University of Bristol Design & Computing 1 AENG11600

Computer Aided Design Task 1

Objectives

To introduce file types, project files and libraries (refer to **Introduction** hand-out).
To create sketches and add constraints.
To create solids using extrusion and add hole and fillet features.

Task 1

- Create a new single user project called **exercises** and start a new metric part (.ipt). Save this part as **bracket** (frequently!).
- Create a sketch (Fig 1a) noting automatic constraints, apply additional constraints and dimensions, e.g. ensure that the vertical lines either side of the 5x1.5 projection are co-linear. Display and remove restrictive constraints. Modify and hide/restore dimensions. **Do not delete dimensions** (unless they are duplicates and/or redundant).
- Extrude the sketch 50mm and experiment with **Edit Sketch** and **Edit Feature** to amend, finally returning to the sketch as shown.
- *Note! Rename all features as you go for clarity in the browser.*
- Re-orient an isometric view and place a second sketch centrally on the face shown and extrude 3mm (Fig 1b). On the top of the oval boss, sketch an offset oval 2.5 inside and extrude through to cut a hole. *Tip - use **Project geometry.***
- On a fourth sketch, place two **points** and add M5 x 6 deep tapped holes (drill 8 deep), and a fifth sketch with a **point** for the Ø10 through hole (Fig 1c).
- Since this bracket will be a casting (only the back face is machined) fillet all other corners R0.8.
- Present an isometric view of completed solid on screen for approval in session 2.

