Team Project
KOR – COVID19 Database

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Scoring metric

- Total 100 point
  1. 15 point – ER model 완료!
  2. 15 point – Relational model 완료!
  3. 15 point – DB 구축(MySQL, Python) 완료!
  4. 15 point – APACHE/PHP연동 완료!
  5. 15 point – Search function (필수 기능 2개) 완료!
  6. 15 point – SQL tasks
  7. 10 point – Map visualization

Hospital table

Hospital.csv

Hospital

Hospital_id	Hospital name	Hospital_province	Hospital_city	Hospital_latitude	Hospital_longitude	capacity	now
1	Fatima	Daegu	Buk-gu	35.883831	128.6215982	121	0
2	MS Reconstruction Hospital	Daegu	jung-gu	35.871853	128.604853	122	0
3	Maya Hospital	Gyeongsangbuk-do	Yeongcheon	35.910928	129.015047	123	0
4	Semyung Christian Hospital	Pohang	Nam-gu	36.01803	129.362091	124	0
5	Andong Sungso Hospital	Gyeongsangbuk-do	Andong	36.567134	128.722865	125	0
6	Suseong Metro Hospital	Daegu	Suseong-gu	35.8916062	128.65063	126	0
7	Uijeongbu St.Mary's Hospital	Gyeongki-do	Uijeongbu	37.758616	127.077718	127	0
8	Gyeongsan Central Hospital	Gyeongsan	Baekcheon-dong	35.809188	128.44246	128	0
9	Ajou University Hospital	Suwon	Yeongtong-gu	37.2795318	127.0477406	129	0
10	Busan ST. MARY'S Hospital	Busan	Nam-gu	35.06387	129.06346	130	0
11	Asan Medical Center	Seoul	Songpa-gu	37.527998	127.108145	131	0
12	Soonchunhyang University Hospital	Gyeongsangbuk-do	Gumi	36.103011	128.382772	132	0
13	Donguk University Hosptal	Gyeongsangbuk-do	Gyeong-ju	35.858432	129.196402	133	0
14	Gangneung Asan Hospital	Gangwon-do	Gangneung	37.818738	128.857798	134	0
15	The Catholic Univ. Of Korea Seoul St.Mary's Hospital	Seoul	Seocho-gu	37.501713	127.004743	135	0
16	Chonnam National University Hospital	Gwangju	Dong-gu	35.141989	126.922021	100	0
17	Inje University Ilsan Paik Hospital	Gyengki-do	Goyang	37.674334	126.750406	139	0
18	Jeonbuk National University Hospital	Jeollabuk-do	Jeonju	35.8471872	127.1405894	100	0
19	Gyeongsang National University Hospital	Gyeongsangnam-do	Jinju	35.1764353	128.0956934	136	0
20	Ulsan University	Ulsan	Dong-gu	35.5201066	129.4278604	136	0
21	Ungsang Jungang Hospital	Yangsan	Myeong-dong	35.406427	129.164537	137	0
22	Busan Paik Hospital	Busan	Jin-gu	35.145986	129.020887	120	0
23	Daejeon Eulji Medical Center	Daejeon	Seo-gu	36.355535	127.382378	102	0
24	Cheongju Medical Center	Chung-cheong bukdo	Cheongju	36.639978	127.473007	100	0
25	Kyungpook National University Chilgok Hospital	Daegu	Buk-gu	35.956826	128.564359	100	0
26	Busan Adventist Hospital	Busan	Seo-gu	35.112646	129.011139	134	0
27	Seoul National University Hospital	Seoul	Jongno-gu	37.577552	126.999844	100	0
28	Pusan National University Hospital	Busan	Seo-gu	35.100529	129.019059	137	0
29	Kyunghee University Hospital	Seoul	Dongdaemun-gu	37.593898	127.051313	100	0
30	Konkuk University Medical Center	Seoul	Gwangjin-gu	37.54084	127.072223	132	0
31	Korea University Anam Hospital	Seoul	Seongbuk-gu	37.587254	127.026497	100	0
32	Samsun Hospital	Busan	Sasang-gu	35.150717	129.008081	111	0
33	Haeundae Paik Hospital	Busan	Haeundae-gu	35.17423	129.181807	132	0

