

[DT 2025] Quiz 4 - 23/4/2025 - Big data, Data formats, smart objects

Time available 10 minutes

All questions must be answered and then the form submitted

* Obbligatoria

* Questo modulo registrerà il tuo nome, inserire il nome.

1. Enter your Last name and Name *

2. Which is the main difference between RFID and NFC technology? * (1 punto)

- ☐ NFC is peer-to-peer
- ☐ NFC is used on a cell phone
- ☐ NFC allows processing data

3. What would you use to locate a truck in a fleet management application? * (1 punto)

- ☐ Beacons
- ☐ RFID
- ☐ GPS

4. Where do you usually associate information on an object corresponding to an ID? * (1 punto)

- ☐ in the information system
- ☐ in the ID structure
- ☐ in the sensors data

5. Data in JSON are represented * (1 punto)

- ☐ as strings
- ☐ as tables
- ☐ with a format based on indentation

6. A time series is
* (1 punto)

- ☐ a conceptual data structure
- ☐ a series of values with an associated timestamp
- ☐ a function in time

7. Which of the following is a definition for hierarchical data structures * (1 punto)

- ☐ data structures with multiple values
- ☐ data structures with nested constructs
- ☐ data structures that generalize data

8. Given the following json code in file persons.json:

```
[
  {
    "firstName": "John",
    "lastName": "Smith",
    "city": "Milan",
    "phoneNumber": "646 555-4567"
  },
  {
    "firstName": "Barry",
    "lastName": "White",
    "phoneNumber": "646 444-4567"
  }
]
```

and the Python code:

```
import pandas as pd
df = pd.read_json('persons.json')
df.loc[0]['city']
```

Executing the code, you get the following answer:

* (2 punti)

- ☐ nan (or NaN)
- ☐ the json code is not valid
- ☐ "Milan"

9. How can multiple values for an attribute be modeled in relational databases? For instance, if a person has an id, lastname and firstname and several phone numbers. * (1 punto)

- ☐ they cannot be modeled
- ☐ an additional table is needed to model multiple values
- ☐ a list can be inserted as the attribute value

10. In geoJSON the geometry represents

* (1 punto)

- ☐ a set of points
- ☐ predefined types of geometrical objects
- ☐ a point

11. Which of the following statements is true about beacons * (1 punto)

- ☐ a beacon uses BLE
- ☐ a beacon is usually a mobile object
- ☐ a beacon transmits data about the object

12. In a time series * (1 punto)

- ☐ the time points always indicate the time of occurrence of the events
- ☐ the time points always indicate the times of the recording of the events
- ☐ the time points may indicate the time of the events or the times of the recording of the events

13. In an object of type Feature in geojson

* (1 punto)

- ☐ properties can be an empty set
- ☐ at least one property must be provided
- ☐ properties can be omitted

14. Why is magnetic induction needed in a passive RFID? * (1 punto)

- ☐ to process data
- ☐ to operate the RFID when the battery is exhausted
- ☐ to activate the circuit

15. Localization of objects using RFID technology * (1 punto)

- ☐ is based on the position of the transceiver
- ☐ is based on the position transmitted by the object
- ☐ is not possible

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