# HOSPITAL MANAGMENT SYSTEM

## Entity description

*1) Employee:*

- *ID* – a unique employee id
- *position* - this is the position held by this employee (e.g. Head Nurse, Surgeon, Pediatrician…)
- *name* – is the name of employee
- *address* – consists of *city, zipcode* and *street*
- *phone* – is the phone number of employee

*2) Nurse: see Employee*

*3) Doctor: see Employee*

*4) Patient*

- *ID* – is the unique id of patient
- *name* – is the patient name
- *date of birth* – DD/MM/YYYY
- *phone* – the patient can have several phone numbers (1..N)
- *blood type* – blood type of patient (A, B, AB or 0)
- *insurance ID* – is the health insurance unique ID

*5) Department:*

- *code* – is the unique department id
- *name* – is the unique department name
- *head* – is the employee id of head physician of the department

*6) Block:*

- *code* – is the unique block id
- *floor* – is the floor on which this block is located

*7) Room* (is a part of block; room doesn't exist without block) – **weak entity:**

- *number* – room number
- *type* – is the type of room (e.g. Single, Twin)

*8) Examination:*

- *date and examination room* – are unique combination for appointment

*9) Diagnosis:*

- *code* – is a unique code for diagnosis
- *name* – is the name of diagnosis

# Relationships

*1)* ***Employee*** *have a recursion relationship* **<u>Supervisor</u>**, *which means that:*

- Each employee have 0..N subordinates
- Each employee have 0..1 supervisor

*2)* ***Nurse*** *and* ***Doctor*** *are* ***Employees*** *(ISA hierarchy)*

*3)* ***belongs_to*** *is a relationship between* ***Doctor*** *and* ***Department***

- Doctor is a part of only one Department
- Department can have 1..N Doctors

*4)* ***on_call*** *is a relationship between* ***Nurse*** *and* ***Block***

- a call nurse can only be assigned to 1..1 block
- each block have only 1..1 call nurse

*5)* ***Block*** *has* ***Rooms (weak relationship)***

- there can be N rooms in a block
- each room can be a part of only one block

*6)* ***stay*** *is a relationship between* ***Patient*** *and* ***Room***

- if necessary, the patient can stay in 1 room assigned to him
- there can be N patients in each room, depending on the type of room

*7)* ***Nurse assists Examination***

- Nurse can attend the patient with the Doctor (0..N means that nurse can be present during examination, but not always)
- 0..1 nurse may be present at the examination

*8)* ***Doctor have Examination***

- Doctor can have N examinations
- only one Doctor is present at each examination

*9)* ***Patient comes_for Examination***

- the patient may be assigned 0..N examinations
- only one Patient can be present at each examination

*10)* ***Doctor diagnoses*** *the* ***Diagnosis*** *to the* ***Patient (ternary relationship)***

- 1..N – the <u>Doctor</u> has N Patients with a Diagnosis
- 0..1 - the <u>Patient</u> can be diagnosed by a Doctor (1) or the Doctor can say that the <u>Patient</u> is healthy (0)
- 0..N each <u>Diagnosis</u> can be diagnosed in N patients, or not diagnosed by anyone in this hospital