




FeenoX: a cloud-first finite-element(ish) computational engineering tool

Jeremy Theler ^{1,2}

1 Seamplex, Argentina 2 Instituto Balseiro, Argentina

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Summary

FeenoX is a cloud-first free no-X uniX-like finite-element(ish) computational engineering tool designed to solve engineering-related problems using cloud servers in parallel in such a way that the problem is defined in a plain-text near-English self descriptive input file read at run time, without requiring further user intervention after the invocation. FeenoX meets fictitious-yet-plausible Software Requirement Specifications (SRS). The FeenoX Software Design Specifications address each requirement of the SRS. FeenoX provides a set of common extents, capabilities and usefulness but offers different features (following slightly different spirits) for industry engineers, Unix hackers and academic researchers. The main features of this design basis are

- The tool has to be an already-compiled program (not a library) so regular users do not have to compile anything to solve a problem.
- Simple problems ought to need simple input files.
- There should be a one-to-one correspondence between the problem definition and FeenoX's input file, as illustrated in fig. 1.
- There should be an extension mechanism to allow hackers and researchers to add new partial differential equations to the tool.

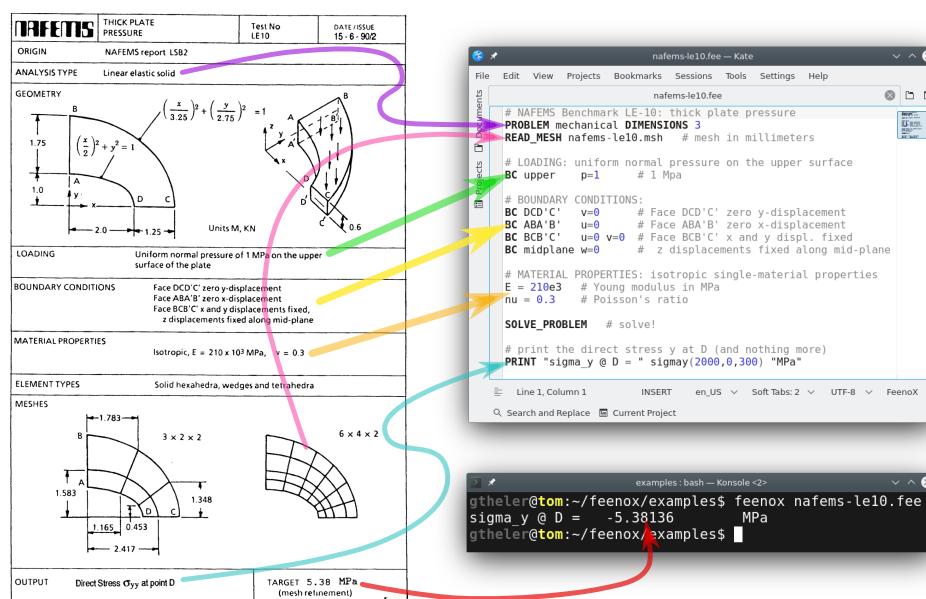


Figure 1: The NAFEMS LE10 problem statement ([Finite Element Methods & Standards \(Great Britain\), 1990](#)) and the corresponding FeenoX input illustrating the one-to-one correspondence between the two.