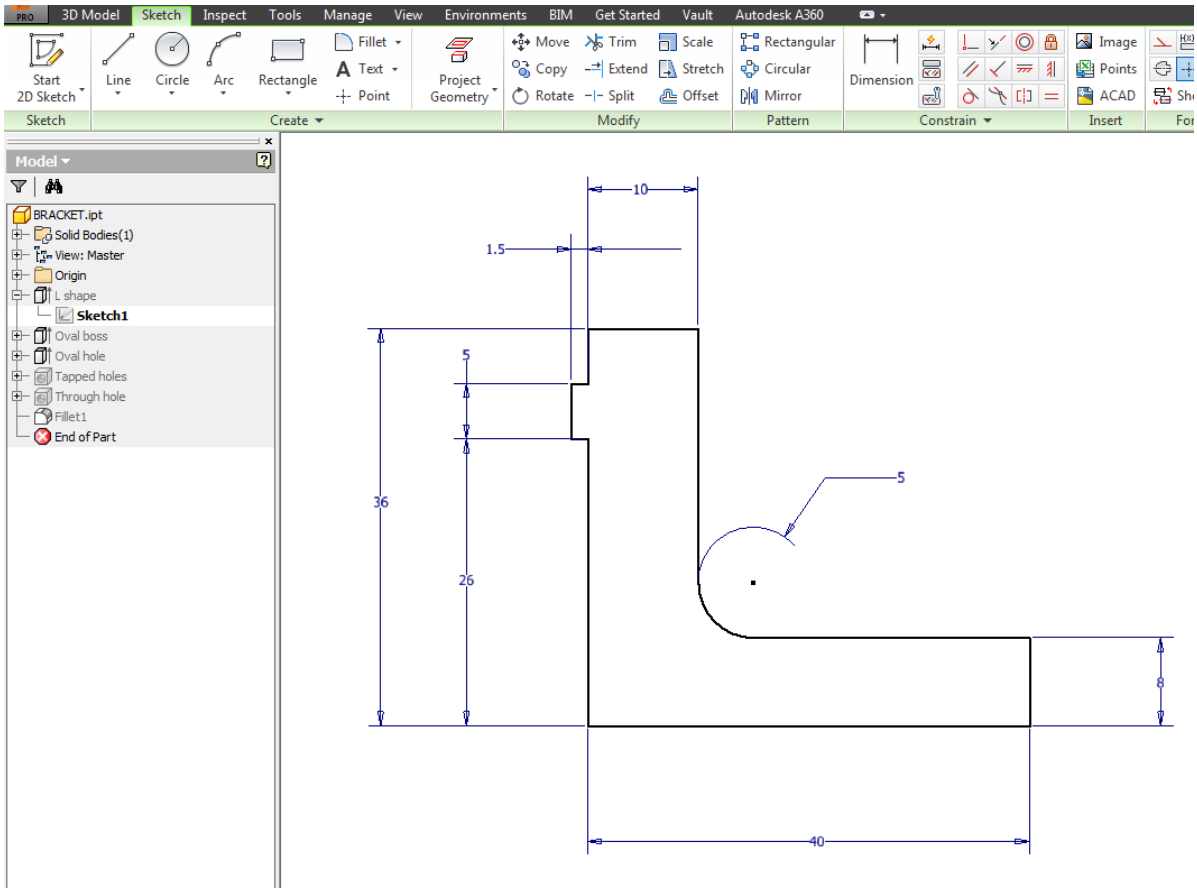

Fig. 1a

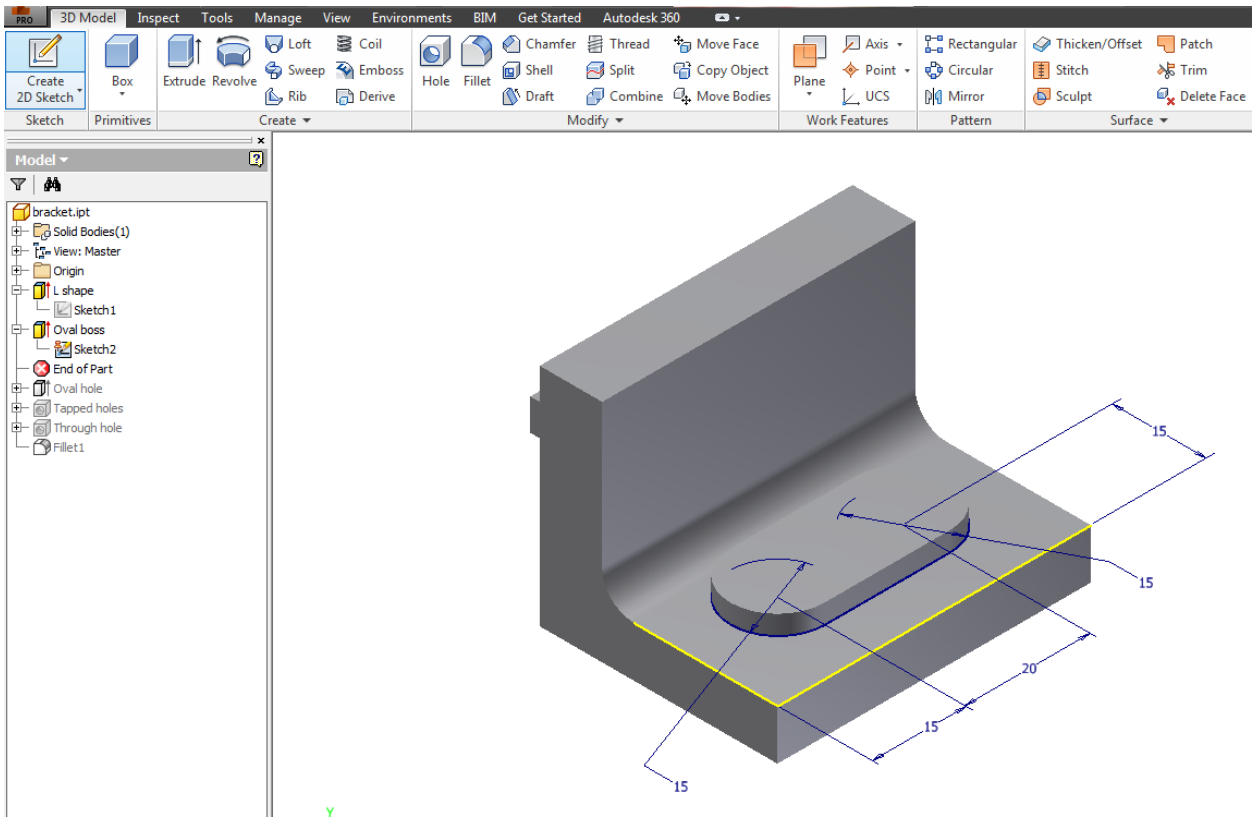

