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**Department of Computer Science**

**American International University-Bangladesh**

**Mid Term Assignment**

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**Course Name: Database**

**Section : F**

**Department : Computer Science & Engineering**

**Prepared & submitted by:**

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**CASE STUDY**

In a cricket club management system, there are many players, and they have many matches. Each players have its own identification. The system stores information of the players, that is ID, age, city, country, and their name. The match also has its number, type, time. One coach can teach all, but all players will have one coach. The system stores coach’s id, name, and skill. There will be one physician who trains the players. One club will have one physician and he has name, ID, phone number and his experience, which are stored in the system. There is a doctor in this system. The doctor’s information such as name, id, phone number and skill are stored in the system. The system has player history, where the players total match, total run, total wicket, and membership id will be recorded. There is a club. The system stores club name and club id. The club will organize matches. The system stores match type, match number and time. There are some equipment’s of cricket which has its code, name, type. 

**ER DIAGRAM**



**NORMALIZATION**

**Teach- (p\_id, p\_age, p\_city,p\_country,p\_name,c\_id,c\_name,c\_skill)**

**1NF: c\_skill is multivalued attribute**

**2NF: p\_id,p\_age,p\_city,p\_country,p\_name**

**c\_id,c\_name,c\_skill**

**3NF: p\_id,p\_age, p\_name**

**a\_id,p\_city,p\_country**

**c\_id,c\_name,c\_skill**

**Final list from Teach-**

1. **p\_id,p\_age,p\_name,a\_id,c\_id**
2. **a\_id,p\_city,p\_country**
3. **c\_id,c\_name**
4. **c\_id,c\_skill -> composite pk**

**Record- (p\_id,p\_age,p\_city,p\_country,p\_name,mmbrship\_id,total\_match,total\_run,total\_wic)**

**1NF: No multivalued attribute**

**2NF: p\_id,p\_age,p\_city,p\_country,p\_name**

**mmbrship\_id,total\_match,total\_run, total\_wic**

**3NF: p\_id,p\_age, p\_name**

**a\_id,p\_city,p\_country**

**mmbrship\_id,total\_match,total\_run, total\_wic**

**Final list for Record-**

1. **p\_id,p\_age,p\_name, a\_id**
2. **a\_id,p\_city,p\_country**
3. **mmbrship\_id,total\_match,total\_run, total\_wic**
4. **n\_id, p\_id, mmbership\_id**

**Trains- (p\_id,p\_age,p\_city,p\_country,p\_name, ps\_id,ps\_name,ps\_phone,ps\_experience)**

**1NF: ps\_experience is multivalued attribute**

**2NF: p\_id,p\_age,p\_city,p\_country,p\_name**

**ps\_id,ps\_name,ps\_phone,ps\_experience**

**3NF: p\_id,p\_age, p\_name**

**a\_id,p\_city,p\_country**

**ps\_id,ps\_name,ps\_phone,ps\_experience**

**Final list for Trains-**

1. **p\_id,p\_age,p\_name, a\_id, ps\_id**
2. **a\_id,p\_city,p\_country**
3. **ps\_id,ps\_name,ps\_phone,**
4. **ps\_id,ps\_experience -> composite pk**

**Serve- (p\_id,p\_age,p\_city,p\_country,p\_name, d\_id,d\_name,d\_phone)**

**1NF: No multivalued attribute**

**2NF: p\_id,p\_age,p\_city,p\_country,p\_name**

**d\_id,d\_name,d\_phone**

**3NF: p\_id,p\_age,p\_name**

**a\_id,p\_city,p\_country**

**d\_id,d\_name,d\_phone**

**Final list for Serve-**

1. **p\_id,p\_age, p\_name, a\_id, d\_id**
2. **a\_id,p\_city,p\_country**
3. **d\_id,d\_name,d\_phone**

**Plays in--(p\_id,p\_age,p\_city,p\_country,p\_name, cl\_id,cl\_name)**

**1NF: No multivalued attribute**

**2NF: p\_id,p\_age,p\_city,p\_country,p\_name**

**cl\_id,cl\_name**

**3NF: p\_id,p\_age,p\_name**

**a\_id,p\_city,p\_country**

**cl\_id,cl\_name**

**Final list for Plays in-**

1. **p\_id,p\_age, p\_name, a\_id, cl\_id**
2. **a\_id,p\_city,p\_country**
3. **cl\_id,cl\_name**

