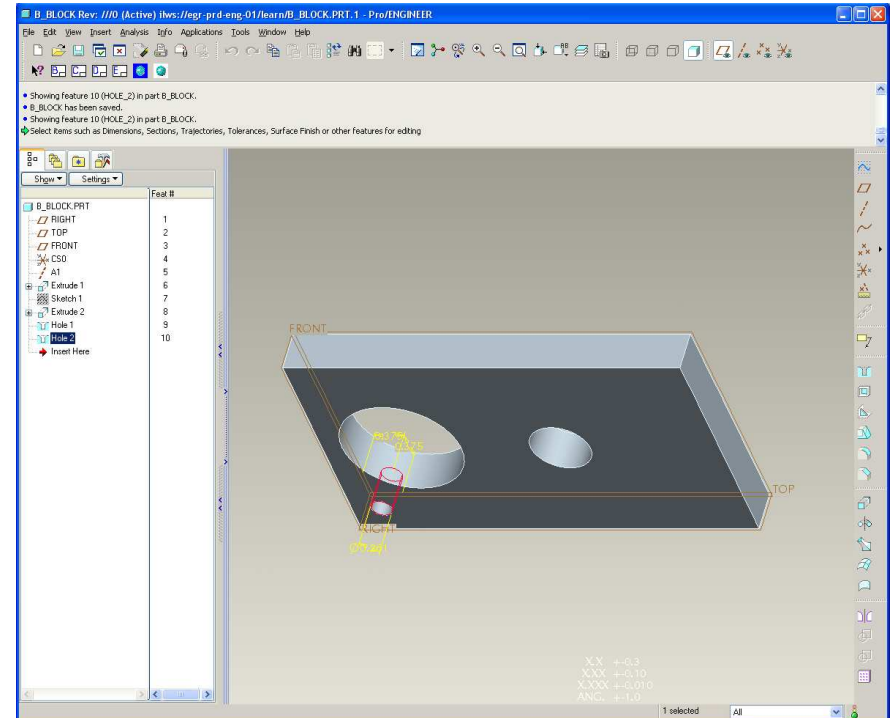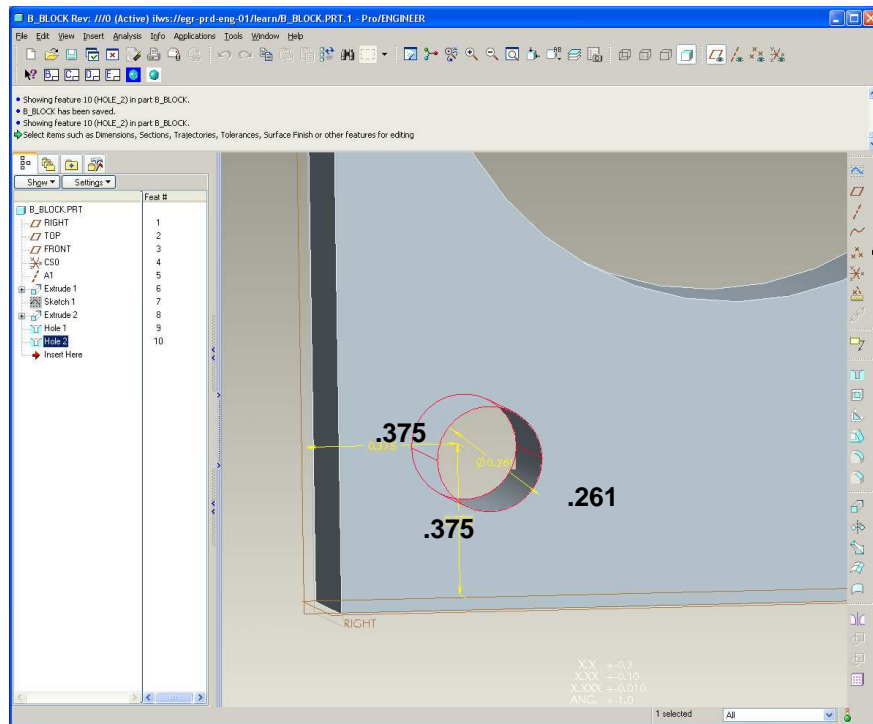• Grab tags and select other two datum planes

Try it a different way:

• Open Placement, delete references and select datum planes by clicking
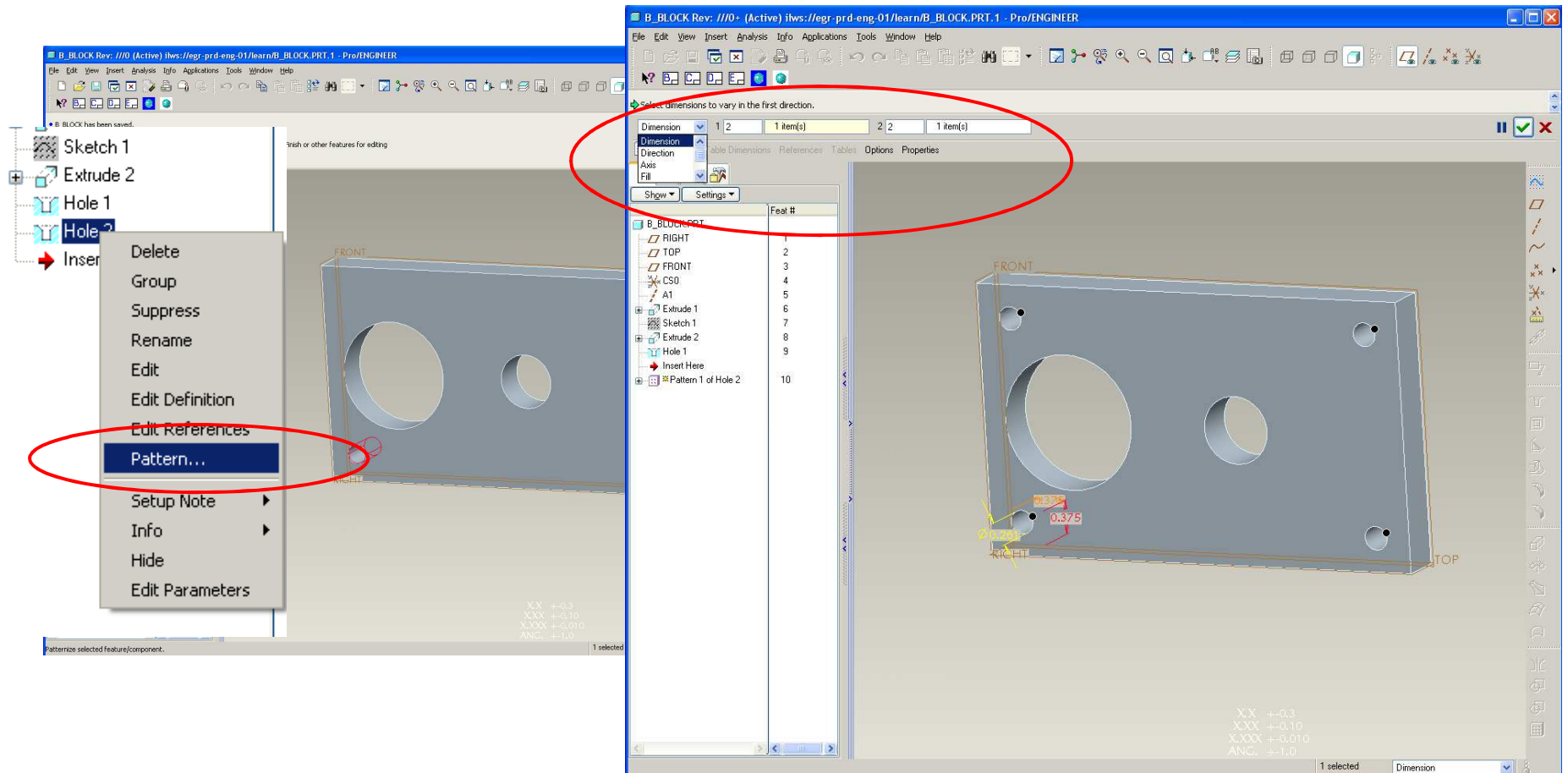
• Specify diameter

