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 Professor Thompson - CS355
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Hospital API

The purpose of this API is to provide hospital staff rapid access to information and equipment. This Api will allow Doctors to be assigned to patients and search up their current medical chart. The hospital will have a better method of knowing the overall symptoms present at their location. As well being able to control the capacity of patients that are being admitted to the hospital. Nurses, as a result of this api, will have a better method of checking out equipment and seeing the current availability of all equipment listed. Returning such equipment will be just as easy.

Some important business logic that is respected in this database is the max capacity of 1000 patients. If the database reaches that capacity, the database will prevent further inserts and error a message stating that the hospital is overrun. There is also a max capacity for the amount of patients that a doctor can be assigned too. Lastly, only the nurse that made the original check out of an equipment can return that exact equipment.

Patient

Path Name: overview

Path: <http://localhost:8209/api/v1/patient/overview>

Description:

will give a summary of all patients that are in hospital, the summary contains the patients' ID, first name, symptoms, diagnosis, and treatment.

Example Call: `curl -X GET http://localhost:8209/api/v1/patient/overview`

Proof of Call:

```
[jchavez@blue ~]$ curl -X GET http://localhost:8209/api/v1/patient/overview
[
  {
    "patient_id": "P61007",
    "firstName": "Mireia",
    "diagnosis": "Urinary tract infection",
    "treatment": "Amoxicillin"
  },
  {
    "patient_id": "P50700",
    "firstName": "Millie",
    "diagnosis": "Diabetes",
    "treatment": "Insulin"
  },
]
```

Rest of the Output:

```
{
  "patient_id": "P17395",
  "firstName": "Jasmine",
  "diagnosis": "Hyperlipidemia",
  "treatment": "steroid therapy"
},
{
  "patient_id": "P67649",
  "firstName": "Oliver",
  "diagnosis": "Asthma",
  "treatment": "Bronchodilator"
},
{
  "patient_id": "P18228",
  "firstName": "Aaron",
  "diagnosis": "Acute bronchitis",
  "treatment": "Analgesic"
},
]
```

```
{
  "patient_id": "P18228",
  "firstName": "Aaron",
  "diagnosis": "Acute bronchitis",
  "treatment": "Analgesic"
},
{
  "patient_id": "P39242",
  "firstName": "Nicole",
  "diagnosis": "Hypertension",
  "treatment": "ACE inhibitor"
},
{
  "patient_id": "P34139",
  "firstName": "Walter",
  "diagnosis": "Lung Cancer",
  "treatment": "Chemotherapy"
},
{
  "patient_id": "P48072",
  "firstName": "Harry",
  "diagnosis": "Coronary atherosclerosis",
  "treatment": "Angioplasty"
},
{
  "patient_id": "P94612",
  "firstName": "Thomas",
  "diagnosis": "COVID19",
  "treatment": "Bronchodilator"
},
]
```

Path Name: hospitalDischarge/:id

Parameters: id - a valid patient id

Path: http://localhost:8209/api/v1/patient/hospitalDischarge/:id

Description:

After a patient has been officially discharged by a doctor, this method will remove that patient from the database. Removing a patient, will also remove their medical charts.

Example Call: curl -X DELETE http://localhost:8209/api/v1/patient/hospitalDischarge/P41862

Proof of Call and Output:

```
[jchavez@blue ~]$ curl -X DELETE http://localhost:8209/api/v1/patient/hospitalDischarge/P41862
Patient P41862 has been deleted.
[jchavez@blue ~]$
```

Result on database: patient with ID: P41862 is removed

```
[MariaDB [calderon_cs355fl20]> select patient_id from hospital_patients;
+-----+
| patient_id |
+-----+
| P48072     |
| P94612     |
| P17742     |
| P61007     |
| P82089     |
| P18228     |
| P34139     |
| P25017     |
| P39242     |
| P67649     |
| P17395     |
| P54500     |
| P49711     |
| P50700     |
+-----+
14 rows in set (0.001 sec)
```

Path Name: admitPatient

Path: <http://localhost:8209/api/v1/patient/admitPatient>

Description:

If the current number of patients at the hospital has not reached max capacity, then the patient will be admitted to the hospital and added to the database.

