



GMT-351

Geospatial Data Management

Team Project Report

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In the beginning we start to discuss about the project and try to make a diagram. We decided which elements will be foreign or primary keys in the diagram. Then we started to create the tables in Postgresql using query tool commands.

```
CREATE TABLE student (  
  
    id integer NOT NULL PRIMARY KEY,  
    name character(20) NOT NULL,  
    surname character(20) NOT NULL,  
    department character(30) NOT NULL,S  
    class int );  
-----
```

(Creating Student table codes)

```
CREATE TABLE communities (  
  
    id character(6) NOT NULL PRIMARY KEY,  
    name character(20) NOT NULL,  
    manager_id integer NOT NULL,  
  
    FOREIGN KEY(manager_id) REFERENCES student(id) );  
-----
```

(Creating Communities table codes)

```
CREATE TABLE events (  
  
    name character(20) NOT NULL,  
    community_id character(6) NOT NULL,  
    participants integer NOT NULL,  
    place character(100) NOT NULL,  
    time character(50) NOT NULL,  
  
    FOREIGN KEY(community_id) REFERENCES communities(id) );  
-----
```

(Creating Event table codes)

Then we input the sample data and these are output tables.

Query Query History						Scratch
1 select * from student						
Data Output Messages Notifications						
	id [PK] integer	name character (20)	surname character (20)	department character (30)	class integer	
1	21967569	Oğuzhan	Gürçan	Geomatics Engineering	3	
2	21967588	Tolga	Gürcüoğlu	Geomatics Engineering	3	
3	21967500	Büşra	Gezen	Biology	2	
4	21967501	İrem	Aday	Geomatics Engineering	3	
5	21850030	Ufuk	Tuncer	Economy	2	
6	21850084	Eylül	Sönmez	Industry Engineering	3	
7	21850032	Alper	Keskin	Literature	3	
8	21850099	Burak	Kızılkoca	Computer Engineering	2	
9	21960011	Sezen	Arınık	Geomatics Engineering	3	
10	21960055	Enes	Fidanlı	Chemistry	2	

(Student Table)

Query Query History			
1 select * from communities			
Data Output Messages Notifications			
	id [PK] character (6)	name character (40)	manager_id integer
1	FOT111	Football	21967569
2	SOC112	Social Activities	21967588
3	TEC123	Technical Trips	21967500
4	THE100	Theater	21967501
5	CHE010	Chess	21850030
6	CAP121	Career Planning	21850084
7	LIC147	Literature and Cinema	21850032
8	COD333	Artificial Intelligence	21850099
9	SPA123	Spatial Information	21960011
10	ART200	Painting and Photography	21960055

(Communities Table)

Query

Query History

Scratch Pad

1

select * from events

Data Output

Messages

Notifications

	name character (40)	community_id character (6)	participants integer	place character (100)	time character (50)
1	Football Match	FOT111	22	Hacettepe Üniversitesi Beytepe Pıstı	01-03-2023 20:00
2	Meeting New Friends	SOC112	30	Geyik Cafe Bistro	01-03-2023 15:00
3	Worlds of Machines	TEC123	50	Hacettepe Üniversitesi Makine Mühendisliği	02-03-2023 15:00
4	Player Auditions	THE100	50	Hacettepe Üniversitesi Hukuk Fakültesi	02-03-2023 11:00
5	Chess Champion	CHE010	32	Piramit Kafe	04-03-2023 15:00
6	Success in Career Life	CAP121	40	Hacettepe Teknokent Arge 1	04-03-2023 15:00
7	Restoration of Library	LIC147	40	Hacettepe Üniversitesi Kütüphanesi	04-03-2023 18:00
8	Python Lectures	COD333	75	Bilgisayar Mühendisliği ve Yapay Zeka Mühendisliği	06-03-2023 18:00
9	Congress Meeting	SPA123	25	Geomatik Mühendisliği	06-03-2023 16:00
10	Art Gallery Visit	ART200	50	Hacettepe Üniversitesi Güzel Sanatlar Fakültesi	07-03-2023 14:00

(Events Table)

In this part we defined the time and places of events in table. After creation part of tables is completed, we connected to our database using psycopg2 library. We create function named 'Create_Map' in order to access information in our database and create campus map that shows current community activities. We designed our function taking into account any updating in the database. "Create_Map" function takes the updated database every time it is run by the users. We obtained the location and time datas from the "events table" and these datas are visualized on the map with pop ups.

