Table details:

Table Name	Primary key (s)	Foreign key (s)	Table count
Appointment	appointmentID	ext_cause_code, icd_10, patientId, proc_code	3472
beds	bed_detail_id	facility_id	24
departments	dept_id		6
diagnosis_code	icd_10_code		31379
doctors	doc_id	default_room, default_staff_assistant1, default_staff_assistant2, default_staff_assistant3, dept_id	10
external_code	ExtCauseCode		2742
Facilities	facility_id		23
fever_reported	fever_id	app_id, pid	9
patients	pid		2424
procedure_code	proc_code		4414
rooms	Room_id		8
staff	staff_id		9
symptoms_reported	symptom_id	patient_id, appt_id	191

Create Queries:

```
CREATE TABLE `appointments` (
  `patientId` varchar(245) NOT NULL,
  `appointmentID` varchar(145) NOT NULL,
  `scheduled_day` varchar(145) DEFAULT NULL,
  `appointment_day` varchar(145) DEFAULT NULL,
  `Hipertension` int DEFAULT NULL,
  `Diabetes` int DEFAULT NULL,
  `Alcoholism` varchar(45) DEFAULT NULL,
  `Handcap` varchar(45) DEFAULT NULL,
  `SMS_received` varchar(45) DEFAULT NULL,
  `No-show` varchar(45) DEFAULT NULL,
  `proc_code` varchar(145) DEFAULT NULL,
  `ext_cause_code` varchar(45) DEFAULT NULL,
  `icd_10` varchar(45) DEFAULT NULL,
  PRIMARY KEY (`appointmentID`),
  KEY `patientid_idx` (`patientId`),
  KEY `proc_code_idx` (`proc_code`),
  KEY `icd_10_idx` (`icd_10`),
  KEY `ext_cause_code_idx` (`ext_cause_code`),
  CONSTRAINT `ext_cause_code` FOREIGN KEY (`ext_cause_code`) REFERENCES `external_code`
(`ExtCauseCode`),
  CONSTRAINT `icd_10` FOREIGN KEY (`icd_10`) REFERENCES `diagnosis_code` (`icd_10_code`),
  CONSTRAINT `patientid` FOREIGN KEY (`patientId`) REFERENCES `patients` (`pid`),
  CONSTRAINT `proc_code` FOREIGN KEY (`proc_code`) REFERENCES `procedure_code` (`proc_code`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci;
```

```
CREATE TABLE `beds` (
  `bed_detail_id` int NOT NULL,
  `facility_id` varchar(100) DEFAULT NULL,
  `facility_name` varchar(105) DEFAULT NULL,
  `facility_type` varchar(45) DEFAULT NULL,
  `bed_capacity_type` varchar(45) DEFAULT NULL,
  `bed_capacity` int DEFAULT NULL,
  PRIMARY KEY (`bed_detail_id`),
  KEY `facility_id_idx` (`facility_id`),
  CONSTRAINT `facility_id` FOREIGN KEY (`facility_id`) REFERENCES `facilities` (`facility_id`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci;
```

```
CREATE TABLE `departments` (
  `dept_id` int NOT NULL,
  `dept_name` varchar(45) DEFAULT NULL,
  PRIMARY KEY (`dept_id`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci;



CREATE TABLE `diagnosis_code` (
  `icd_10_code` varchar(45) NOT NULL,
  `desc` varchar(245) DEFAULT NULL,
  ` total_diag` varchar(45) DEFAULT NULL,
  ` primary_diag_total` varchar(45) DEFAULT NULL,
  ` secondary_diag_total` varchar(45) DEFAULT NULL,
  PRIMARY KEY (`icd_10_code`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci;



CREATE TABLE `doctors` (
  `doc_id` int NOT NULL,
  `doc_fname` varchar(45) DEFAULT NULL,
  `doc_lname` varchar(45) DEFAULT NULL,
  `position` varchar(45) DEFAULT NULL,
  `ssn` int DEFAULT NULL,
  `npi` int DEFAULT NULL,
  `spi` blob,
  `dept_id` int DEFAULT NULL,
  `default_staff_assistant1` int DEFAULT NULL,
  `default_staff_assistant2` int DEFAULT NULL,
  `default_staff_assistant3` int DEFAULT NULL,
  `status` int DEFAULT NULL,
  `deleteflag` int DEFAULT NULL,
  `default_room` int DEFAULT NULL,
  PRIMARY KEY (`doc_id`),
  KEY `dept_id_idx` (`dept_id`),
  KEY `default_staff_assistant1_idx` (`default_staff_assistant1`),
  KEY `default_staff_assistant2_idx` (`default_staff_assistant2`),
  KEY `default_staff_assistant3_idx` (`default_staff_assistant3`),
  KEY `default_room_idx` (`default_room`),
  CONSTRAINT `default_room` FOREIGN KEY (`default_room`) REFERENCES `rooms` (`room_id`),
  CONSTRAINT `default_staff_assistant1` FOREIGN KEY (`default_staff_assistant1`) REFERENCES `staff`
(`staff_id`),
  CONSTRAINT `default_staff_assistant2` FOREIGN KEY (`default_staff_assistant2`) REFERENCES `staff`
(`staff_id`),
  CONSTRAINT `default_staff_assistant3` FOREIGN KEY (`default_staff_assistant3`) REFERENCES `staff`
(`staff_id`),
  CONSTRAINT `dept_id` FOREIGN KEY (`dept_id`) REFERENCES `departments` (`dept_id`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci;
```

```
CREATE TABLE `external_code` (
