ĐẠI HỌC QUỐC GIA THÀNH PHỐ HỒ CHÍ MINH

TRƯỜNG ĐẠI HỌC BÁCH KHOA

KHOA KHOA HỌC VÀ KỸ THUẬT MÁY TÍNH

DATABASE SYSTEM

HOSPITAL DATABASE
ASSIGNMENT #1

Giảng viên hướng dẫn: Phan Trọng Nhân
Lớp L11
Nhóm 2

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Contents

1. EERD Diagram:

After having discussed and analysed thoroughly the Hopital Database's descriptions we drew the EERD to present the relationship between Entity Types as follow:
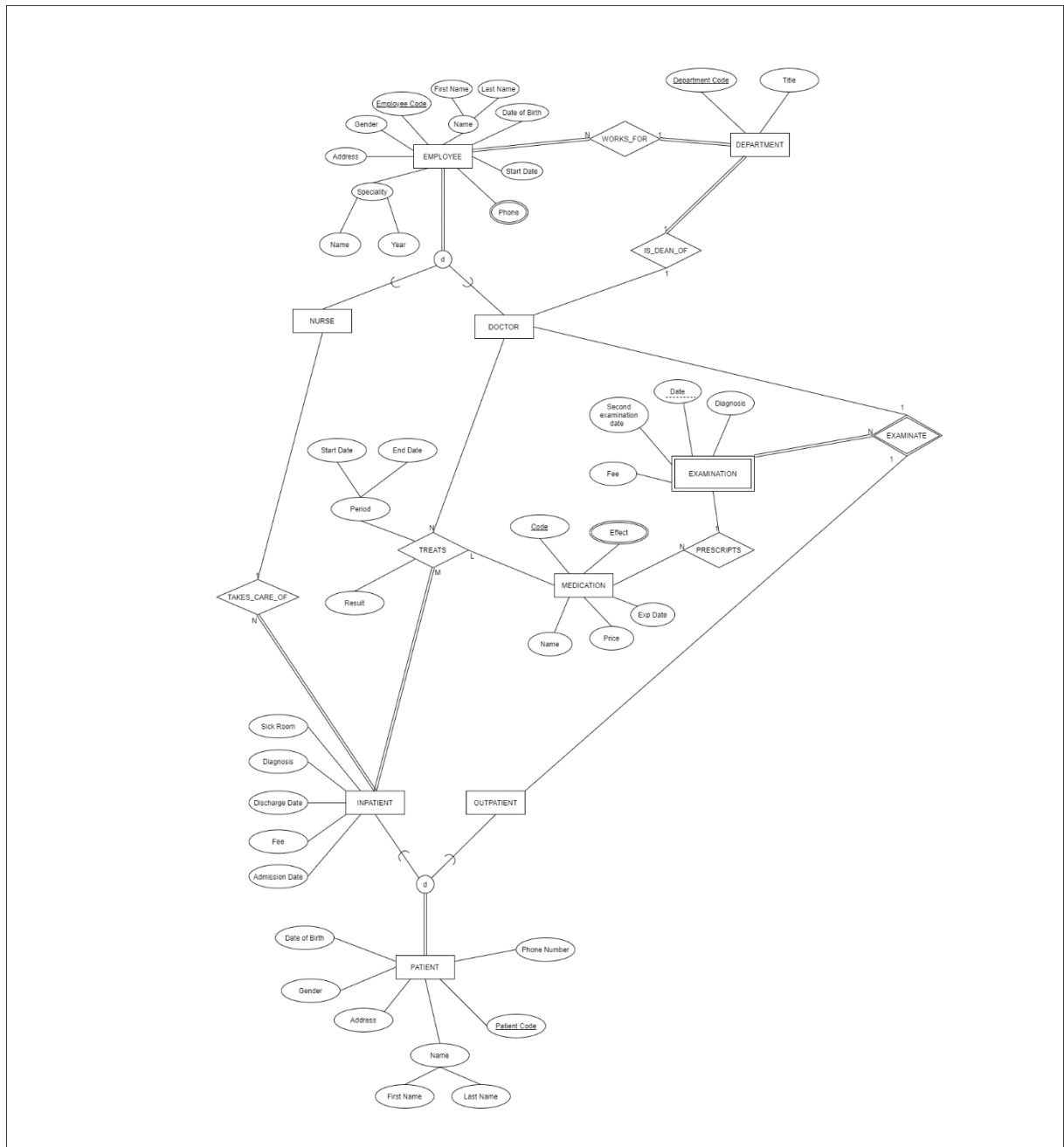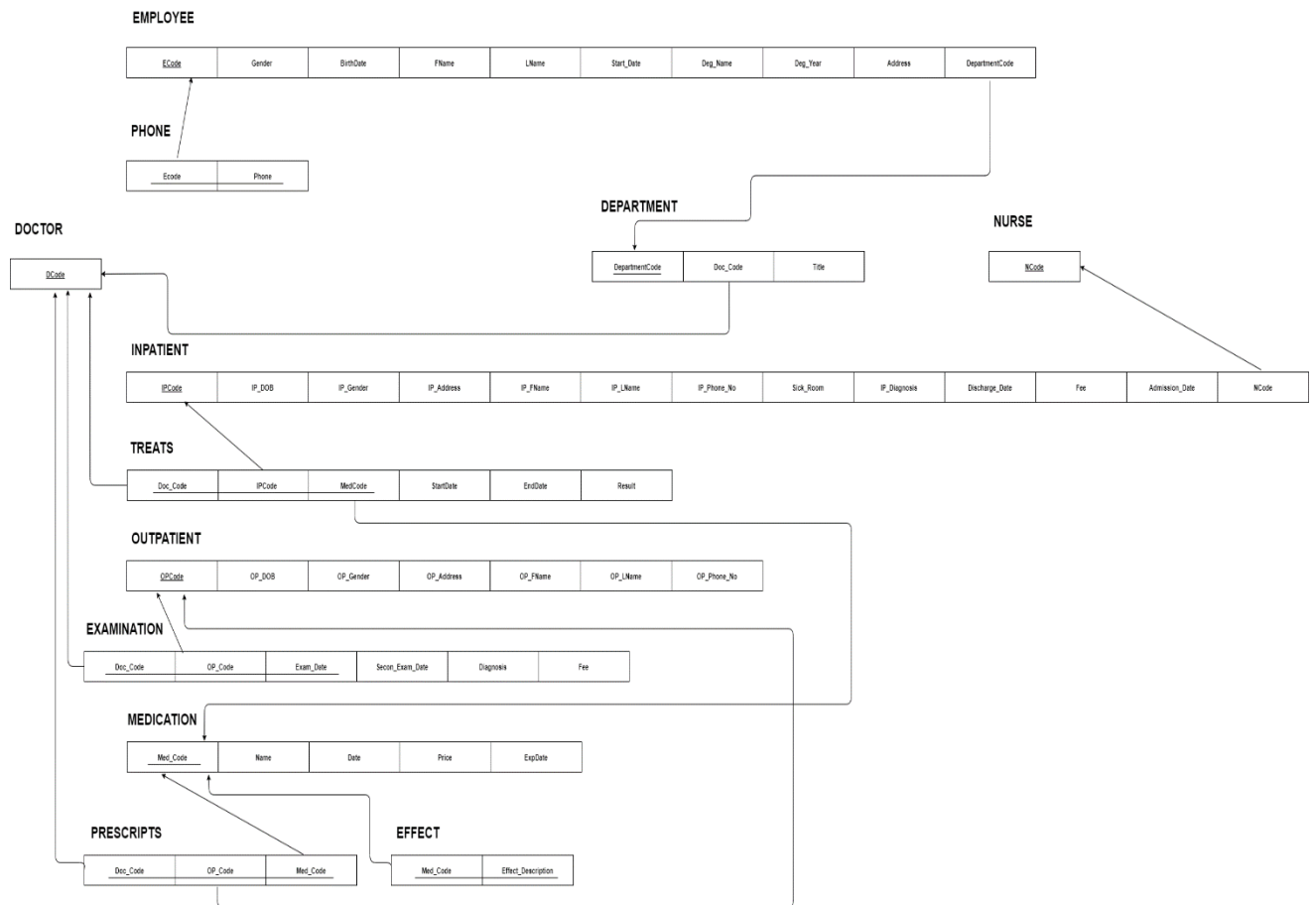