The screenshot shows a PyCharm IDE with a project named 'konumsal_veri'. The file explorer on the left shows the project structure, including a 'venv' directory and files like 'address.py', 'Campus_Social_Activities_Map.html', 'Map.py', and 'Tables.py'. The main editor displays the code in 'Map.py':

```

24 print()
25
26
27 cur = conn.cursor()
28 cur.execute('''SELECT place FROM events''')
29
30 Create_Map0

```

The Run console at the bottom shows the execution output for the 'Map' configuration:

```

Please enter an output file name : Campus_Social_Activities_Map

EVENT_PLACES [('Hacettepe Üniversitesi Beytepe Pisti', ('Gayik Cafe Bistro

POPUUP INFORMATIONS [['Footbal Match', 'FOT111', '01-03-2023 20:00', ('Meeting New Friends', 'S

<folium.folium.Map object at 0x000001FD882246A0>

[(39.8720867, 32.732666689100434), (39.868795899999995, 32.732181008080004), (39.86374705, 32.734437939768526), (39.86386735, 32.7321747), (39.864769249999995, 32.7343505), (39.8

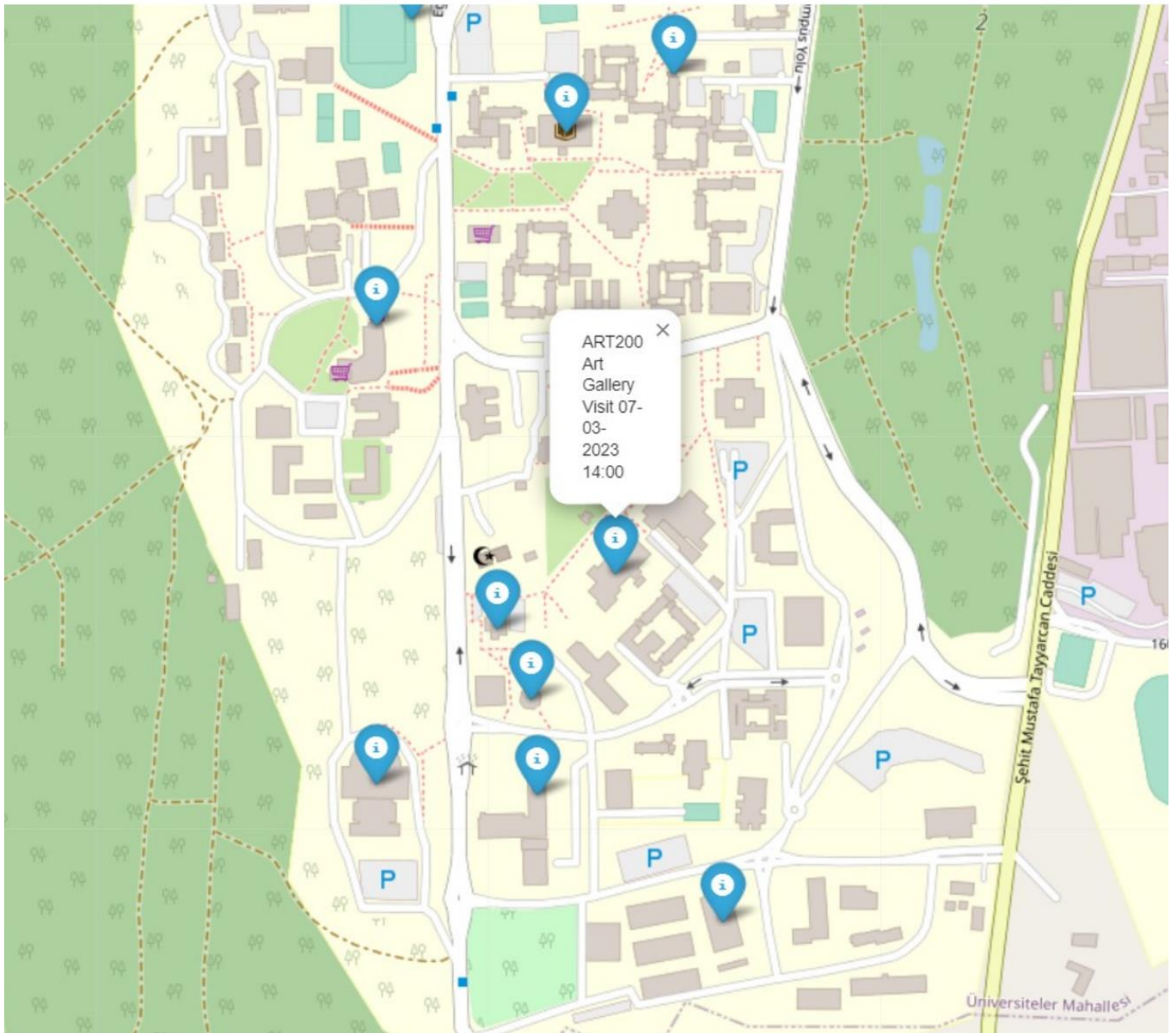
Users can find current campus activities in Campus_Social_Activities_Map.html

Process finished with exit code 0

```

(The output codes)

CAMPUS SOCIAL ACTIVITIES MAP



(A picture of an example of pop ups in map)

-THE END-