• Done

EXERCISE – Put an additional .261" hole in the lower left with the Hole Tool

Pattern

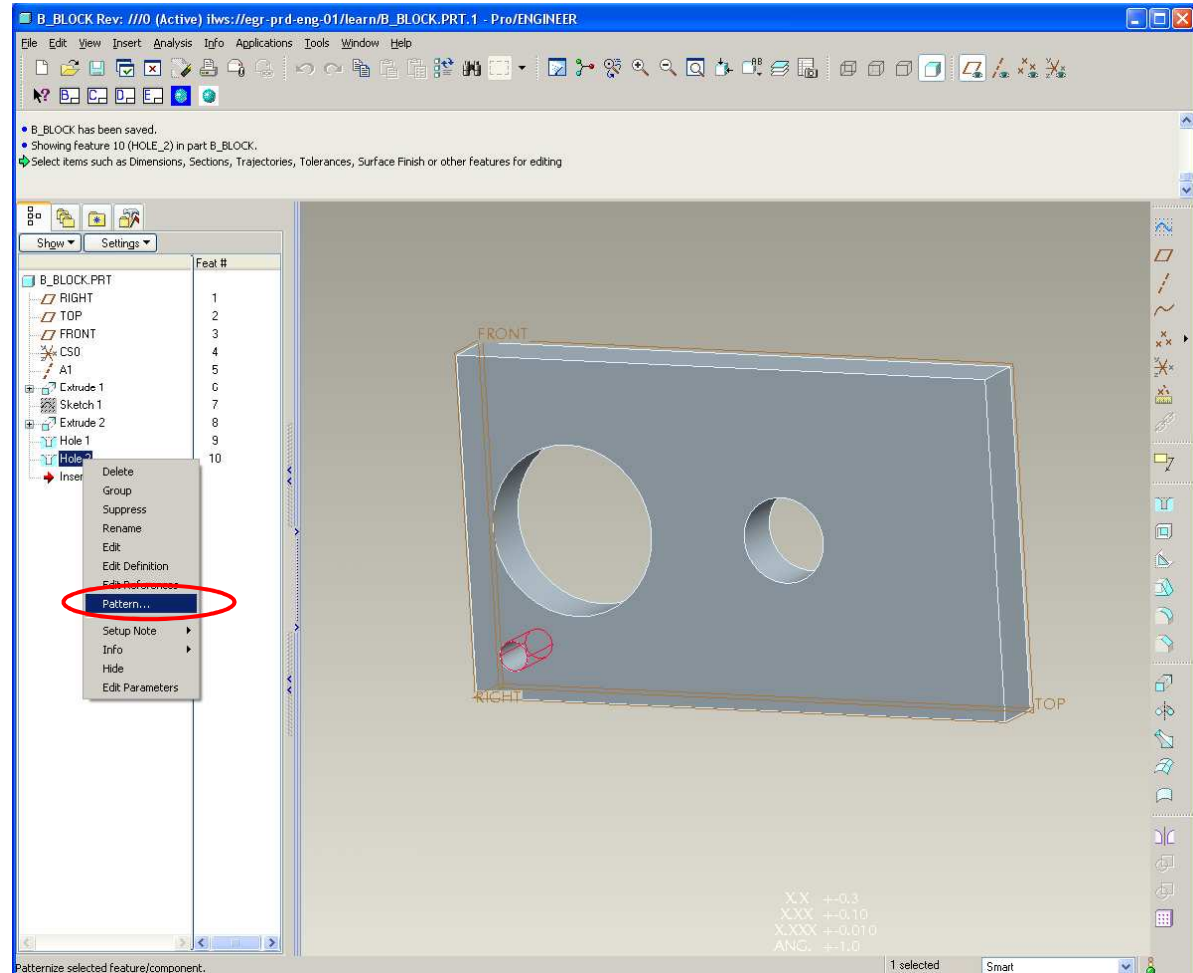**_Repeats features along a specified direction or directions_**

Pattern

Repeats features along a specified direction(s)

To create a feature pattern:

• Select the feature you want to pattern in the Model Tree (LMB)