Example Call:

```
curl -X POST -H 'Content-type: application/json' -d '{"ID": "P10101", "first_name": "Jonathan",
"last_name": "Calderon", "Date" : "2020-12-7"}'
http://localhost:8209/api/v1/patient/admitPatient
```

Call and Output:

```
[jchavez@blue ~]$ curl -X POST -H 'Content-type: application/json' -d '{"ID": "P10101", "first_name": "Jonathan",
"last_name": "Calderon", "Date" : "2020-12-7"}' http://localhost:8209/api/v1/patient/admitPatient
{
  "patientID": "P10101",
  "firstName": "Jonathan",
  "last_name": "Calderon",
  "admissionDate": "2020-12-7"
}
[jchavez@blue ~]$
```

Result on the Database:

```
[jchavez@blue ~]$ mysql -u calderon_cs355fl20 -p
MariaDB [calderon_cs355fl20]> select * from hospital_patients where patient_id = 'P10101';
+-----+-----+-----+-----+-----+
| patient_id | fName  | lName  | admission_date | doctor |
+-----+-----+-----+-----+-----+
| P10101     | Jonathan | Calderon | 2020-12-07     | NULL   |
+-----+-----+-----+-----+-----+
1 row in set (0.000 sec)

MariaDB [calderon_cs355fl20]>
```

Doctor

Path Name: patient

Path: <http://localhost:8209/api/v1/doctor/patient>

Description:

This will list all patients that have been assigned doctors. This list will contain the Doctor's last name and id, as well as the patient's first name and id.

Example Call: curl -X GET <http://localhost:8209/api/v1/doctor/patient/>

Call being performed and output:

```
[jchavez@blue ~]$ curl -X GET http://localhost:8209/api/v1/doctor/patient/
[
  {
    "Doctor": "Bridges",
    "doctor_id": "D49600",
    "Patient_name": "Jasmine",
    "patient_id": "P17395"
  },
  {
    "Doctor": "Tucker",
    "doctor_id": "D37513",
    "Patient_name": "Tasia",
    "patient_id": "P17742"
  },
  {
    "Doctor": "Pollard",
    "doctor_id": "D38356",
    "Patient_name": "Aaron",
    "patient_id": "P18228"
  },
  {
    "Doctor": "Finley",
    "doctor_id": "D47483",
    "Patient_name": "Queta",
    "patient_id": "P25017"
  },
  {
    "Doctor": "Pollard",
    "doctor_id": "D38356",
    "Patient_name": "Walter",
    "patient_id": "P34139"
  },
  {
    "Doctor": "Finley",
    "doctor_id": "D47483",
    "Patient_name": "Nicole",
    "patient_id": "P39242"
  },
  {
    "Doctor": "Fowler",
    "doctor_id": "D20724",
    "Patient_name": "Harry",
    "patient_id": "P48072"
  },
  {
    "Doctor": "Knox",
    "doctor_id": "D99008",
    "Patient_name": "Molly",
    "patient_id": "P49711"
  },
  {
    "Doctor": "Knox",
    "doctor_id": "D99008",
    "Patient_name": "Millie",
    "patient_id": "P50700"
  },
  {
    "Doctor": "Vaughn",
    "doctor_id": "D89187",
    "Patient_name": "Anna",
    "patient_id": "P54500"
  },
  {
    "Doctor": "Tucker",
    "doctor_id": "D37513",
    "Patient_name": "Mireia",
    "patient_id": "P61007"
  },
  {
    "Doctor": "Finley",
    "doctor_id": "D47483",
    "Patient_name": "Oliver",
    "patient_id": "P67649"
  },
  {
    "Doctor": "Tucker",
    "doctor_id": "D37513",
    "Patient_name": "Rebecca",
    "patient_id": "P82089"
  },
  {
    "Doctor": "Chaney",
    "doctor_id": "D34972",
    "Patient_name": "Thomas",
    "patient_id": "P94612"
  }
]
```