- Hospital_id (primary key)
- Province 및 city
- 위도 경도
- Capacity => 수용인원
- Now => 현재 수용인원

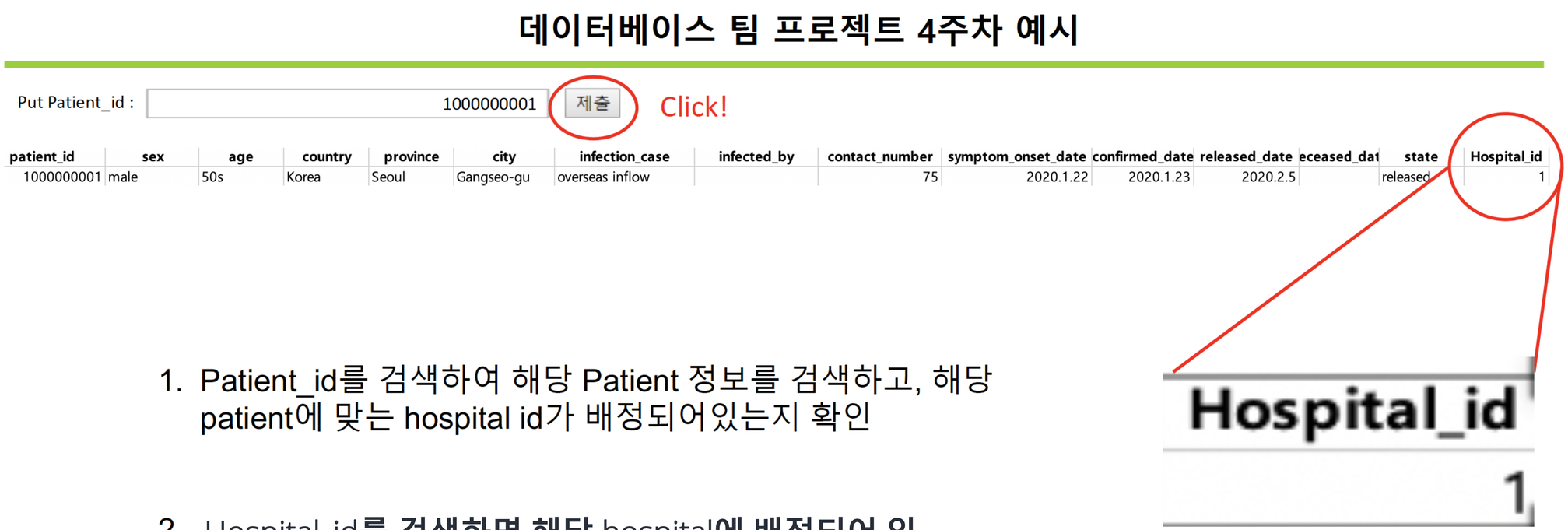
Hospital에Patient배정하기

- 2,3 주차 내용을 종합 및 응용하여 Patient를 Hospital의 수용 인원에 맞게 배정합니다
  1. Hosiptial.csv에 대한 table을 만듬
  2. Patientinfo 와 Region 테이블의 데이터 활용하여 hospital의 수용 인원에 맞게 patient를 hospital에 배정

     Patientinfo table에 “hospital_id” attribute를 추가하여서 해당 환자가 어디 병언에 입원 중인지 나타냄.
  3. 배정조건
     1. 환자의 province와 city에 해당하는 위도,경도를 region에서 찾아서 위치를 구한 뒤 가장 가까운 병원 배정
     2. 만약 그 병원의 수용인원이 모두 찼다면, 그 다음 가까운 병원에 넣음.
     3. 환자의 city가 etc인 경우에는, province의 대표 위도, 경도(Seoul, region_id : 10000)를 사용