• RMB and Hold to get the pop-up menu > Pattern

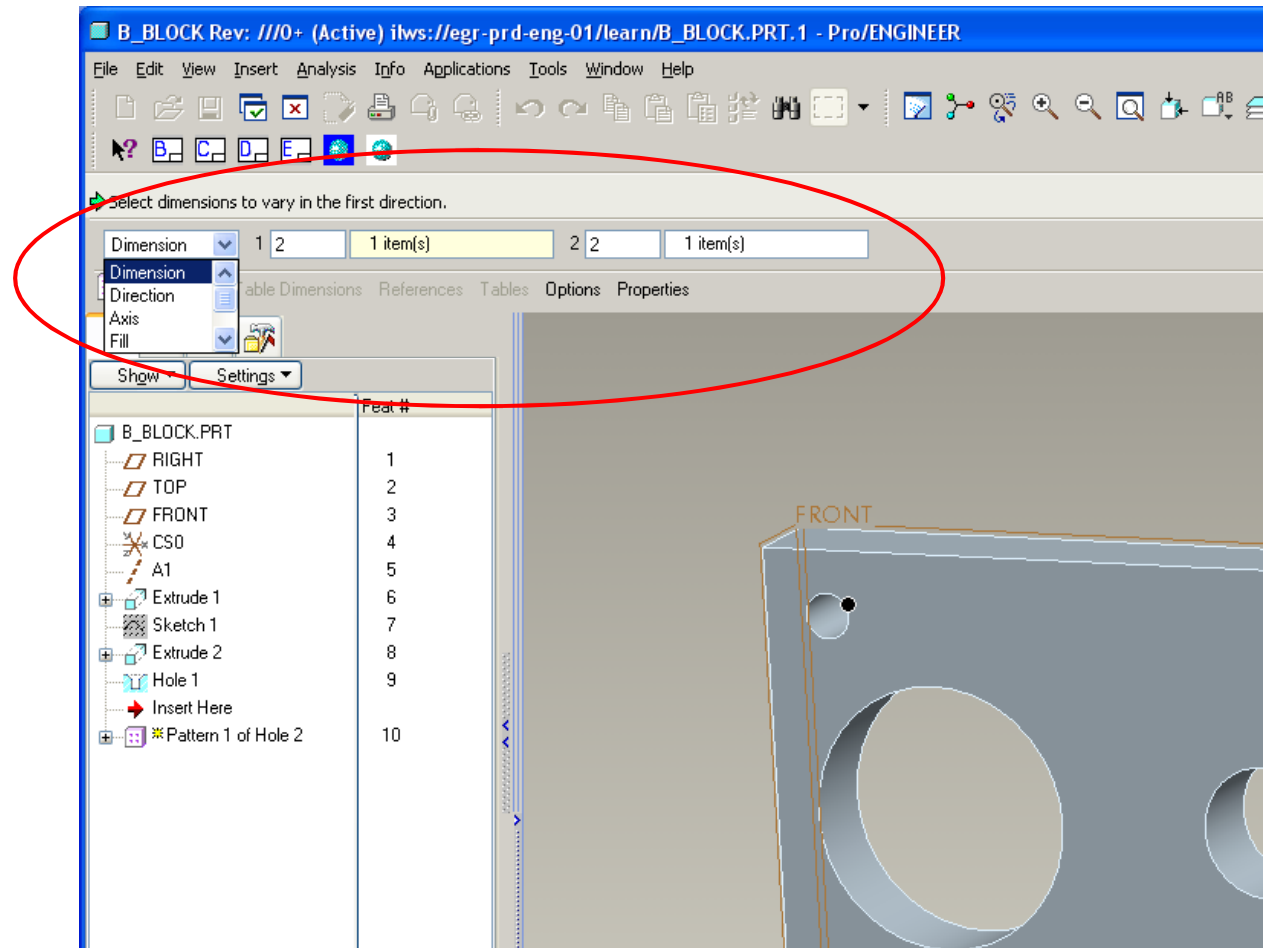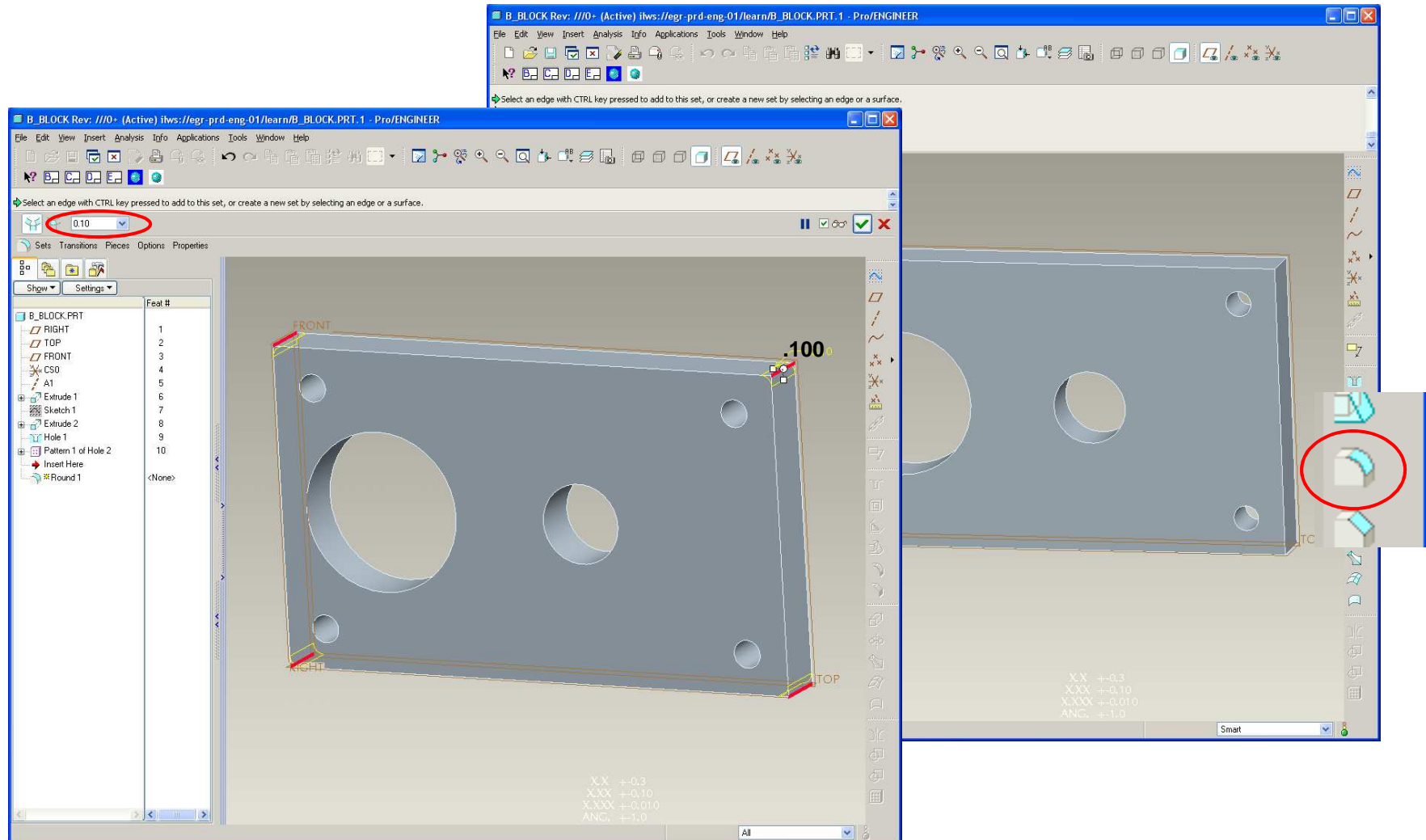• Alternatively, from the menus use Insert > Pattern