Rest of output:

```
{
  "Doctor": "Finley",
  "doctor_id": "D47483",
  "Patient_name": "Queta",
  "patient_id": "P25017"
},
{
  "Doctor": "Pollard",
  "doctor_id": "D38356",
  "Patient_name": "Walter",
  "patient_id": "P34139"
},
{
  "Doctor": "Finley",
  "doctor_id": "D47483",
  "Patient_name": "Nicole",
  "patient_id": "P39242"
},
{
  "Doctor": "Fowler",
  "doctor_id": "D20724",
  "Patient_name": "Harry",
  "patient_id": "P48072"
},
{
  "Doctor": "Knox",
  "doctor_id": "D99008",
  "Patient_name": "Molly",
  "patient_id": "P49711"
},
{
  "Doctor": "Knox",
  "doctor_id": "D99008",
  "Patient_name": "Millie",
  "patient_id": "P50700"
},
{
  "Doctor": "Vaughn",
  "doctor_id": "D89187",
  "Patient_name": "Anna",
  "patient_id": "P54500"
},
{
  "Doctor": "Tucker",
  "doctor_id": "D37513",
  "Patient_name": "Mireia",
  "patient_id": "P61007"
},
{
  "Doctor": "Finley",
  "doctor_id": "D47483",
  "Patient_name": "Oliver",
  "patient_id": "P67649"
},
{
  "Doctor": "Tucker",
  "doctor_id": "D37513",
  "Patient_name": "Rebecca",
  "patient_id": "P82089"
},
{
  "Doctor": "Chaney",
  "doctor_id": "D34972",
  "Patient_name": "Thomas",
  "patient_id": "P94612"
}
```

```
{
  "Doctor": "Finley",
  "doctor_id": "D47483",
  "Patient_name": "Queta",
  "patient_id": "P25017"
},
{
  "Doctor": "Pollard",
  "doctor_id": "D38356",
  "Patient_name": "Walter",
  "patient_id": "P34139"
},
{
  "Doctor": "Finley",
  "doctor_id": "D47483",
  "Patient_name": "Nicole",
  "patient_id": "P39242"
},
{
  "Doctor": "Fowler",
  "doctor_id": "D20724",
  "Patient_name": "Harry",
  "patient_id": "P48072"
},
{
  "Doctor": "Knox",
  "doctor_id": "D99008",
  "Patient_name": "Molly",
  "patient_id": "P49711"
},
{
  "Doctor": "Knox",
  "doctor_id": "D99008",
  "Patient_name": "Millie",
  "patient_id": "P50700"
},
{
  "Doctor": "Vaughn",
  "doctor_id": "D89187",
  "Patient_name": "Anna",
  "patient_id": "P54500"
},
{
  "Doctor": "Tucker",
  "doctor_id": "D37513",
  "Patient_name": "Mireia",
  "patient_id": "P61007"
},
{
  "Doctor": "Finley",
  "doctor_id": "D47483",
  "Patient_name": "Oliver",
  "patient_id": "P67649"
},
{
  "Doctor": "Tucker",
  "doctor_id": "D37513",
  "Patient_name": "Rebecca",
  "patient_id": "P82089"
},
{
  "Doctor": "Chaney",
  "doctor_id": "D34972",
  "Patient_name": "Thomas",
  "patient_id": "P94612"
}
```

```
{
  "Doctor": "Chaney",
  "doctor_id": "D34972",
  "Patient_name": "Thomas",
  "patient_id": "P94612"
}
[jchavez@blue ~]$
```

Path Name: assignNewPatient

Path: curl -X -<http://localhost:8209/api/v1/doctor/assignNewPatient>

Description:

Takes a patient's ID and Doctor's ID. Assigns a doctor with ID "x" to the patient with ID "x", if the doctor has not reached the max limit for the number of patients per doctor .

Example Call:

curl -X PUT -H 'Content-type: application/json' -d '{ "doctor_id": "D47483", "patient_id" : "P10101"}' http://localhost:8209/api/v1/doctor/assignNewPatient

```
[jchavez@blue project2]$ curl -X PUT -H 'Content-type: application/json' -d '{ "doctor_id": "D47483", "patient_id" : "P10101"}' http://localhost:8209/api/v1/doctor/assignNewPatient
{
  "doctor": "D47483",
  "patient": "P10101"
}
[jchavez@blue project2]$
```

Result on Database:

```
MariaDB [calderon_cs355fl20]> select * from hospital_patients where patient_id = "P10101";
+-----+-----+-----+-----+-----+
| patient_id | fName   | lName   | admission_date | doctor |
+-----+-----+-----+-----+-----+
| P10101     | Jonathan | Calderon | 2020-12-07     | D47483 |
+-----+-----+-----+-----+-----+
1 row in set (0.000 sec)
```

Path Name: medicalChart/:patient_id

Path: http://localhost:8209/api/v1/doctor/medicalChart/:patient_id

Description:

This method will return the patient's with id = patient_id medical chart.