     Hint. Patient id순으로 거리 계산 후 병원 배정 ! 유클리디안 distance를 이용하는 것이 편함
  4. Php를 통해 patient_id를 입력하여 해당 patient를 검색하거나 또는 hospital id를 통해 해당 병원에 입원중인 patient를 데이터베이스에 읽어오는 web을 구현
- 제출물 : Hospital 생성 SQL, insert용 파이썬 파일, hospital 정보까지 출력하는 php파일

데이터베이스 팀 프로젝트 4주차 예시

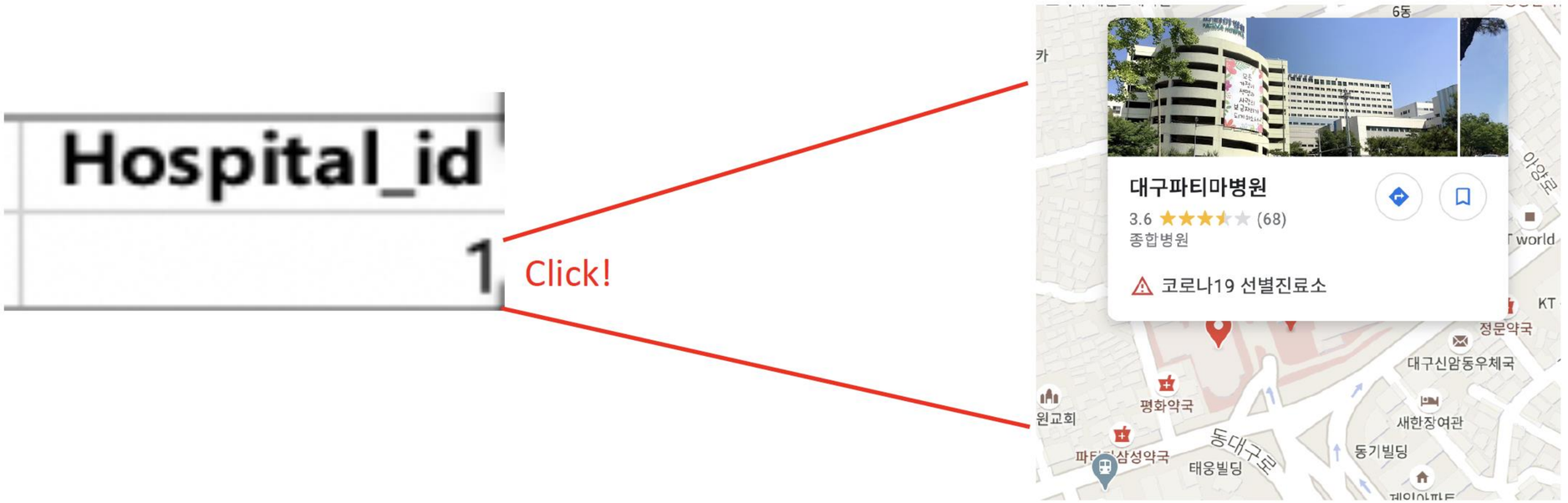


1. Patient_id를 검색하여 해당 Patient 정보를 검색하고, 해당 patient에 맞는 hospital id가 배정되어있는지 확인

