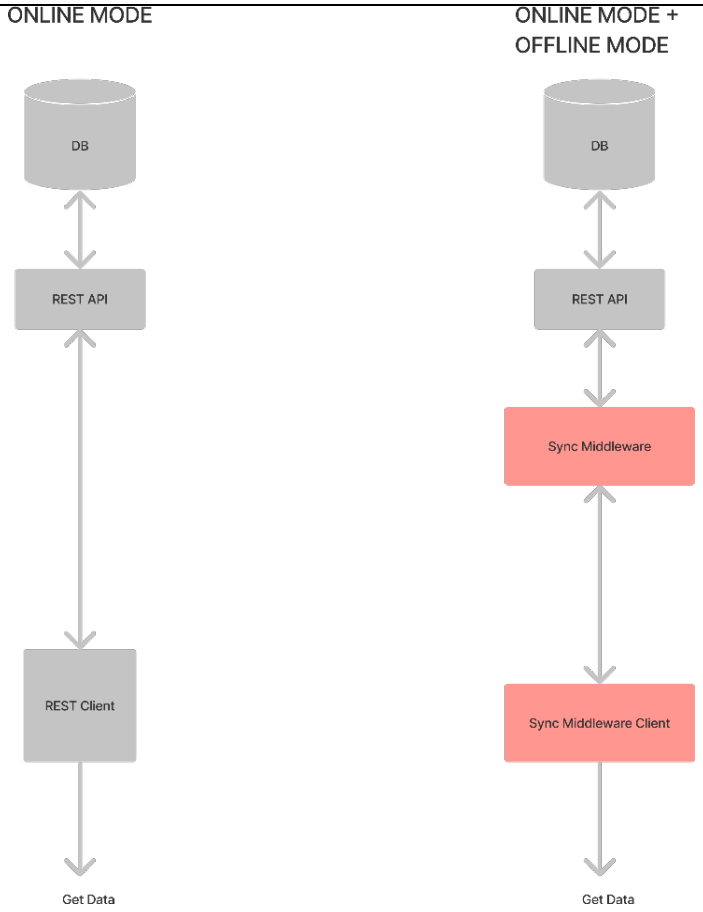
Company Design Challenge

Prof. Eduardo Guerra (UniBZ)

https://www.infominds.eu/

Infominds is a software company which accompanies businesses on the path of digital transformation on the basis of the ERP software solutions Radix and Ergo and with mobile solutions (app, REST API, webapplication).

Context	The apps developed by the company work in online mode, exchanging data with the ERP database via REST API. The company wants to provide offline mode for the app, which means have always updated data in the app that can be used in offline mode.
Contact	Marco Matteotti: Marco.Matteotti@infominds.eu
Challenge	Design a template/prototype architecture in which the same application would be able to work when the ERP database is not available. In other words, the REST API should be able to access the same data locally. This solution should work for any service, so middleware must not depend on the structure of the data being exchanged. The **purpose** of the challenge is not to make the app work offline but to find a generic way (reusable in other apps) to have the data updated for offline use (the data update is either manually requested by the user from the app or can be done automatically from a background task of the app).
To complete…	• Create a simple app that shows a product catalogue (with name, description, price, etc.) that uses a REST API to retrieve the data from a remote service. • When the remote service is offline, the app should transparently access a copy of the same data locally. In another words, the app should behave the same way, but the catalogue must be viewable with all the information even when there is no network. • When the app goes back online, any changes to the article data (or new data entered) in the ERP must be synchronized with the local copy. • The students should be able to show that their solution is independent of the data exchanged and could be reused for other services. • The students should also analyze the impact of their solution in performance, considering both time and the amount of data transferred.
Tips	A way to solve this problem is using a middleware that keeps the data from the remote database (of interest to the app) synchronised and updated locally, so users can use the app in offline mode but with updated and complete data.

	
Number of students	2
Lab Points	8
Conditions	If you take this challenge, you agree on sharing your code with your colleagues and with the company, which might integrate it directly, create a solution based on it or don’t use it at all.