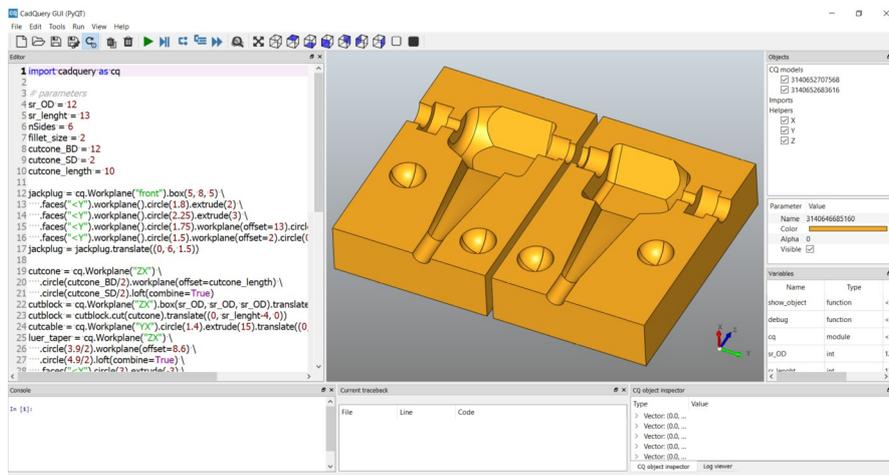


Towards CadQuery 2.0

Abstract

CadQuery (CQ) [1] is a Python library for building of parametric 3D models. The overarching design goal is to be extremely fluent and as close as possible to the design intent. CQ is based on the open source CAD kernel from OpenCascade and therefore offers industry standard B-Rep modeling capabilities and allows exporting to lossless formats such as STEP as well as lossy ones such as STL. Originally it used Python bindings based on FreeCAD [2] but recently we switched to PythonOCC [3] to be more flexible and have full access to the underlying CAD kernel capabilities.

In the talk I will summarize the current status of the CQ project, show some interesting usage examples and discuss newly implemented features. Furthermore I will elaborate on the future plans of the core development team and touch on some of the challenges of maintaining a project such as CQ. I will also present a fairly new addition to the CQ ecosystem – CQ-editor [3]. It is a Python/PyQt5 based lightweight cross-platform GUI editor that allows to quickly develop and preview CQ 3D models. It also offers graphical debugging and CQ stack introspection capabilities which dramatically lowers the entry barrier for trying out and using CQ.



CQ-editor screenshot.

References

- [1] <https://github.com/CadQuery/cadquery>
- [2] <https://www.freecadweb.org>
- [3] <https://github.com/tpaviot/pythonocc-core>
- [4] <https://github.com/CadQuery/CQ-editor>

Speaker bio

I discovered the CadQuery project in 2016 and was immediately charmed by its expressiveness and compactness. Soon after I started contributing and at certain point become a core developer. I did lead the transition from FreeCAD to PythonOCC based kernel and started developing a lightweight GUI with extensive debugging capabilities. By trade I am an applied physicist with an M.Sc. degree from Wroclaw University of Technology and a Ph.D. degree from Eindhoven University of Technology. I live in Utrecht and currently work as an algorithms engineer for a large semiconductor equipment vendor from Holland.