For a clearer view of the Diagram, please visit the following link:
https://drive.google.com/file/d/14uoA0LD274KM2Suovff65j6MFAGtJWGT/view?usp=sharing

2. Relational database schema:

From the above diagram, we mapped it to the following schema:

EMPLOYEE

ECode	Gender	BirthDate	FName	LName	Start_Date	Deg_Name	Deg_Year	Address	DepartmentCode

PHONE

Ecode	Phone

DOCTOR

DCode

DEPARTMENT

DepartmentCode	Doc_Code	Title

NURSE

NCode

INPATIENT

IPCode	IP_DOB	IP_Gender	IP_Address	IP_FName	IP_LName	IP_Phone_No	Sick_Room	IF_Diagnosis	Discharge_Date	Fee	Admission_Date	NCode

TREATS

Doc_Code	IPCode	MedCode	StartDate	EndDate	Result

OUTPATIENT

OPCode	OP_DOB	OP_Gender	OP_Address	OP_FName	OP_LName	OP_Phone_No

EXAMINATION

Doc_Code	OP_Code	Exam_Date	Secon_Exam_Date	Diagnosis	Fee

MEDICATION

Med_Code	Name	Date	Price	ExpDate

PRESCRIPTS

Doc_Code	OP_Code	Med_Code

EFFECT

Med_Code	Effect_Description

For clearer image, you can revisit the link (the schema is below the EERD):
https://drive.google.com/file/d/14uoA0LD274KM2Suovff65j6MFAGtJWGT/view?usp=sharing

3. Constraints not shown in the EERD:

All constraints not shown in the EERD Diagram:

- The experience of the Dean of a department must be greater than 5 years in their speciality (year(TODAY) - year(degree) > 5)
- The "Year" field value in each Employee speciality must be smaller than the current year (2020).
- The first two char in the patient code must be either "OP" for outpatients and "IP" for inpatients followed by 5 digits. The code for each patient must be unique. Since there are only 5 digits, The number of total patient for each type should not exceed 100.000 (Note that this is only true for this specific assignment since we cannot reuse assigned the code for new patients)
- The value of "Date of Birth" field for each entity must not be greater than today.
- All numerical values (such as fee, price,...) must not be negative
- The "Start Date" field must have value smaller than the "End Date" field's value in each "Treat" relationship instance's period.
- All name, title fields must not contain any digits
- All phone numbers and Date fields must not contain characters
- "Discharge Date" field's value of each patient must be greater or equal to their "Admission Date" field's value
- "2nd Examination Date" field's value must be greater than the corresponding "Date" field's value of for each examination
- The "Expiration Date" value for each "Medication" must be smaller than today's date.
- The EXAMINATION[Date] must also specify the exact time in the day (including hour,minute,second)
  Example: 20/12/2020 15:20:39