**Organize-(m\_no,m\_type,time,cl\_id,cl\_name)**

**1NF: No multivalued attribute**

**2NF: m\_no,m\_type,time**

**cl\_id,cl\_name**

**3NF: m\_no,m\_type,time**

**cl\_id,cl\_name**

**Final list for Organize-**

1. **m\_no,m\_type,time,cl\_id**
2. **cl\_id,cl\_name**

**Uses-(e\_code,e\_name,e\_type,cl\_id,cl\_name)**

**1NF: No multivalued attribute**

**2NF: e\_code,e\_name,e\_type**

**cl\_id,cl\_name**

**3NF: e\_code,e\_name,e\_type**

**cl\_id,cl\_name**

**Final list for Uses-**

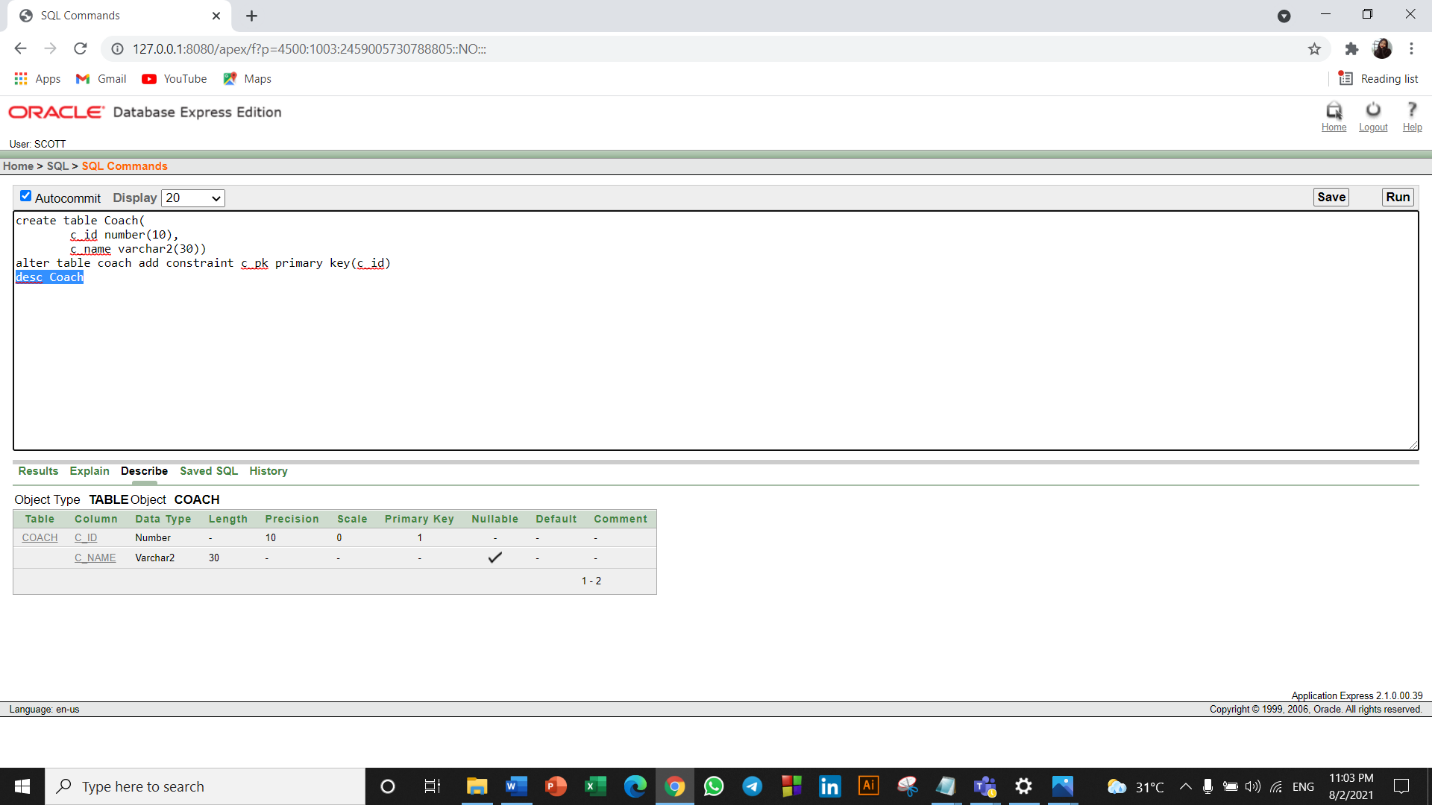
1. **e\_code,e\_name,e\_type,cl\_id**
2. **cl\_id,cl\_name**

