

Datamodellering övningstenta

I provet ingår multiple choice frågor och frågor där du behöver utveckla mer. I multiple choice frågorna gäller att 1 alternativ är korrekt, och svarar man på flera alternativ samtidigt, räknas det som noll poäng på den frågan.

Tillåtna hjälpmedel:

Ett A4-papper handskrivna anteckningar, båda sidorna får användas. Får skriva vad som helst på detta A4-papper.

Tid: 4 timmar

Betygssättning

Godkänt: 50% av totala poäng

Question 1

A primary key must be a natural key? (1p)

- a) True
- b) False

Question 2

Physical ERD is closer to business than conceptual ERD (1p)

- a) True
- b) False

Question 3

No transitive dependency is a requirement to comply with one of the following normal forms, which one? (2p)

- a) ONF
- b) 1NF
- c) 2NF
- d) 3NF

Question 4

Which of the following is not a necessary property of a primary key in a relational database table? (2p)

- a) The values must be unique

- b) The values can't be NULL
- c) A primary key must be a single column
- d) Each row must have a value for the primary key
- e) A table can only have one primary key

Question 5

You have identified a one-to-many relationship between two entities in your conceptual data model, how will it affect the actual implementation? (2p)

Question 6

You have identified a many-to-many relationship between two entities in your conceptual data model, how will it affect the actual implementation? (2p)

Question 7

How do you ensure referential integrity and why is it desirable to have it? (2p)

Question 8

Your data is in this format

```
[
  {
    "user_id": 42145,
    "first_name": "Kokchun",
    "last_name": "Giang",
    "about": "Data engineer, scientist, and educator passionate about turning messy data into valuable insights. Loves open-source projects and community contributions.",
    "photo_url": "https://media.licdn.com/digitalprofile/kokchun",
    "experiences": [
      {
        "title": "Founder & Lead Consultant",
        "organization": "AIgineer",
        "start_date": "2024-01",
        "end_date": "present",
        "description": "Advising businesses on integrating AI solutions and developing custom data engineering pipelines."
      }
    ]
  },
  {
    "user_id": 45636,
    ...
  }
]
```

Is this structured data, semi-structured or unstructured? Describe how you would store it this data? (2p)

Question 9

This is an ERD for hotel



- Which type of ERD is this? (1p)
- Write out possible relationship statements for each entity. (2p)
- This diagram can't be implemented, which part needs to change and how should it be changed? (2p)
- Write in relational schema notation a few possible attributes for each entity. (2p)