Pattern

Repeats features along a specified direction(s)

In the pattern dashboard:

• Select Dimension for type

• Enter 2 in first direction

• Enter 2 in second direction

• Specify spacing
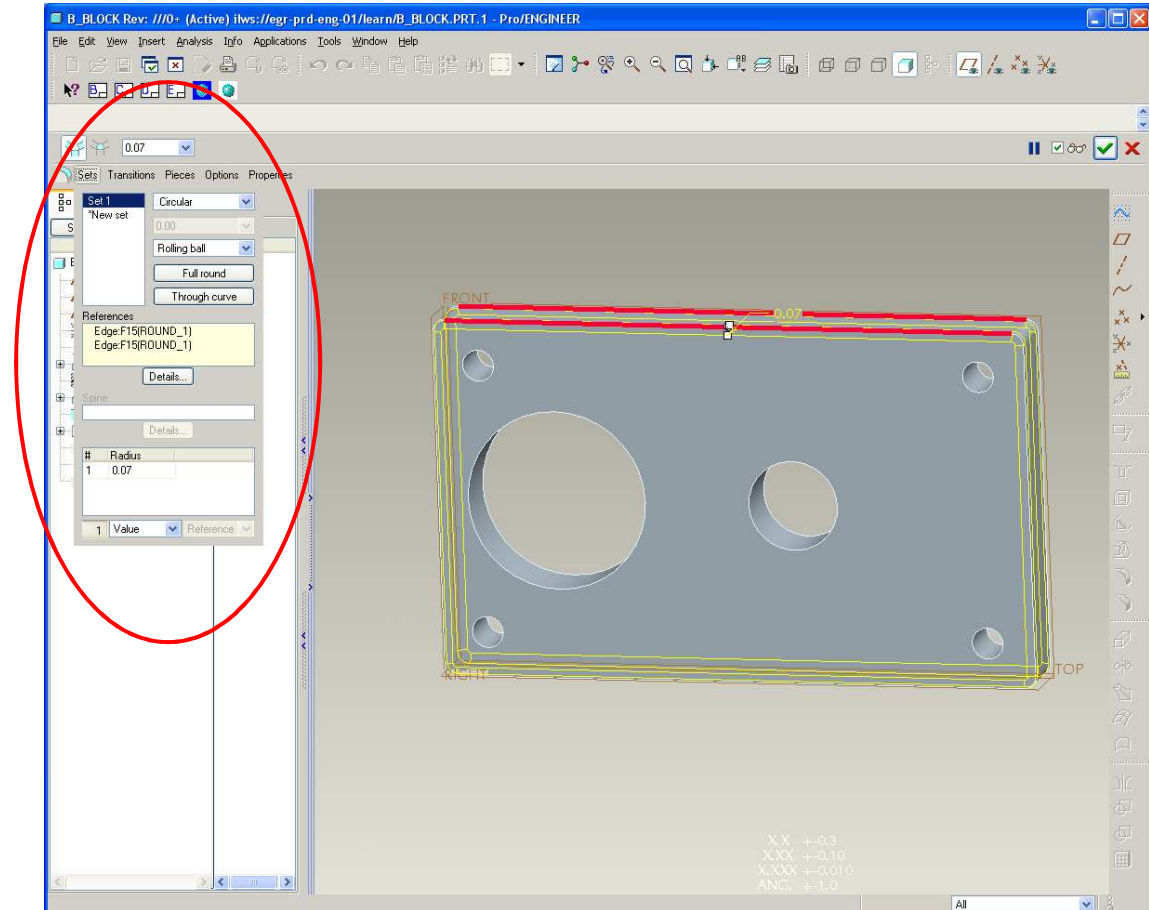
• Done

Round – Break sharp edges with a radius
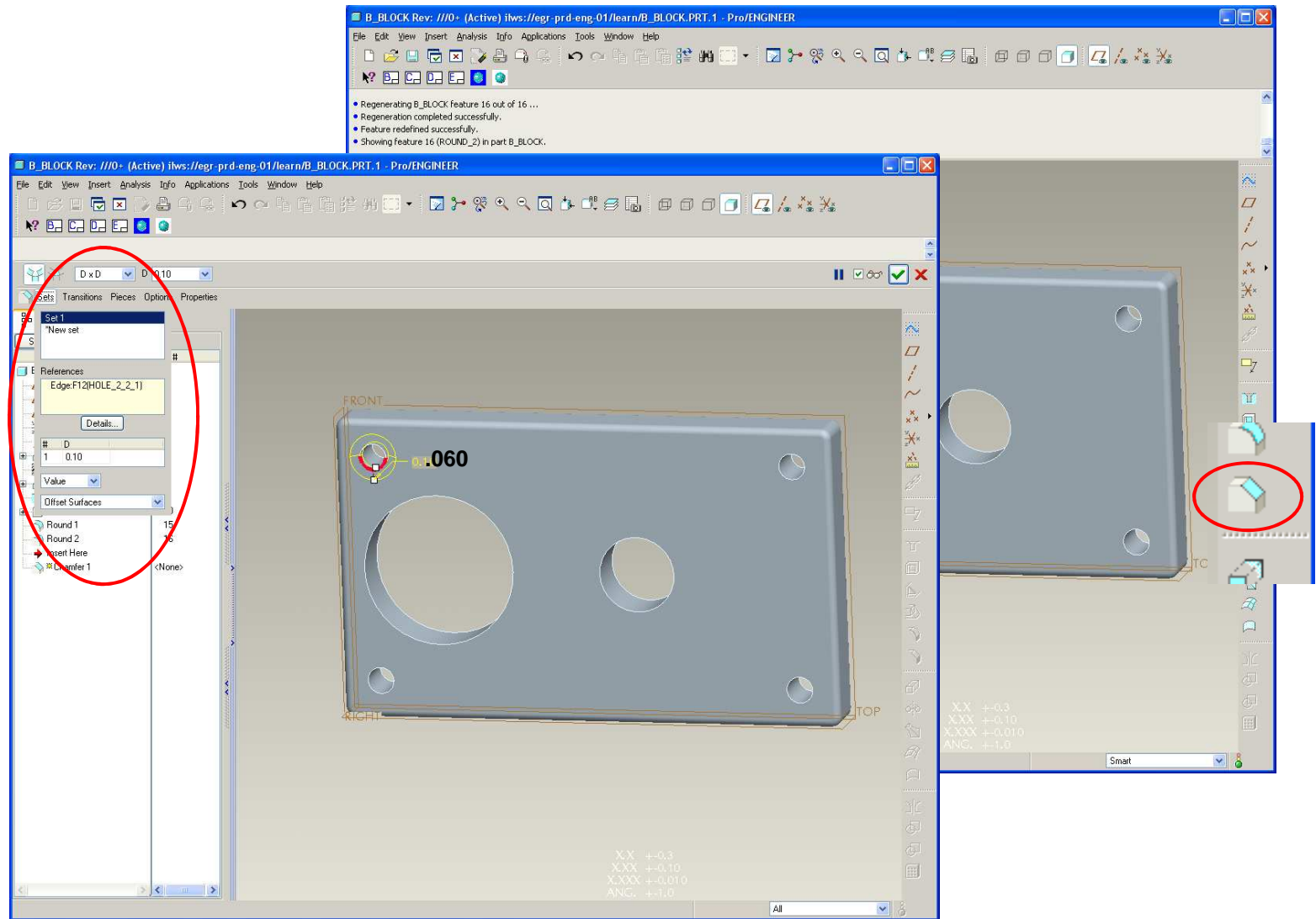
