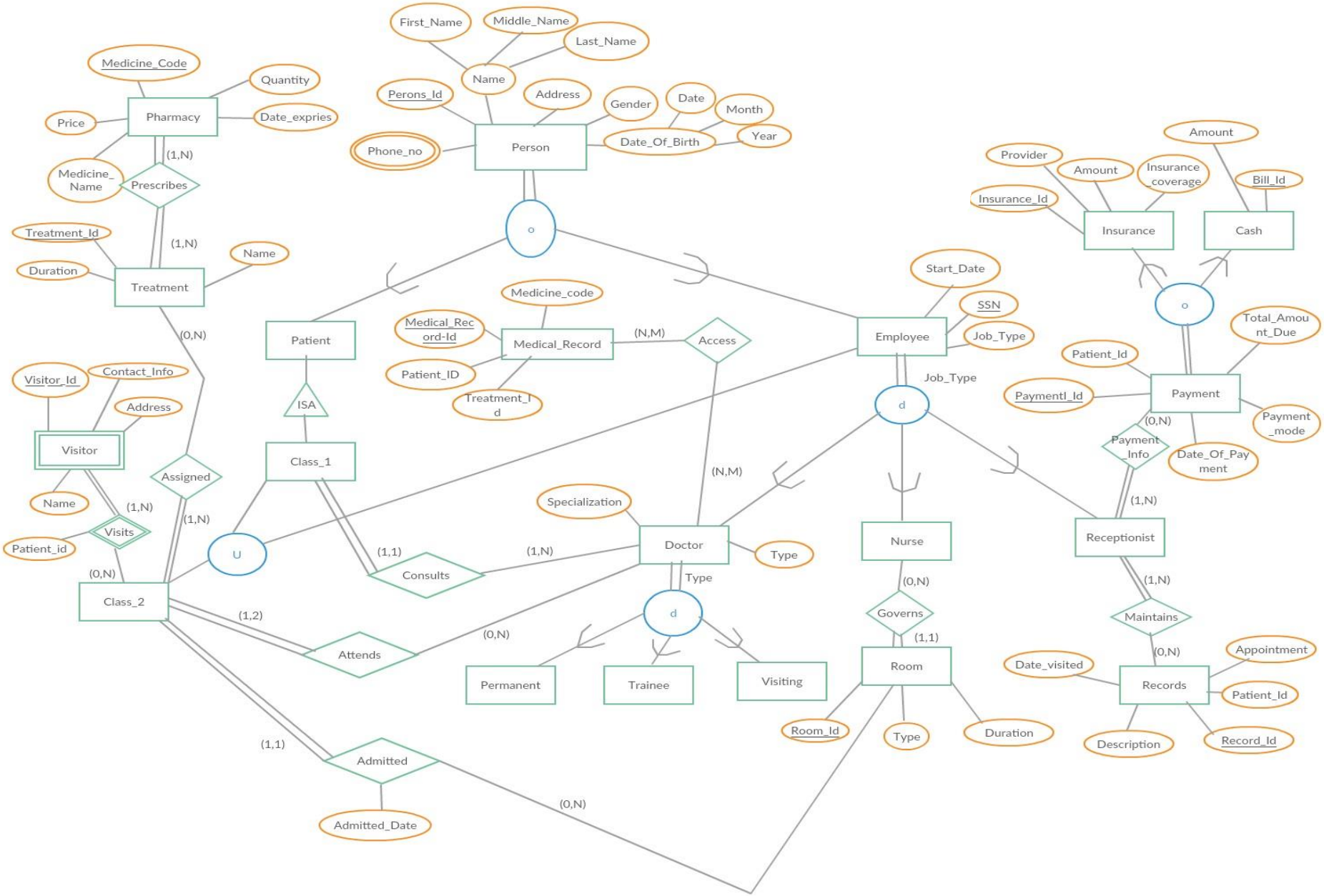
First_Name
Middle_Name
Last_Name
Name
Perons_Id
Address
Gender
Date
Month
Year
Date_Of_Birth
Phone_no
Person
Medicine_Code
Quantity
Pharmacy
Price
Date_expries
Medicine_ Name
Prescribes
(1,N)
(1,N)
Treatment_Id
Duration
Treatment
Name
(0,N)
o
Patient
Medicine_code
Medical_Rec ord-Id
Medical_Record
(N,M)
Access
Patient_ID
Treatment_I d
ISA
Class_1
Visitor_Id
Contact_Info
Address
Visitor
Name
Visits
(1,N)
Patient_id
(0,N)
Assigned
(1,N)
Class_2
U
(1,1)
Consults
(1,N)
Specialization
Doctor
Type
(N,M)
Type
d
(1,2)
Attends
(0,N)
Permanent
Trainee
Visiting
(1,1)
Admitted
Admitted_Date
(0,N)
Start_Date
SSN
Job_Type
Employee
Job_Type
d
Nurse
(0,N)
Governs
(1,1)
Room
Room_Id
Type
Duration
Provider
Amount
Insurance _coverage
Insurance_Id
Insurance
Amount
Bill_Id
Cash
o
Total_Amou nt_Due
Patient_Id
PaymentI_Id
Payment
Payment _mode
(0,N)
Payment Info
Date_Of_Pay ment
(1,N)
Receptionist
(1,N)
Maintains
(0,N)
Date_visited
Records
Appointment
Patient_Id
Description
Record_Id

