

Definition of BCNF (paraphrased by me):

A table is in BCNF if:

- 1) Every attribute is related to the primary key(s)
- 2) Each attribute is directly related to the table and only stored once
- 3) Attributes that can be found through queries aren't stored
- 4) Changing one attribute doesn't impact others

Relational Schema:

Crab(crab_id: INTEGER, nickname: TEXT UNIQUE, species: TEXT, well_being: DOUBLE)
^^everything depends on the crab_id, every attribute isn't stored in any other location, attributes like the total well-being of all crabs that can be found through a query aren't stored, attributes are independant

SpottedCrab(crab_id: INTEGER, date_found: DATE, shell_is_artificial: BOOLEAN, shell_type: TEXT)
^^everything depends on the crab_id, every attribute isn't stored in any other location, attributes like the crab nickname that can be found through a query aren't stored, attributes are independant

CrabGroup(crab_group_id: INTEGER, group_location: TEXT)
^^everything depends on the crab_group_id, every attribute isn't stored in any other location, attributes like each crab in the group that can be found through a query aren't stored, attributes are independant

Shell(shell_id: INTEGER, printer_id: INTEGER, group_id: INTEGER, mass: NUMBER, date_produced: DATE)
^^everything depends on the shell_id and printer_id, every attribute isn't stored in any other location, attributes like each crab that wore the shell that can be found through a query aren't stored, attributes are independant

Wears(crab_id: INTEGER, shell_id: INTEGER)
^^table contains only foreign keys, so it is in BCNF

Printer(printer_id: INTEGER, factory_id: INTEGER, tons_of_emissions_produced: NUMBER, date_installed: DATE)
^^everything depends on the printer_id and factory_id, every attribute isn't stored in any other location, attributes like each shell produced at the printer that can be found through a query aren't stored, attributes are independant

Factory(factory_id: INTEGER, address: TEXT, creation_date: DATE)

^^everything depends on the factory_id, every attribute isn't stored in any other location, attributes like each printer in the factory that can be found through a query aren't stored, attributes are independant

Person(person_id: INTEGER, first_name: TEXT, last_name: TEXT, date_of_birth: DATE, email: TEXT, phone: NUMBER, address: TEXT)

^^everything depends on the person_id, every attribute isn't stored in any other location, attributes like each person's salary that can be found through a query aren't stored, attributes are independant

Employee(employee_id: INTEGER, salary: NUMBER, date_joined: DATE)

^^everything depends on the employee_id, every attribute isn't stored in any other location, attributes like each person's first name that can be found through a query aren't stored, attributes are independant

Scientist(scientist_id: INTEGER, job: TEXT, education: TEXT)

^^everything depends on the scientist_id, every attribute isn't stored in any other location, attributes like each person's salary that can be found through a query aren't stored, attributes are independant

Researches(crab_group_id: INTEGER, scientist_id: INTEGER)

^^table contains only foreign keys, so it is in BCNF

FactoryWorker(worker_id: INTEGER, factory_id: INTEGER)

^^everything depends on the worker_id, every attribute isn't stored in any other location, attributes like each person's salary that can be found through a query aren't stored, attributes are independant