Round – Break sharp edges with a radius

Notes:

• Lots of option – most you don't need anymore

• Avoid putting a million sets in one feature – Use control to put on one set

• Rounds will follow tangents – Plan ahead

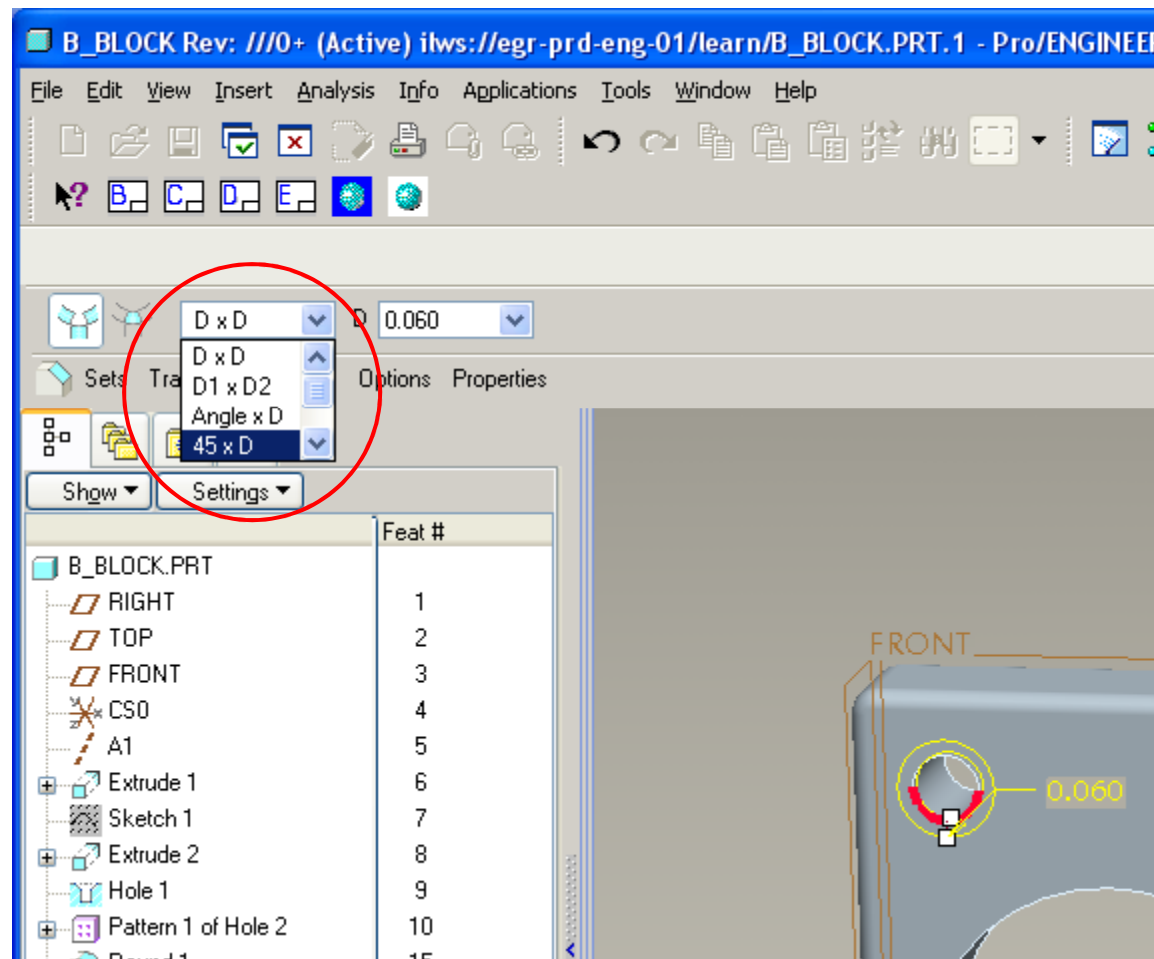# Chamfer – Break sharp edges with an angled surface

