

BOCART is a small Danish Company producing go-carts. They wish to gamify some teaching material by using their “bocarts”. For amplifying a lesson, groups of students could compete against each other not only in driving the BOCARTs, but also in applying the skills or knowledge from the lesson. A team would consist of a bocart driver and one other student. The other student would need to solve some quizzes on some topic; when the other student solves a quiz correctly, this will provide the team's bocart with “more power” (allowing it to drive faster for a period of time).

In order to realize this idea, BOCART needs some teaching and learning software to be able to communicate and control the bocarts. This requires some extra hardware and some software controller on the bocarts (we call them BoCart Controllers for now) as well as some cloud based solution for the communication between the learning software and the bocart controllers. DTU Compute helped with designing such a cloud-based solution. Since neither the hardware on the bocarts nor the BoCart Controllers existed at the time when the project started, and since it also was not clear which learning software would be used, BOCART and DTU Compute had agreed to focus on the design of the cloud software and implement a proof-of-concept for this design. For the proof-of-concept, the bocart controllers are replaced by Bocart Simulators and the learning software is replaced by a simple BoCart (Web) Client. The cloud software and its interfaces, however, are designed in such a way that it could eventually be used for the complete BoCart Solution.

A short overview over the resulting architecture can be found [here](#).