Example Call:

curl http://localhost:8209/api/v1/doctor/medicalChart/P61007

```
[[jchavez@blue ~]$ curl http://localhost:8209/api/v1/doctor/medicalChart/P61007
[
  {
    "chart_id": "138167",
    "patient": "P61007",
    "doctor": "D37513",
    "diagnosis": "Urinary tract infection",
    "treatment": "Amoxicillin"
  }
]
[[jchavez@blue ~]$
```

Equipment

Path Name: available

Path: http://localhost:8209/api/v1/equipment/available

Description: This method will show nurses all of the available equipment that can be checked out.

Example Call: curl http://localhost:8209/api/v1/doctor/medicalChart/P61007

```
[jchavez@blue ~]$ curl http://localhost:8209/api/v1/equipment/available
[
  {
    "equipment_name": "X-ray",
    "equipment_number": "1"
  },
  {
    "equipment_name": "Heart-lung Machine",
    "equipment_number": "2"
  },
  {
    "equipment_name": "Incubator",
    "equipment_number": "2"
  },
  {
    "equipment_name": "Insulin pump",
    "equipment_number": "2"
  },
  {
    "equipment_name": "Medical Ventilator",
    "equipment_number": "2"
  },
  {
    "equipment_name": "Incubator",
    "equipment_number": "3"
  },
  {
    "equipment_name": "Insulin pump",
    "equipment_number": "3"
  },
  {
    "equipment_name": "Medical Ventilator",
    "equipment_number": "3"
  },
  {
    "equipment_name": "Incubator",
    "equipment_number": "4"
  },
  {
    "equipment_name": "Insulin pump",
    "equipment_number": "4"
  },
  {
    "equipment_name": "Incubator",
    "equipment_number": "5"
  },
  {
    "equipment_name": "Insulin pump",
    "equipment_number": "5"
  },
  {
    "equipment_name": "Incubator",
    "equipment_number": "6"
  }
]
```

Path Name: checkout_equipment

Path: http://localhost:8209/api/v1/equipment/checkout_equipment

Description: Will allow a nurse to check a medical equipment for a patient, as long as the equipment is currently listed as available.

Example Call:

```
curl -X PUT -H 'Content-type: application/json' -d '{"nurse_id":"N17737",  
"patient_id":"P61007", "equipment_name":"Incubator", "equipment_number":"4"}'  
http://localhost:8209/api/v1/equipment/checkout_equipment
```

```
enter password.  
[jchavez@blue ~]$ curl -X PUT -H 'Content-type: application/json' -d '{"nurse_id":"N17737", "patient_id":"P61007", "equipment_name":"Incubator", "equipment_number":"4"}' http://localhost:8209/api/v1/equipment/checkout_equipment  
{  
  "nurse": "N17737",  
  "patient": "P61007",  
  "equipment_name": "Incubator",  
  "equipment_number": "4"  
}  
[jchavez@blue ~]$
```


Path: Return

Path name: <http://localhost:8209/api/v1/equipment/return>

Description: A nurse can return any medical equipment that is listed under thier nurse ID

Example Call: curl -X PUT -H 'Content-type: application/json' -d '{"nurse":"N17737",
"equipmentName":"Incubator", "equipmentNumber":"4"}'

http://localhost:8209/api/v1/equipment/return

```
[jchavez@blue ~]$ curl -X PUT -H 'Content-type: application/json' -d '{"nurse":"N17737", "equipmentName":"Incubator", "equipmentNumber":"4"}' http://localhost:8209/api/v1/equipment/return
The Incubator has been returned, Thank you!
[jchavez@blue ~]$
```