Just like Rounds

Chamfer – Break sharp edges with an angled surface
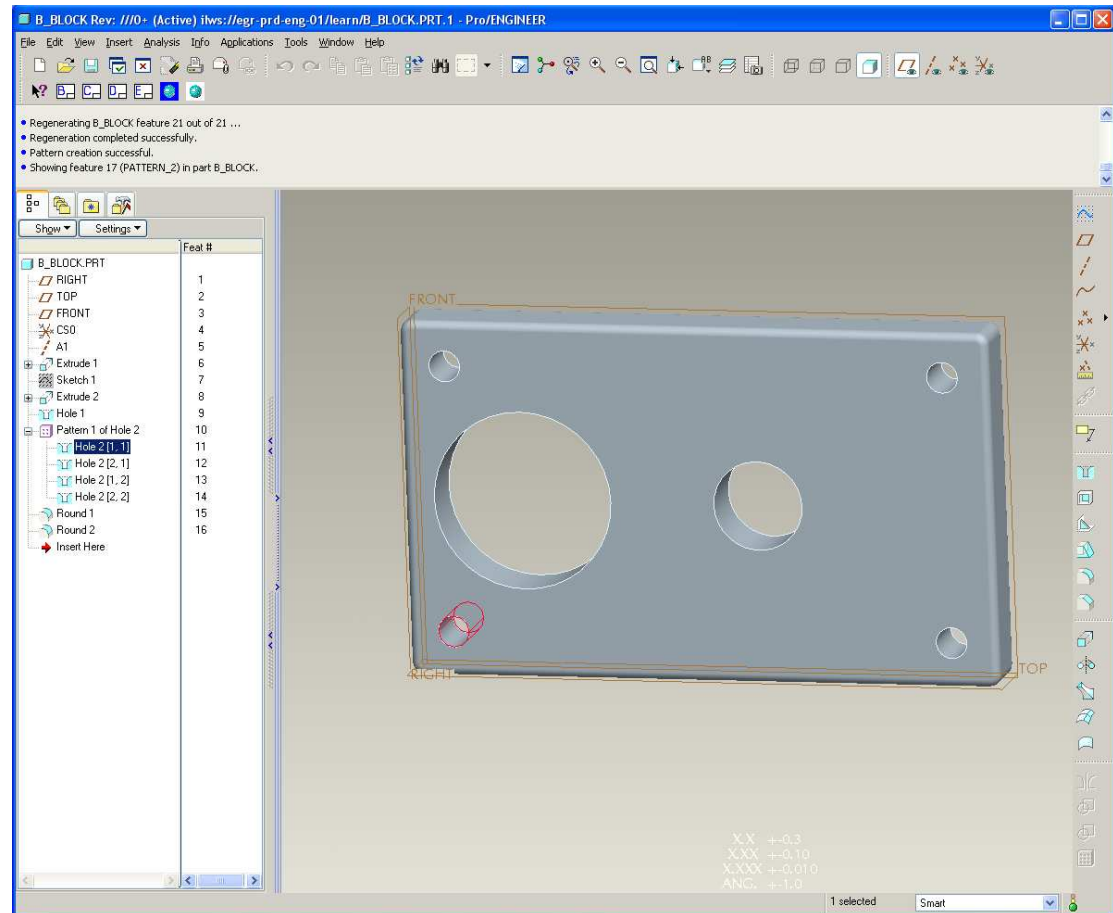
Four basic ways to make a chamfer:

• D X D

• D1 X D2; D1<>D2

• Angle X D

• 45 X D

Reference Pattern – New feature will apply to all member of existing Pattern

• Put new feature on **first member** of existing pattern

• Right click on new feature in model tree

• Select Pattern

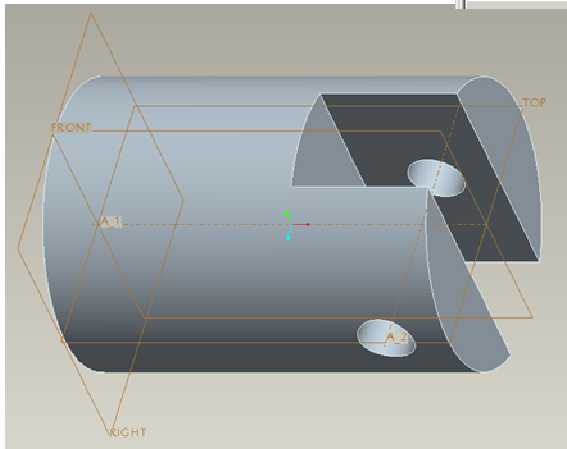• Shows up on every one of the pattern members
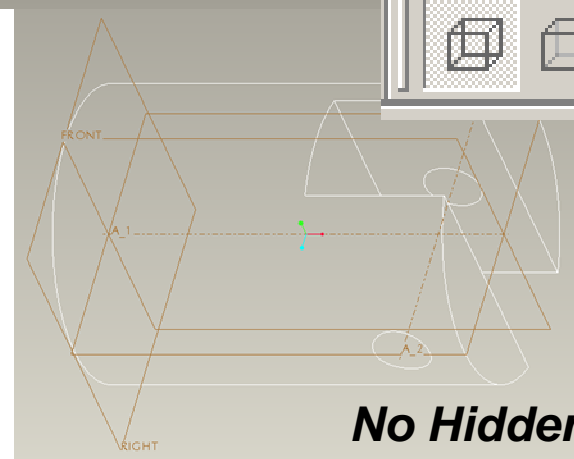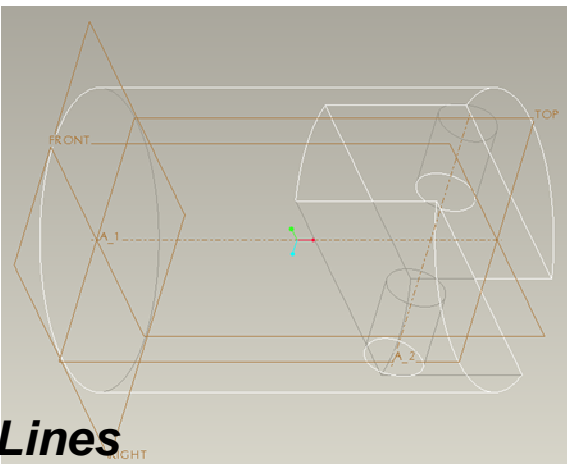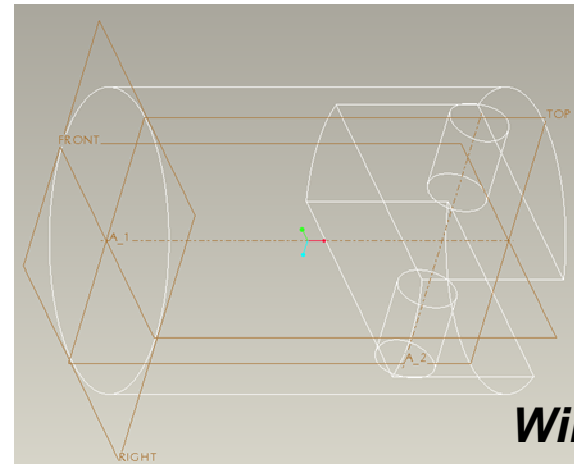
Pro/Engineer Stuff