2. Hospital_id**를 검색하면 해당** hospital**에 배정되어 있는** patient **목록 검색 후 출력**.

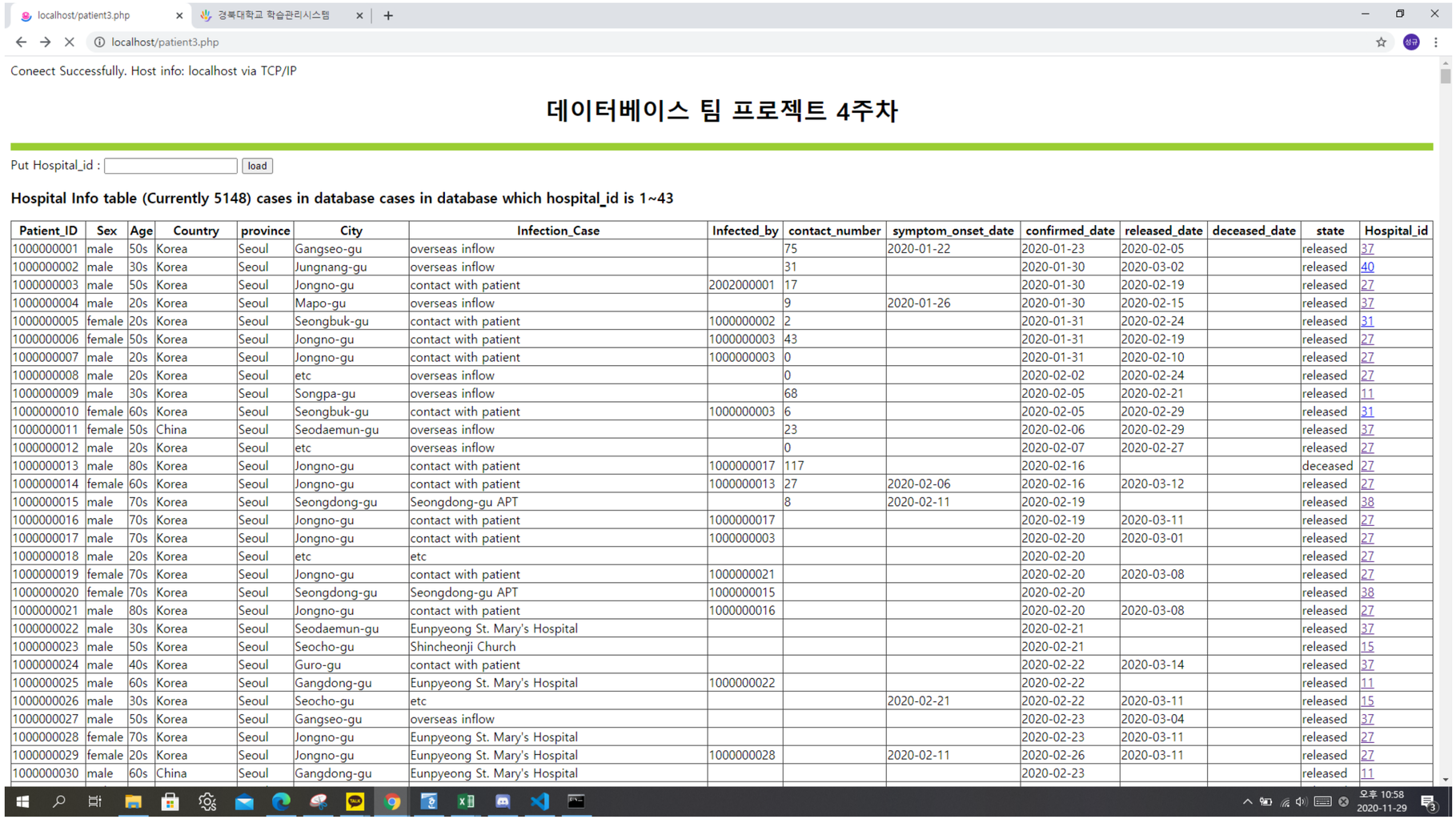
   둘 중 하나만 구현하여서 제출.

데이터베이스 팀프로젝트 4주차 예시



1. 지도 api(구글,네이버,카카오)를 사용하여 위도,경도를 통하여 해당 병원의 지도를 보여줌. https://webruden.tistory.com/378
2. 해당 Hospital_id를 클릭하면 지도로 이동.
3. JavaScript를 일정 부분 사용해야 함.