  `ExtCauseCode` varchar(45) NOT NULL,
  `ExtCauseDesc` varchar(145) DEFAULT NULL,
  `TotalExtCauseCodes` varchar(45) DEFAULT NULL,
  `PrimaryExtCauseCodes` varchar(45) DEFAULT NULL,
  `SecondExtCauseCodes` varchar(45) DEFAULT NULL,
  PRIMARY KEY (`ExtCauseCode`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci;



CREATE TABLE `facilities` (
  `facility_id` varchar(150) NOT NULL,
  `facility_name` varchar(145) DEFAULT NULL,
  `facility_type` varchar(145) DEFAULT NULL,
  `facility_code` varchar(45) DEFAULT NULL,
  `hours` varchar(145) DEFAULT NULL,
  `address` varchar(245) DEFAULT NULL,
  `city` varchar(45) DEFAULT NULL,
  `state` varchar(45) DEFAULT NULL,
  `zip` varchar(45) DEFAULT NULL,
  `Phone 1` varchar(45) DEFAULT NULL,
  `Phone 2` varchar(45) DEFAULT NULL,
  `Phone 3` varchar(45) DEFAULT NULL,
  `Phone 4` varchar(45) DEFAULT NULL,
  `Phone 5` varchar(45) DEFAULT NULL,
  `fax no` varchar(45) DEFAULT NULL,
  `Public Health Nursing` varchar(45) DEFAULT NULL,
  `Family Case Management` varchar(45) DEFAULT NULL,
  `Healthy Start Program` varchar(45) DEFAULT NULL,
  `Healthy Families Program` varchar(45) DEFAULT NULL,
  `Latitude` varchar(45) DEFAULT NULL,
  `Longitude` varchar(45) DEFAULT NULL,
  `Location` varchar(145) DEFAULT NULL,
  PRIMARY KEY (`facility_id`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci;



CREATE TABLE `fever_reported` (
  `app_id` varchar(45) NOT NULL,
  `pid` varchar(145) NOT NULL,
  `first_name` varchar(45) DEFAULT NULL,
  `last_name` varchar(45) DEFAULT NULL,
  `timstamp` varchar(45) DEFAULT NULL,
  `temperature` varchar(45) DEFAULT NULL,
  `fever_id` varchar(45) NOT NULL,
  PRIMARY KEY (`fever_id`),
```

```
  KEY `app_id_idx` (`app_id`),
  KEY `pid_idx` (`pid`),
  CONSTRAINT `app_id` FOREIGN KEY (`app_id`) REFERENCES `appointments` (`appointmentID`),
  CONSTRAINT `pid` FOREIGN KEY (`pid`) REFERENCES `patients` (`pid`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci;



CREATE TABLE `patients` (
  `pid` varchar(245) NOT NULL,
  `fname` varchar(45) DEFAULT NULL,
  `lname` varchar(45) DEFAULT NULL,
  `gender` varchar(45) DEFAULT NULL,
  `add_line_1` varchar(245) DEFAULT NULL,
  `zipcode` varchar(45) DEFAULT NULL,
  `state` varchar(45) DEFAULT NULL,
  `country` varchar(45) DEFAULT NULL,
  `email_id` varchar(245) DEFAULT NULL,
  `dob` varchar(45) DEFAULT NULL,
  `primaryphone` varchar(45) DEFAULT NULL,
  `bloodtype` varchar(45) DEFAULT NULL,
  `weight` varchar(45) DEFAULT NULL,
  PRIMARY KEY (`pid`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci;



CREATE TABLE `procedure_code` (
  `proc_code` varchar(145) NOT NULL,
  `total_proc` varchar(45) DEFAULT NULL,
  `primary_proc` varchar(45) DEFAULT NULL,
  `secondary_proc` varchar(45) DEFAULT NULL,
  PRIMARY KEY (`proc_code`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci;



CREATE TABLE `rooms` (
  `room_id` int NOT NULL,
  `room_type` varchar(45) DEFAULT NULL,
  `desc` varchar(245) DEFAULT NULL,
  `level` varchar(45) DEFAULT NULL,
  PRIMARY KEY (`room_id`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci;
```

```
CREATE TABLE `staff` (
  `staff_id` int NOT NULL,
  `staff_fname` varchar(45) DEFAULT NULL,
  `staff_lname` varchar(45) DEFAULT NULL,
  `staff_type` varchar(45) DEFAULT NULL,
  `is_resource` int DEFAULT NULL,
  `status` int DEFAULT NULL,
  `delflag` int DEFAULT NULL,
  PRIMARY KEY (`staff_id`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci;



CREATE TABLE `symptoms_reported` (
  `symptom_id` int NOT NULL,
  `patient_id` varchar(145) DEFAULT NULL,
  `appt_id` varchar(45) DEFAULT NULL,
  `first_name` varchar(45) DEFAULT NULL,
  `last_name` varchar(45) DEFAULT NULL,
  `symptoms` varchar(45) DEFAULT NULL,
  `contact` varchar(45) DEFAULT NULL,
  `tested` varchar(45) DEFAULT NULL,
  `travel` varchar(45) DEFAULT NULL,
  `timestamp` varchar(145) DEFAULT NULL,
  PRIMARY KEY (`symptom_id`),
  KEY `pid_idx` (`patient_id`),
  KEY `appt_id_idx` (`appt_id`),
  CONSTRAINT `appt_id` FOREIGN KEY (`appt_id`) REFERENCES `appointments` (`appointmentID`),
  CONSTRAINT `patient_id` FOREIGN KEY (`patient_id`) REFERENCES `patients` (`pid`)
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4 COLLATE=utf8mb4_0900_ai_ci;
```