Model Display

Shaded

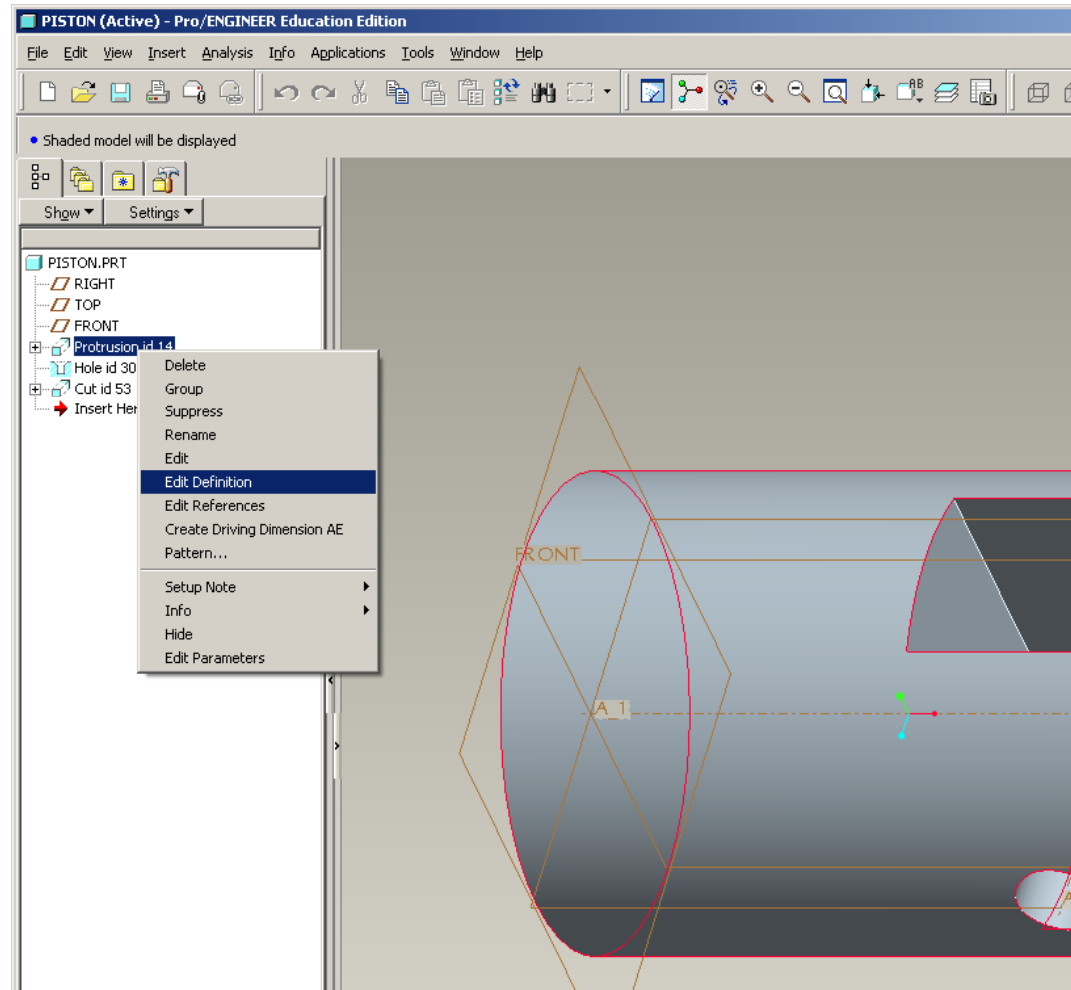**No Hidden Lines**

Hidden Lines

Wireframe

Pro/Engineer Stuff

I accidently exited…how do I get back in the feature?

In the model tree:

