Instituto Superior Técnico

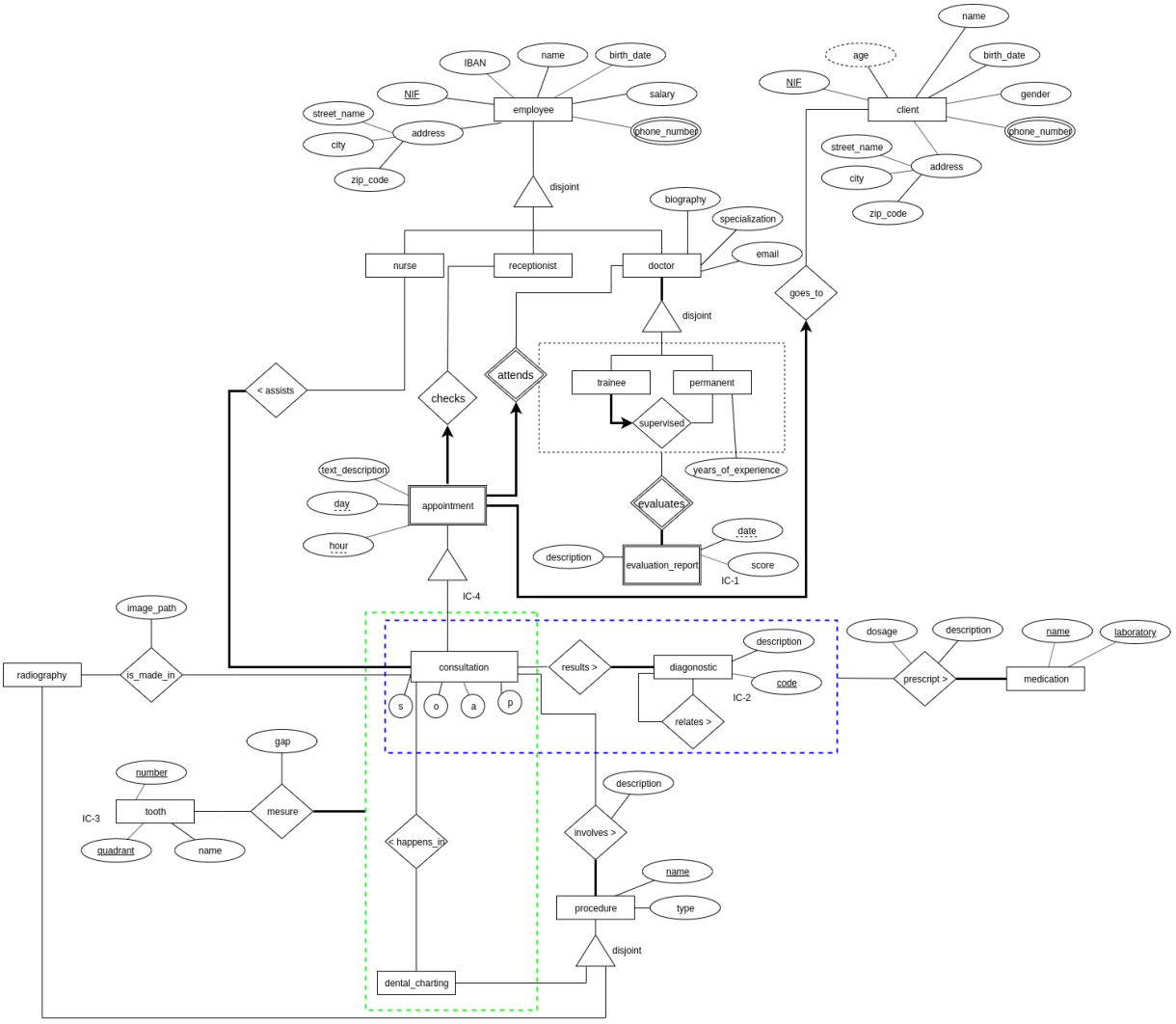
Information Systems and Databases

Project Assignment - Part 1

Assignment 1 - Database Modeling

Alunos	*Número de aluno*
Bernardo Bastos	84012
Ivo Simões	87024
João Chumbinho	81761

