CS301 Fall 2020
HW#1 Solutions

1.(4) High level conceptual, low level physical, implementation representational, NoSQL

2. Structural (5)

- patient: name, address, ssn, insurance info, PID
- physician: name, office address, ssn, specialty
- insurance: name, office address
- office visits: patient_name, PID, date, time, physician, diagnosis
- Payments: patient_name, PID, insurance_name, diagnosis_code, amount

Administrative (3)

- Patient info inserted by staff, can be viewed by all staff, doctors
- Physician info inserted by staff, can be viewed by all staff and doctors
- Office visits, doctors can see all, but staff can see everything but diagnosis
- Etc.

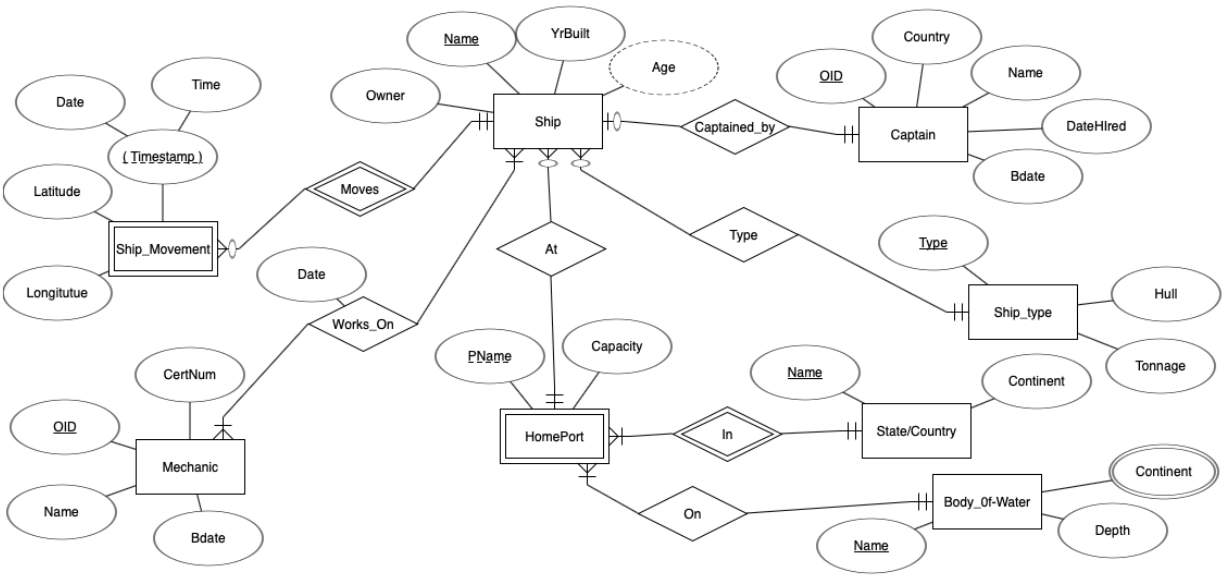
Descriptive (4)

- Appointments for a certain doctor and frequency, can deduce info, e.g., cancer
- If a lot of payments to an insurance company can deduce person is sick
- Etc.

3. (5) The DB user only has to know the schema, the user does not have to know the internal storage format and any changes to the internal format will not require changes to any program written by the user.

4. (4) Positive: Optimization, control redundancy, restrict unauthorized access, backup and recovery, enforce integrity constraints; Negative: overhead

5. (60)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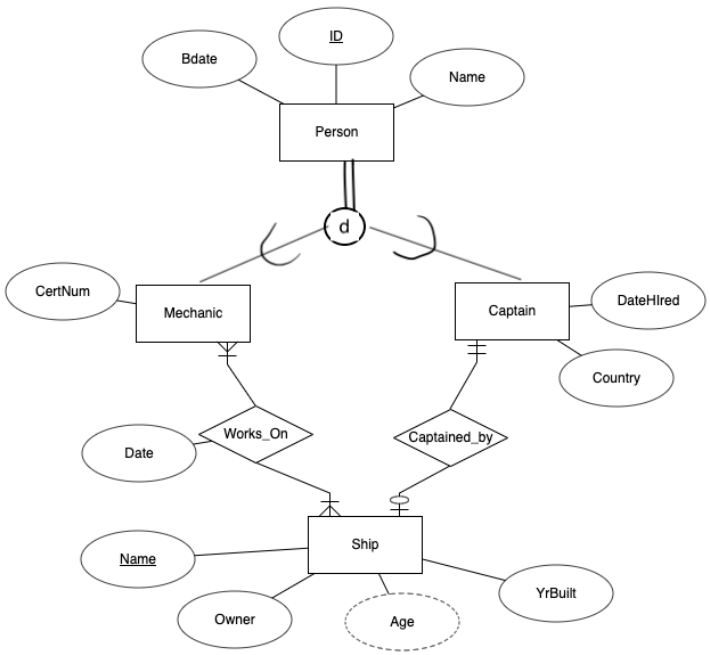
6a(20)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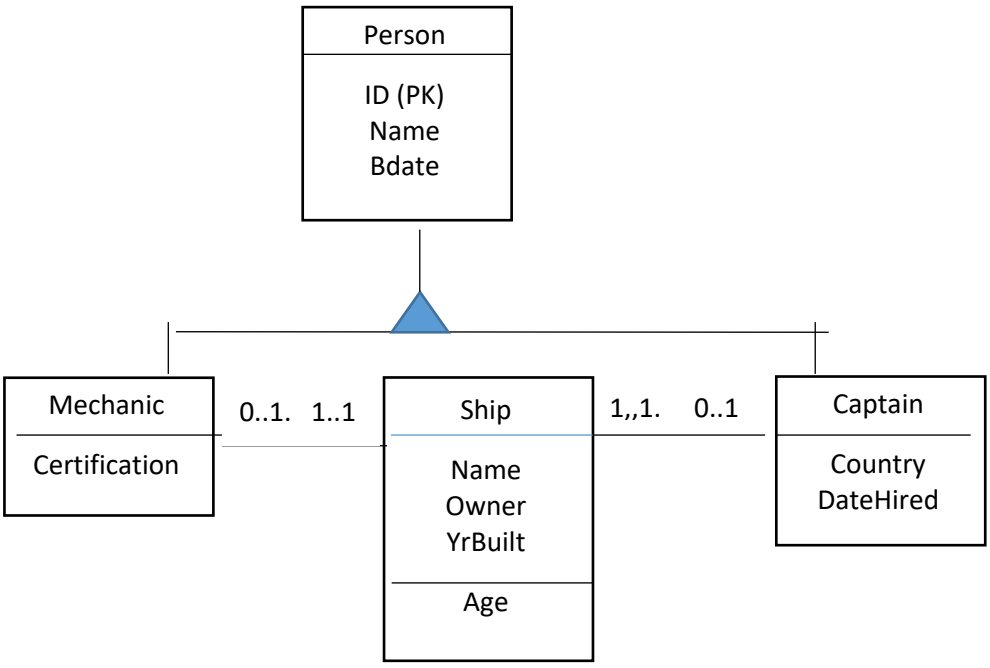
6b (2)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