CONSIDERATIONS

Serial No.	Super Class	Sub Class	Specialization Constraint
1.	Person	• Patient • Employee	Overlapping
2.	Employee	• Doctor • Nurse • Receptionist	Disjoint
3.	Doctor	• Permanent • Trainee • Visiting	Disjoint
4.	Payment	• Insurance • Cash	Overlapping
5.	• Employee • Class_1 (Patient)	Class_2 (Patient)	Union

Assumptions

Entities & Attributes:

1. The entity **Persons** will be of two types **Patient** and **Employee** where an Employee also can be a Patient and a Patient can be an Employee.
2. Every **Person** has a UNIQUE Person_id (Format: PXXX where 100<= XXX <= 999), Name with (First_Name, Middle_Name, Last_Name) sub-attributes, Address, Gender, Date_Of_Birth with (Date, Month, Year) sub-attributes and an OPTIONAL Phone_no.
3. Every **Patient** IS-A **Class_1** patient who can be a **Class_2** patient who is admitted or who is an **Employee**.
4. Every **Employee** has the attributes Start_Date, a unique SSN and a Job_Type.
5. Based on the Job_Type, every Employee is further categorized as a **Doctor**, a **Nurse** and a **Receptionist**.
6. Every **Doctor** has a Specialization, Type as his/her attributes.
7. Based on the Doctor Type, he/she is classified among a **Permanent** or a **Trainee** or a **Visiting** Doctor.

8. A **Medical_Record** has a unique Medical_Record_Id, a Medical_Code, Patient_Id, Treatment_Id.
9. Every **Class_2** patient can have **Visitor**s.
10. Every **Visitor** has a Visitor_Id (partial key), Name, Contact_Info, Address as attributes.
11. Every **Class_2** patient undergoes **Treatment**.
12. Every **Treatment** has a unique Treatment_Id, Name, Duration as attributes.
13. Every **Treatment** may or may not be assigned with a **Pharmacy**.
14. For a **Pharmacy**, it has medicines with a Medicine_Name, Price, a unique Medicine_Code, Quantity and Date_expires as attributes.
15. Every **Class_2** patient is also admitted to a **Room.**
16. Every **Room** has a Room_Id, Type, Duration as its attributes.
17. There are **Records** with a unique Record_Id, Patient_Id, Description, Appointment, Date_Visited attributes.
18. A **Payment** has a unique Payment_Id, Patient_Id, Date_Of_Payment, Payment_Mode, Total_Amount_Due as its attributes.
19. A **Payment** can be through **Insurance** or **Cash** or by both.
20. An **Insurance** have a unique Insurance_Id, its Provider, Amount, Insurance_Coverage as its attributes.
21. A payment made in **Cash** has a Bill_Id and Amount as its attributes.

Relationships among the Entities:

1. A Person can be a Patient or an Employee in the hospital.
2. Every Class_1 Patient Consults at most a Doctor and a Doctor can be consulted by more than one Class_1 patient.
3. A Doctor can Attend multiple Class_2 patients but a Class_2 patient is attended by either one or at most two Doctors.
4. A Doctor has the Access to the Medical_Record.
5. A Visitor can visit at least one Class_2 patient and a Class_2 patient is visited by any number of Visitors.
6. Every Class_2 patient is Assigned with a Treatment or multiple Treatments and every Treatment may or may not have a Class_2 patient.
7. A Treatment Prescribes a minimum of one medicine from the Pharmacy and a medicine can be prescribed to different treatments.
8. Every Class_2 patient is Admitted to only one Room and the Rooms can admit any number of Class_2 patients.
9. A Nurse Governs none or multiple Rooms but a Room is governed by only one Nurse.
10. A Receptionist Maintains a single or multiple Records but a Record is maintained by at most one Receptionist.
11. A Receptionist also updates Payment_Info into the Payment entity.