데이터베이스 팀 프로젝트 4주차 예시



localhost/patient3.php

경북대학교 학습관리시스템

localhost/patient3.php

Coneect Successfully. Host info: localhost via TCP/IP

데이터베이스 팀 프로젝트 4주차

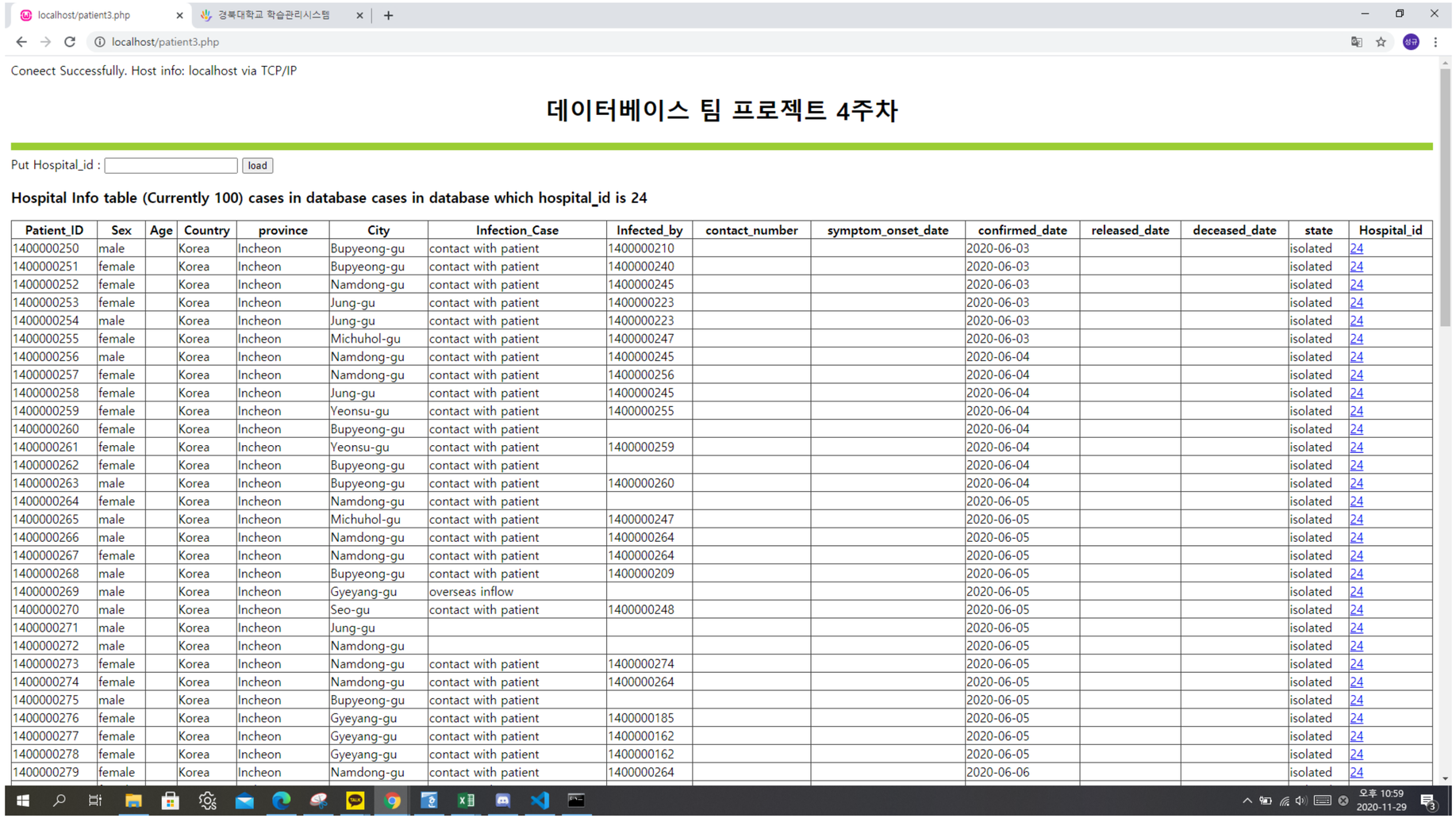
Put Hospital_id : load

Hospital Info table (Currently 5148) cases in database cases in database which hospital_id is 1~43