Fig. 1b

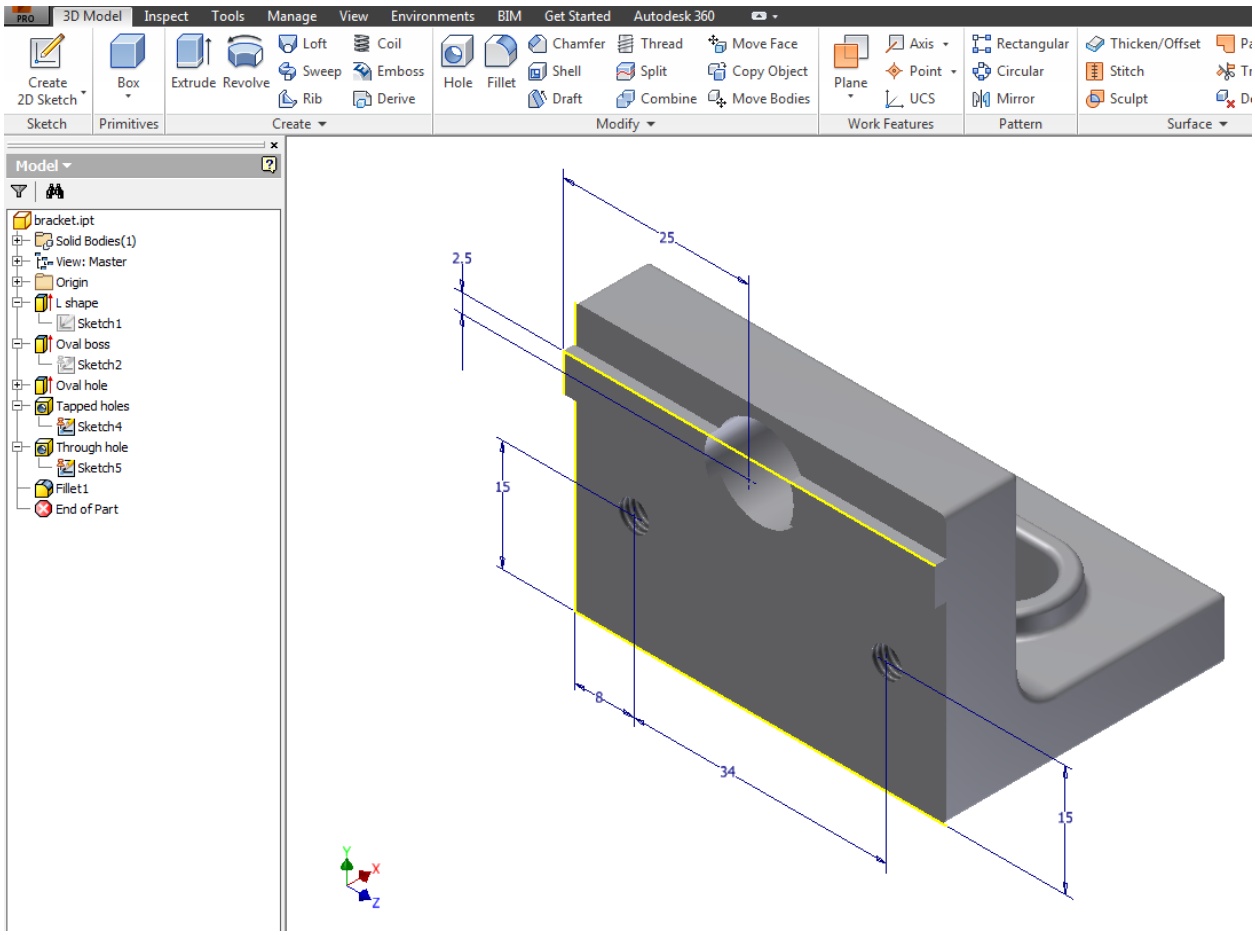

Fig. 1c