1 E-R Model



IC-1 The score should between 1 to 5

IC-2 Diagonostic codes should be standardized to SNODENT

IC-3 Teeth are identified by the Palmer Notation Numbering System

IC-4 Only exists consultation if the client does not miss his/her appointment, appearing at the clinic on the scheduled date

2 Relational Model

employee(NIF, IBAN, name, birth_date, phone_number, street_name, zip_code, city, salary)

phone_numbers_emplyee(NIF, phone_number)

client(NIF, name, birth_date, gender, street_name, zip_code, city)

RI: age should be computed from birth date and must be greater than 0

phone_numbers_client(NIF, phone_number)

medication(name, laboratory)

tooth(number, quadrant, name)

diagnostic(code, description)

procedure(name, type)

RI: Procedures cannot be simultaneous be other procedures

nurse(NIF)

NIF: FK(employee)

receptionist(NIF)

NIF: FK(employee)

doctor(NIF, biography, specialization, email)

NIF: FK(employee)

trainee(NIF)

NIF: FK(doctor)

permanent(NIF, years_of_experience)

NIF: FK(doctor)

evaluation_report(NIF_trainee, NIF_permanent, date, score, description)

NIF_trainee: FK(trainee)

NIF_permanent: FK(permanent)

RI: Score must be between 1 and 5

appointment(NIF_doctor, day, hour, text_description)

NIF_doctor: FK(doctor)

consultation(NIF_doctor, day, hour, s, o, a, p)

NIF_doctor, day, hour: FK(appointment)

dental_charting(name)

name: FK(procedure)

radiography(name)

name: FK(procedure)

checks(NIF_receptionist, NIF_doctor, day, hour)

NIF_receptionist: FK(receptionist)

NIF_doctor, day, hour: FK(appointment)

assits(NIF_nurse, NIF_doctor, day, hour)

NIF_nurse: FK(nurse)

NIF_doctor, day, hour: FK(consultation)

goes_to(NIF_client, NIF_doctor, day, hour)

NIF_client: FK(client)

NIF_doctor: FK(appointment)

supervised(NIF_trainee, NIF_permanent)

NIF_trainee: FK(trainee)

NIF_permanent: FK(permanent)

results(NIF, day, hour, code)

NIF, day, hour: FK(consultation)

code: FK(diagonostic)

relates(code_1, code_2)

code_1: FK(diagonostic)

code_2: FK(diagonostic)

perscript(NIF, day, hour, code, name, laboratory, dosage, description)

NIF, day, hour, code: FK(results)

name, laboratory: FK(medication)

is_made_in(name, NIF, day, hour, image_path)

name: FK(radiography)

NIF, day, hour: FK(consultation)

involves(NIF, day, hour, Name, description)

NIF, day, hour: FK(consultation)

name: FK(procedure)

happens_in(NIF, day, hour, name)

NIF, day, hour: FK(consultation)

name: FK(dental_charting)

measure(NIF, day, hour, name, number, quadrant, gap)

NIF, day, hour, name: FK(happens_in)

number, quadrant: FK(tooth)

3 Non trivial design decisions

It is assumed that not every employee in the dental clinic are nurses, receptionists or doctors.That's why we have an undirected line. We also assume that a receptionist cannot be a nurse or a doctor and vice-versa, so the use of disjoint.

All doctors in the clinic are trainees or permanent. A permanent doctor cannot be a trainee and vice versa.

To be able to prescript a medication is necessary the information of the consultation and the diagnostic, so the consultation and the diagnostic are aggregated.

A measure of a tooth happens with a dental charting procedure in the context of a consultation to get the client's information. That's why we aggregate the dental chart procedure with the consultation to get the information of both entities.

The image path of the radiography procedure is connected to the consultation, in order to get the client's information. We assumed that the images from the radiography are identified by the path and the consultation information.