Patient_ID	Sex	Age	Country	province	City	Infection_Case	Infected_by	contact_number	symptom_onset_date	confirmed_date	released_date	deceased_date	state	Hospital_id
1000000001	male	50s	Korea	Seoul	Gangseo-gu	overseas inflow		75	2020-01-22	2020-01-23	2020-02-05		released	37
1000000002	male	30s	Korea	Seoul	Jungnang-gu	overseas inflow		31		2020-01-30	2020-03-02		released	40
1000000003	male	50s	Korea	Seoul	Jongno-gu	contact with patient	2002000001	17		2020-01-30	2020-02-19		released	27
1000000004	male	20s	Korea	Seoul	Mapo-gu	overseas inflow		9	2020-01-26	2020-01-30	2020-02-15		released	37
1000000005	female	20s	Korea	Seoul	Seongbuk-gu	contact with patient	1000000002	2		2020-01-31	2020-02-24		released	31
1000000006	female	50s	Korea	Seoul	Jongno-gu	contact with patient	1000000003	43		2020-01-31	2020-02-19		released	27
1000000007	male	20s	Korea	Seoul	Jongno-gu	contact with patient	1000000003	0		2020-01-31	2020-02-10		released	27
1000000008	male	20s	Korea	Seoul	etc	overseas inflow		0		2020-02-02	2020-02-24		released	27
1000000009	male	30s	Korea	Seoul	Songpa-gu	overseas inflow		68		2020-02-05	2020-02-21		released	11
1000000010	female	60s	Korea	Seoul	Seongbuk-gu	contact with patient	1000000003	6		2020-02-05	2020-02-29		released	31
1000000011	female	50s	China	Seoul	Seodaemun-gu	overseas inflow		23		2020-02-06	2020-02-29		released	37
1000000012	male	20s	Korea	Seoul	etc	overseas inflow		0		2020-02-07	2020-02-27		released	27
1000000013	male	80s	Korea	Seoul	Jongno-gu	contact with patient	1000000017	117		2020-02-16			deceased	27
1000000014	female	60s	Korea	Seoul	Jongno-gu	contact with patient	1000000013	27	2020-02-06	2020-02-16	2020-03-12		released	27
1000000015	male	70s	Korea	Seoul	Seongdong-gu	Seongdong-gu APT		8	2020-02-11	2020-02-19			released	38
1000000016	male	70s	Korea	Seoul	Jongno-gu	contact with patient	1000000017			2020-02-19	2020-03-11		released	27
1000000017	male	70s	Korea	Seoul	Jongno-gu	contact with patient	1000000003			2020-02-20	2020-03-01		released	27
1000000018	male	20s	Korea	Seoul	etc	etc				2020-02-20			released	27
1000000019	female	70s	Korea	Seoul	Jongno-gu	contact with patient	1000000021			2020-02-20	2020-03-08		released	27
1000000020	female	70s	Korea	Seoul	Seongdong-gu	Seongdong-gu APT	1000000015			2020-02-20			released	38
1000000021	male	80s	Korea	Seoul	Jongno-gu	contact with patient	1000000016			2020-02-20	2020-03-08		released	27
1000000022	male	30s	Korea	Seoul	Seodaemun-gu	Eunpyeong St. Mary's Hospital				2020-02-21			released	37
1000000023	male	50s	Korea	Seoul	Seocho-gu	Shincheonji Church				2020-02-21			released	15
1000000024	male	40s	Korea	Seoul	Guro-gu	contact with patient				2020-02-22	2020-03-14		released	37
1000000025	male	60s	Korea	Seoul	Gangdong-gu	Eunpyeong St. Mary's Hospital	1000000022			2020-02-22			released	11
1000000026	male	30s	Korea	Seoul	Seocho-gu	etc			2020-02-21	2020-02-22	2020-03-11		released	15
1000000027	male	50s	Korea	Seoul	Gangseo-gu	overseas inflow				2020-02-23	2020-03-04		released	37
1000000028	female	70s	Korea	Seoul	Jongno-gu	Eunpyeong St. Mary's Hospital				2020-02-23	2020-03-11		released	27
1000000029	female	20s	Korea	Seoul	Jongno-gu	Eunpyeong St. Mary's Hospital	1000000028		2020-02-11	2020-02-26	2020-03-11		released	27
1000000030	male	60s	China	Seoul	Gangdong-gu	Eunpyeong St. Mary's Hospital				2020-02-23			released	11

