

Q2)

a)

- Understand aims + objectives, what are we trying to measure?
ie) deflection, stress, fatigue life, thermal stress, more we ask for, the more processing time required.
- Choose solver type, Linear or Non-linear.
(A linear analysis will expect a static state)
- Choose element type, which would be dictated by geometry. Elements can be 0D, 1D, 2D or 3D.
Ideally we select simplest element that is appropriate to reduce ~~run~~ time.
- Choose element order, where 1st order 2nd order could be used. It is important to understand, for example solid elements with only 3 Dof will have translational stiffness only in x, y + z, with no rotational stiffness. So if constrained where solid edge of the node is held, an error could be propagated due to twisting and thus no final resting state.
- Mesh size where both subjective checks using, ~~arbitrary~~ arbitrary element size (Default) could be used for a rough estimate of stress concentrations and then use finer mesh where needed more accurate results needed. Also, quantitative check of 'error norm' ~~check~~ and associated skewness, quality checks.