

# SMBUD 2021 - Project work – part 2

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Suppose you want to build an information system for managing pandemic information for a given country.

## DELIVERY #2

You need to design, store and query data on a NoSQL DB supporting a certification app for COVID-19.

The data storage solution must keep track of people and information about their tests and vaccination status.

In particular, suppose you want to record in a document-based storage the certificate of vaccination /testing and the authorized bodies that can deliver them.

The certificate should include:

- who is vaccinated when and where (first and second doses, with which type of vaccine)
- The kind of vaccine issued (brand, type, lot, production date)
- The list of tests taken, when and where, and the respective results
- doctors and nurses attending the vaccination/tests
- demographic details of the vaccinated person
- Emergency contact person and details

The description of the authorized bodies should include the full description of the organization and location with all the relevant details (including but not limited to: GPS position, hospital or other health service name, type of entity, department issuing the vaccine, address, ...).

Consider that your data will be used for checking the validity of the certificate (concerning expiration dates, evolution of the rules, and so on). Decide how to manage this requirement.

Tasks to perform:

- Write the specification and hypotheses of the problem and solution
- Design conceptual model (ER or similar)
- Store a sample dataset in MongoDB (some hundred nodes at least)
- Write basic Queries (minimum 5) and Commands (minimum 3) useful for typical usage scenarios
- Prepare a short report describing the above aspects
- Optional: if you want you can actually implement also some application / UI or similar (a bonus on the mark will apply)

Deliverables to submit:

- Short report as above
- ZIP with the implementation (including the database, as creation script or link to DB dump)

Deadline:

- December 12<sup>th</sup> 2021