오후 10:58
2020-11-29

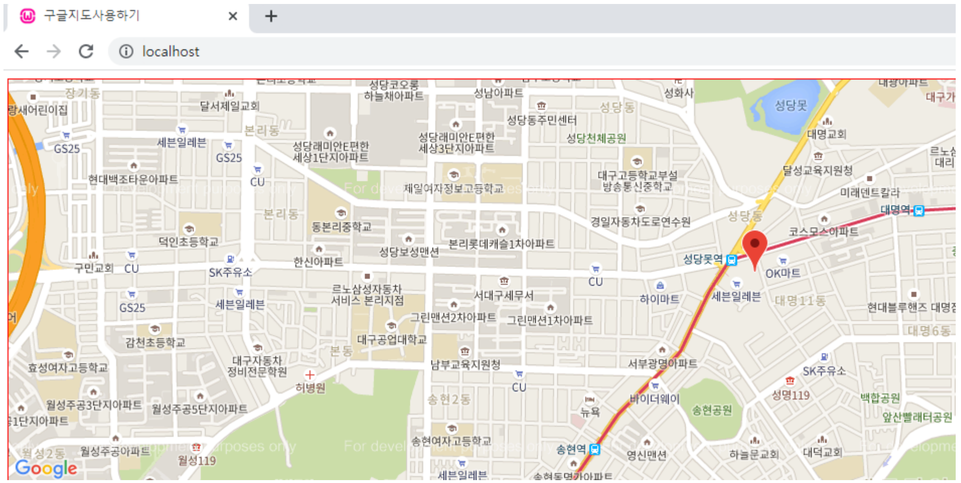
데이터베이스 팀 프로젝트 4주차 예시



Patient_ID	Sex	Age	Country	province	City	Infection_Case	Infected_by	contact_number	symptom_onset_date	confirmed_date	released_date	deceased_date	state	Hospital_id
1400000250	male		Korea	Incheon	Bupyeong-gu	contact with patient	1400000210			2020-06-03			isolated	24
1400000251	female		Korea	Incheon	Bupyeong-gu	contact with patient	1400000240			2020-06-03			isolated	24
1400000252	female		Korea	Incheon	Namdong-gu	contact with patient	1400000245			2020-06-03			isolated	24
1400000253	female		Korea	Incheon	Jung-gu	contact with patient	1400000223			2020-06-03			isolated	24
1400000254	male		Korea	Incheon	Jung-gu	contact with patient	1400000223			2020-06-03			isolated	24
1400000255	female		Korea	Incheon	Michuhol-gu	contact with patient	1400000247			2020-06-03			isolated	24
1400000256	male		Korea	Incheon	Namdong-gu	contact with patient	1400000245			2020-06-04			isolated	24
1400000257	female		Korea	Incheon	Namdong-gu	contact with patient	1400000256			2020-06-04			isolated	24
1400000258	female		Korea	Incheon	Jung-gu	contact with patient	1400000245			2020-06-04			isolated	24
1400000259	female		Korea	Incheon	Yeonsu-gu	contact with patient	1400000255			2020-06-04			isolated	24
1400000260	female		Korea	Incheon	Bupyeong-gu	contact with patient				2020-06-04			isolated	24
1400000261	female		Korea	Incheon	Yeonsu-gu	contact with patient	1400000259			2020-06-04			isolated	24
1400000262	female		Korea	Incheon	Bupyeong-gu	contact with patient				2020-06-04			isolated	24
1400000263	male		Korea	Incheon	Bupyeong-gu	contact with patient	1400000260			2020-06-04			isolated	24
1400000264	female		Korea	Incheon	Namdong-gu	contact with patient				2020-06-05			isolated	24
1400000265	male		Korea	Incheon	Michuhol-gu	contact with patient	1400000247			2020-06-05			isolated	24
1400000266	male		Korea	Incheon	Namdong-gu	contact with patient	1400000264			2020-06-05			isolated	24
1400000267	female		Korea	Incheon	Namdong-gu	contact with patient	1400000264			2020-06-05			isolated	24
1400000268	male		Korea	Incheon	Bupyeong-gu	contact with patient	1400000209			2020-06-05			isolated	24
1400000269	male		Korea	Incheon	Gyeyang-gu	overseas inflow				2020-06-05			isolated	24
1400000270	male		Korea	Incheon	Seo-gu	contact with patient	1400000248			2020-06-05			isolated	24
1400000271	male		Korea	Incheon	Jung-gu					2020-06-05			isolated	24
1400000272	male		Korea	Incheon	Namdong-gu					2020-06-05			isolated	24
1400000273	female		Korea	Incheon	Namdong-gu	contact with patient	1400000274			2020-06-05			isolated	24
1400000274	female		Korea	Incheon	Namdong-gu	contact with patient	1400000264			2020-06-05			isolated	24
1400000275	male		Korea	Incheon	Bupyeong-gu	contact with patient				2020-06-05			isolated	24
1400000276	female		Korea	Incheon	Gyeyang-gu	contact with patient	1400000185			2020-06-05			isolated	24
1400000277	female		Korea	Incheon	Gyeyang-gu	contact with patient	1400000162			2020-06-05			isolated	24
1400000278	female		Korea	Incheon	Gyeyang-gu	contact with patient	1400000162			2020-06-05			isolated	24
1400000279	female		Korea	Incheon	Namdong-gu	contact with patient	1400000264			2020-06-06			isolated	24