Test Case Queries:

1. **Display the active providers(doctors) in the application:**
   Query:
   select * from doctors where status=0;

2. **Display the providers(doctors) and staffs details who are set as default assistant 1 for the provider, ordering by staff id in descending:**
   Query:
   select d.doc_fname, d.doc_lname, d.position, d.dept_id, s.staff_fname, s.staff_lname, s.staff_type from doctors d inner join staff s on d.default_staff_assistant1 = s.staff_id order by s.staff_id desc ;

3. **Display the patients with specific bloodtype and weight greater than 195 , ordering by patient id in descending order:**
   Query:
   select * from patients where bloodtype='B+' and weight>195 order by pid desc;

4. **Display the appointment and patient details with any type of "fall" included in the external cause of injury in order of the cause description:**
   Query:
   select p.fname, p.lname, p.primaryphone, a.appointmentid, a.appointment_day, a.ext_cause_code, e.extcausedesc
   from patients p inner join appointments a on p.pid = a.patientId
   inner join external_code e on a.ext_cause_code = e.ExtCauseCode
   order by p.fname, p.lname desc;

5. **Display the count per patients appointment with more than 1 appointment:**
   Query:
   select count(*),patientId from appointments
   group by patientId
   having count(*) > 1;

6. **Display the contact details (primary phone numbers), excluding the blank details if any, and hours for the facility which has bed capacity more than 100 :**
   Query:
   ```
   select f.facility_id, f.facility_name, f.phone1, f.hours, b.bed_detail_id,
   b.bed_capacity_type, b.bed_capacity
   from facilities f join beds b on f.facility_id = b.facility_id
   where  b.bed_capacity >100 and f.phone1!="  order by f.facility_id;
   ```

7. **Display the department details of the providers who have their default appointment booking in rooms of P1 level, for the departments to be contacted to book the next month's schedule for room allocation:**
   Query:
   ```
   select d.dept_id, d.dept_name, doc.doc_fname, doc.doc_lname, r.room_type, r.level
   from departments d join doctors doc on d.dept_id = doc.dept_id
    join rooms r on doc.default_room = r.room_id
    where r.level='p1';
   ```

8. **Display the female patient's details and appointment date for reporting a fever and being diagnosed with any kind of infection:**
   Query:
   ```
   select p.pid, p.fname, p.lname, p.gender, a.appointment_day, f.temperature
   from patients p join appointments a on p.pid = a.patientId
   inner join fever_reported f on p.pid = f.pid
   where p.gender='female';
   ```