- **LMB to select the feature to edit**

- **THEN hold RMB until pop-up menu appears**

- **LMB > Edit Definition**

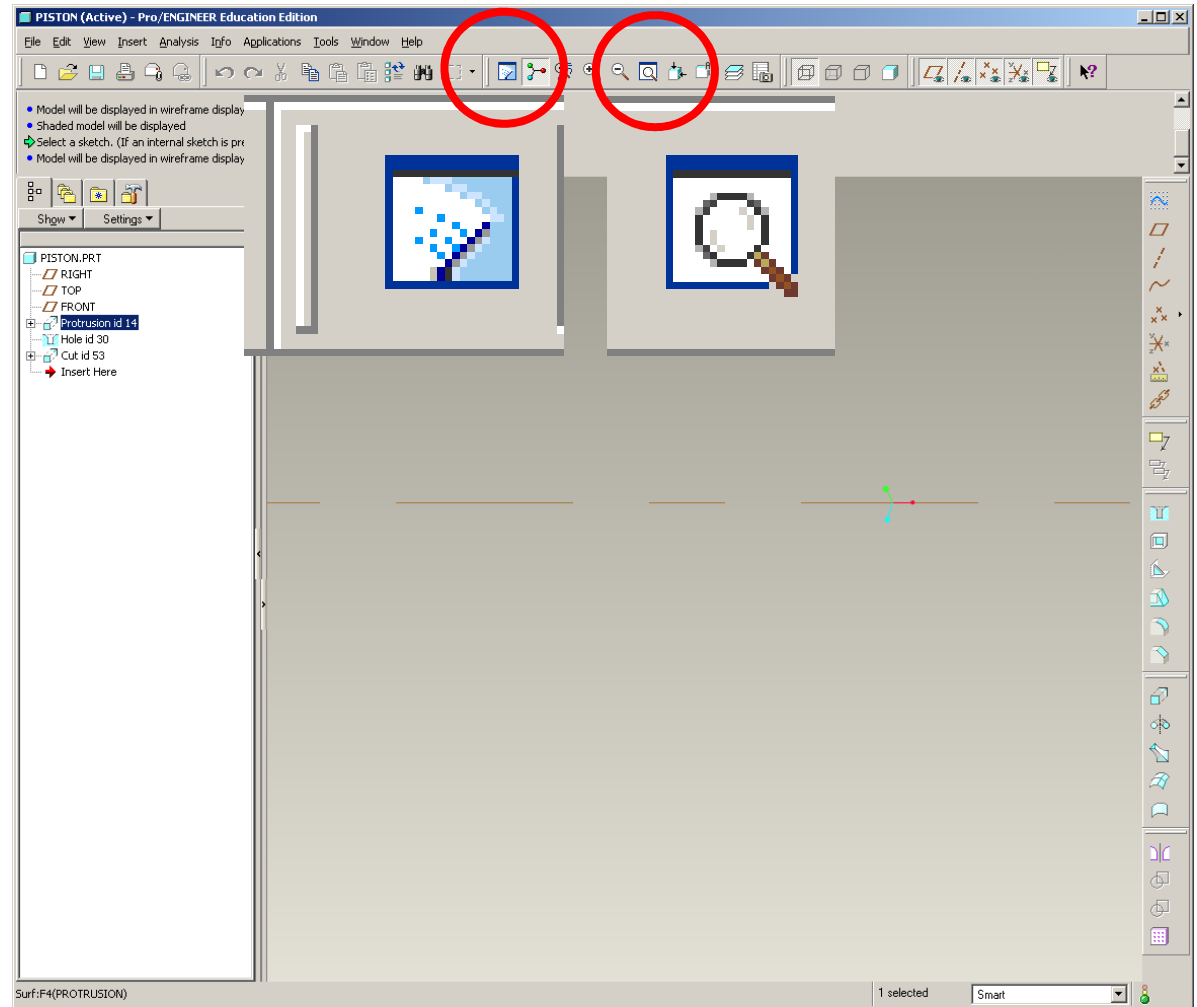- **The dashboard for the feature should then appear**

Pro/Engineer Stuff

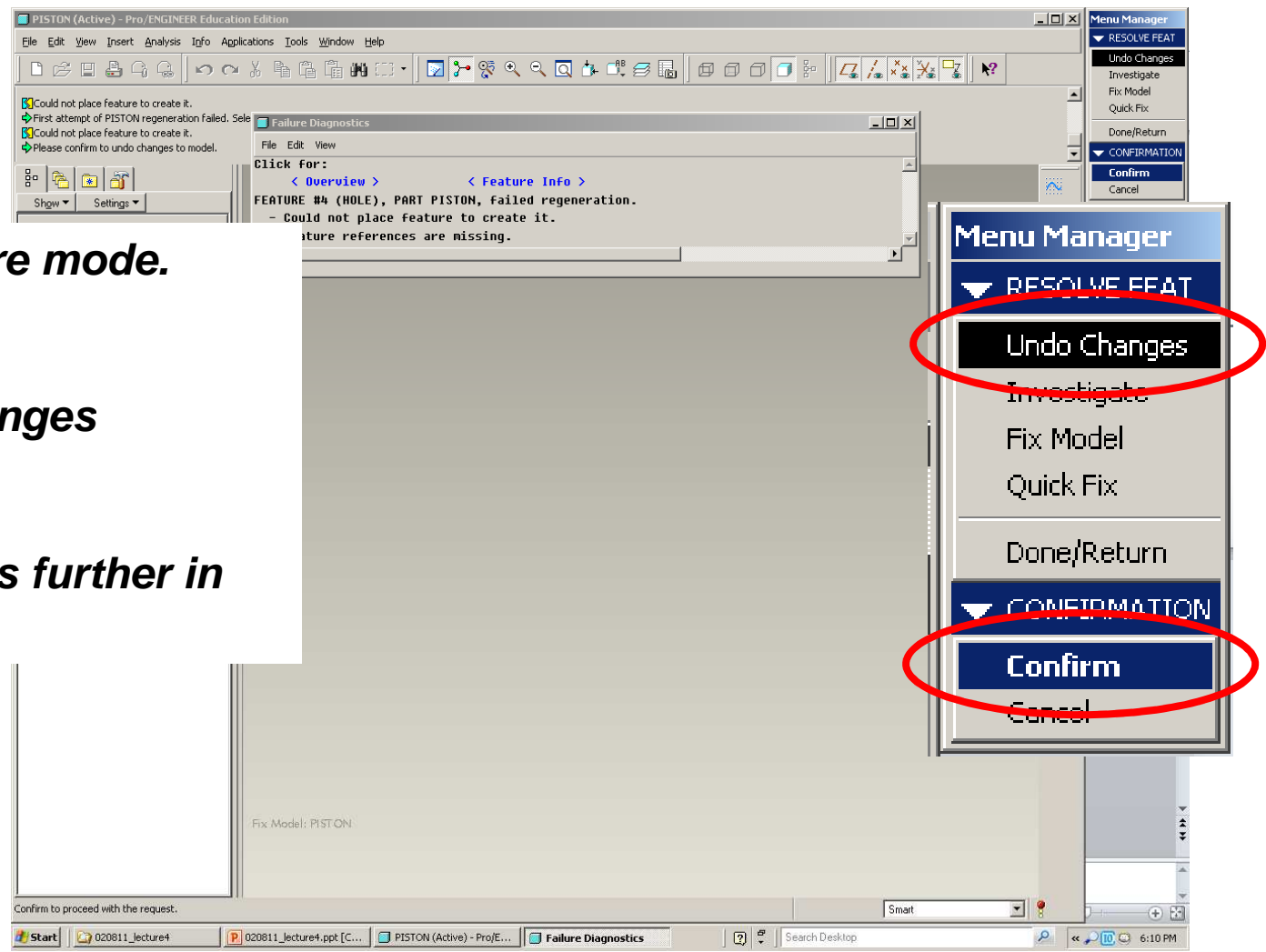*My model disappeared…where'd it go?*

Click:

1. Repaint

2. Refit

In most cases this will set things right

Pro/Engineer Stuff

What's this?

This is failed feature mode.

For now:

1. **Click Undo Changes**

2. **Confirm**

We will discuss this further in later lectures