

A (very) quick overview of libre mechanical software

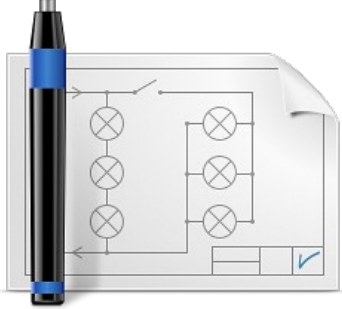
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Disclaimer

- I am just a hobbyist/student!
- I have not used most of this software in depth
- I will focus only in end-user programs
- Logos and trademarks are part of their respective owners
- Of course, software must be available for Linux
- Try them for yourself! I will try to be as impartial as possible
- It could be pretty good to make this a yearly thing. Help welcome!
- Gotta go fast!!!

CAD

QElectroTech



LibreCAD

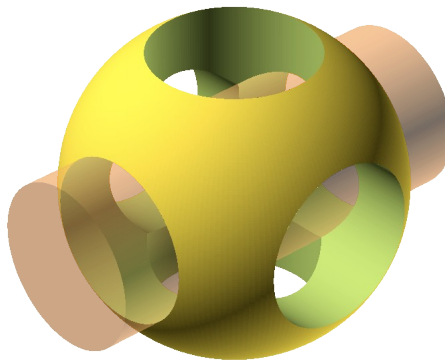


QCAD.org
Open Source CAD

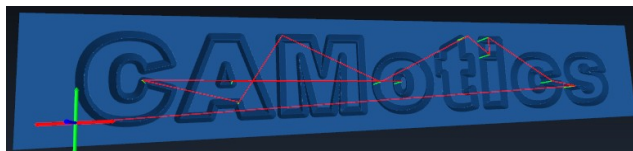
FreeCAD



OpenSCAD



CAM



Kiri:
Moto



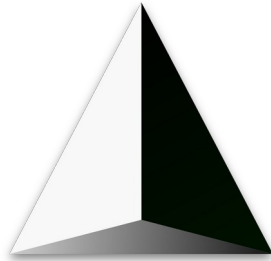
Slic3r

MESHing

MeshLab



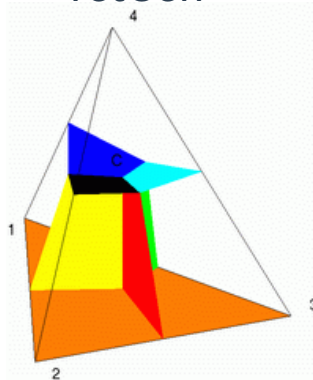
GMSH



MMG



TetGen

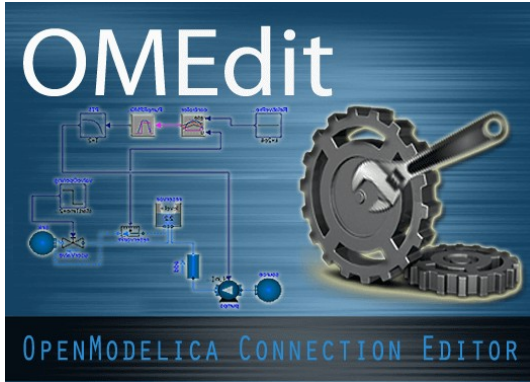


(Old) Cfmesh

libmesh

SnappyHexMesh

Simulation | General, there are just too many



ONELAB

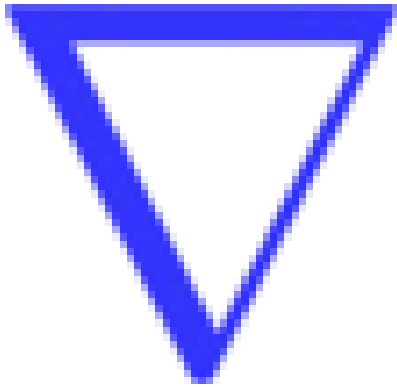


Simulation | Mechanical Systems

Calculix



Simulation | CFD



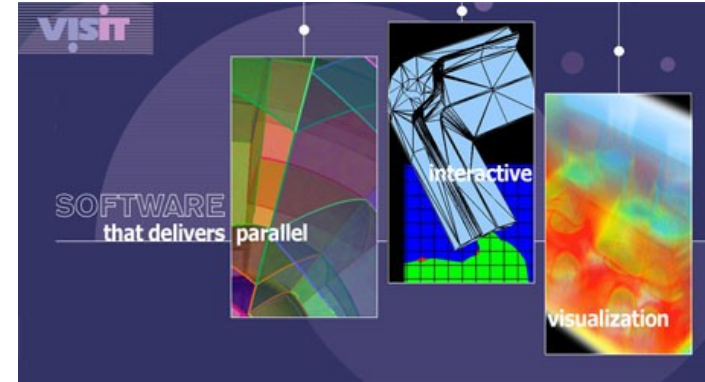
SUZ
code

DualSPHysics

OpenLB

Visualization

 *ParaView*



Energy / HVAC related tools

SAM



Ladybug Tools

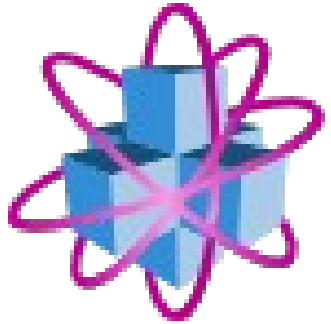


OpenStudio



RADSITE | radiance-online.org

Extras



ITOM



DAKOTA

Explore and predict with confidence.

OpenTURNS



COIN-OR

JuMP

Other tools

- **Documentation**

- LaTeX
- ODF
- Markdown
- Scribus (posters, flyers, books)
- Emacs-orgmode (no joke)

- **Project management**

- OpenProject
- Leantime
- ProjeQtOr
- Taiga
- Kanboard
- Wekan

- **ERP/CRM**

- Dolibarr
- ERPNext
- Tryton
- Odoo
- SuiteCRM

- **Accountancy**

- GNUCash
- HomeBank
- KMyMoney
- Firefly III
- Ledger
- Money Manager Ex

Current status | The Good bits

- We are already doing great in research and HPC!
- We have great tools for beginners and small businesses!
- We are incredibly flexible. But everything could be a little bit more integrated
- We can scale. From simple problems to research grade ones
- There are a ton of low-level quality tools! (Not covered in this talk)

Current status | Bad bugs

- Industry acceptance/usage (very) low
- No official support! (Not quite)
- 5 Axis CAM, PLC programming :’(
- Low integration of the different tools. Bravo to Salome and FreeCAD
- User interfaces are lagging behind
- Some big domains are not covered, for example, turbomachines

Future

- Obviously: need for better commercialization!
- Starting with support. Some are already **providing** different **services**
- Better/more accessible documentation. Tutorials, courses
- More visibility. That is the goal of this talk
- More/better integration of different tools
- Better UI/UX
- Maintain and improve the quality of the software

What can I do?

- Use the programs!
- Take part in the community! Help people in the forums, write blogs...
- Tutorials, documentation and examples
- Feedback: opinions, testing unreleased versions, new features...
- Spread the word, show what we are capable of
- Translate
- Code?
- Donations?

Thank you!
Is there time for Q&A, issues?

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