지도 **api**사용 예시(코드 업로드)

```
<title>구글지도사용하기</title>
<meta charset = 'utf-8'>
<meta http-equiv="X-UA-Compatible" content="IE=edge">
<meta name="viewport" content="width=device-width, initial-scale=1">
<script type="text/javascript" src="https://code.jquery.com/jquery-3.1.1.min.js"></script>
<script type="text/javascript" src="http://maps.google.com/maps/api/js?key=키는 팀별로 발급해서 사용할것" >
<style>
#map_ma {width:100%; height:400px; clear:both; border:solid 1px red;}
</style>
</head>
<body>
<div id="map_ma"></div>
<script type="text/javascript">
    $(document).ready(function() {
        var myLatlng = new google.maps.LatLng(35.837143,128.558612); // 위치값 위도 경도
  var Y_point          = 35.837143;      // Y 좌표
  var X_point          = 128.558612;      // X 좌표
  var zoomLevel       = 18;            // 지도의 확대 레벨 : 숫자가 클수록 확대정도가 큼
  var markerTitle      = "대구광역시";      // 현재 위치 마커에 마우스를 오버올때 나타나는 정보
  var markerMaxWidth   = 300;           // 마커를 클릭했을때 나타나는 말풍선의 최대 크기
```



X좌표와 Y좌표는 데이터베이스에서 선택된 병원의 위치 정보를 가져오는 것으로 변경 (지도 예시 코드는 첨부 되어 있음)

API는 팀별로 key를 발급 받아서 사용 할 것!
Api key 발급 참고 :
https://webruden.tistory.com/378

SQL Task

- 각 팀별로 생성한 데이터베이스 테이블에 대해서 indexing을 적용한다.
- 어떤 테이블을 indexing 할 것인지는 자유롭게 수행한다.
- 본인들이 수행한 indexing에 대해 간단하게 README 파일에 서술하여 간단하게 제출한다.
  ex) 테이블을 선택하고, 어떤 attribute로 indexing하였는지 이유와, 성능이 어느 정도 향상되었다.
- Indexing SQL 쿼리 파일도 제출.

DO YOUR BEST!