**Final list from normalization**

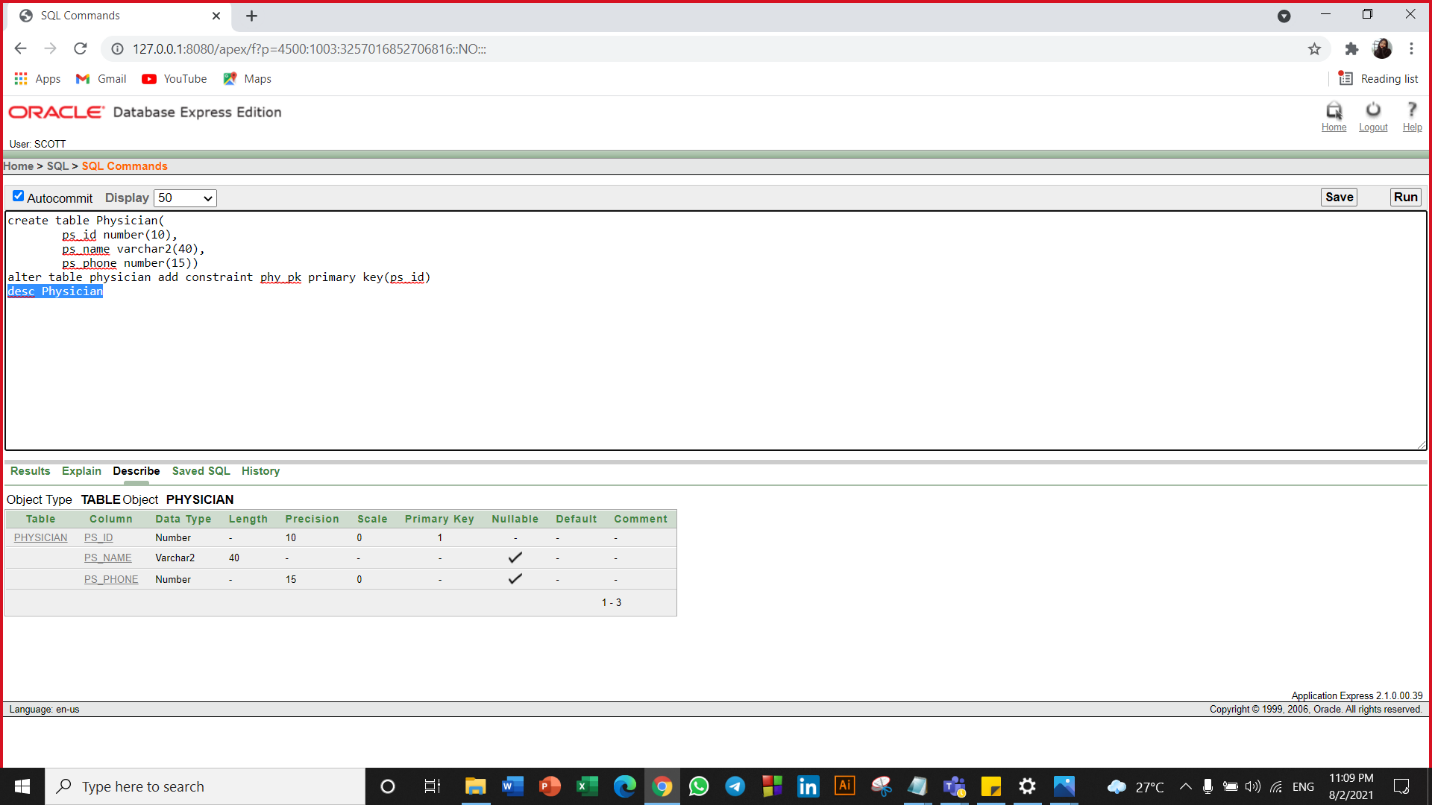
1. **p\_id,p\_age,p\_name,a\_id,c\_id, ps\_id, d\_id, cl\_id -> player**
2. **a\_id,p\_city,p\_country -> location**
3. **c\_id,c\_name -> Coach**
4. **c\_id,c\_skill -> composite pk -> Qualification**
5. **mmbrship\_id,total\_match,total\_run, total\_wic -> Player\_Details**
6. **n\_id, p\_id, mmbership\_id -> Player\_Identity**
7. **ps\_id,ps\_name,ps\_phone -> Physician**
8. **ps\_id,ps\_experience -> composite pk -> p\_quality**
9. **d\_id,d\_name,d\_phone -> Doctor**
10. **cl\_id,cl\_name -> Club**
11. **m\_no,m\_type,time,cl\_id -> Match**
12. **e\_code,e\_name,e\_type,cl\_id -> Equipment**

**TABLE CREATE**

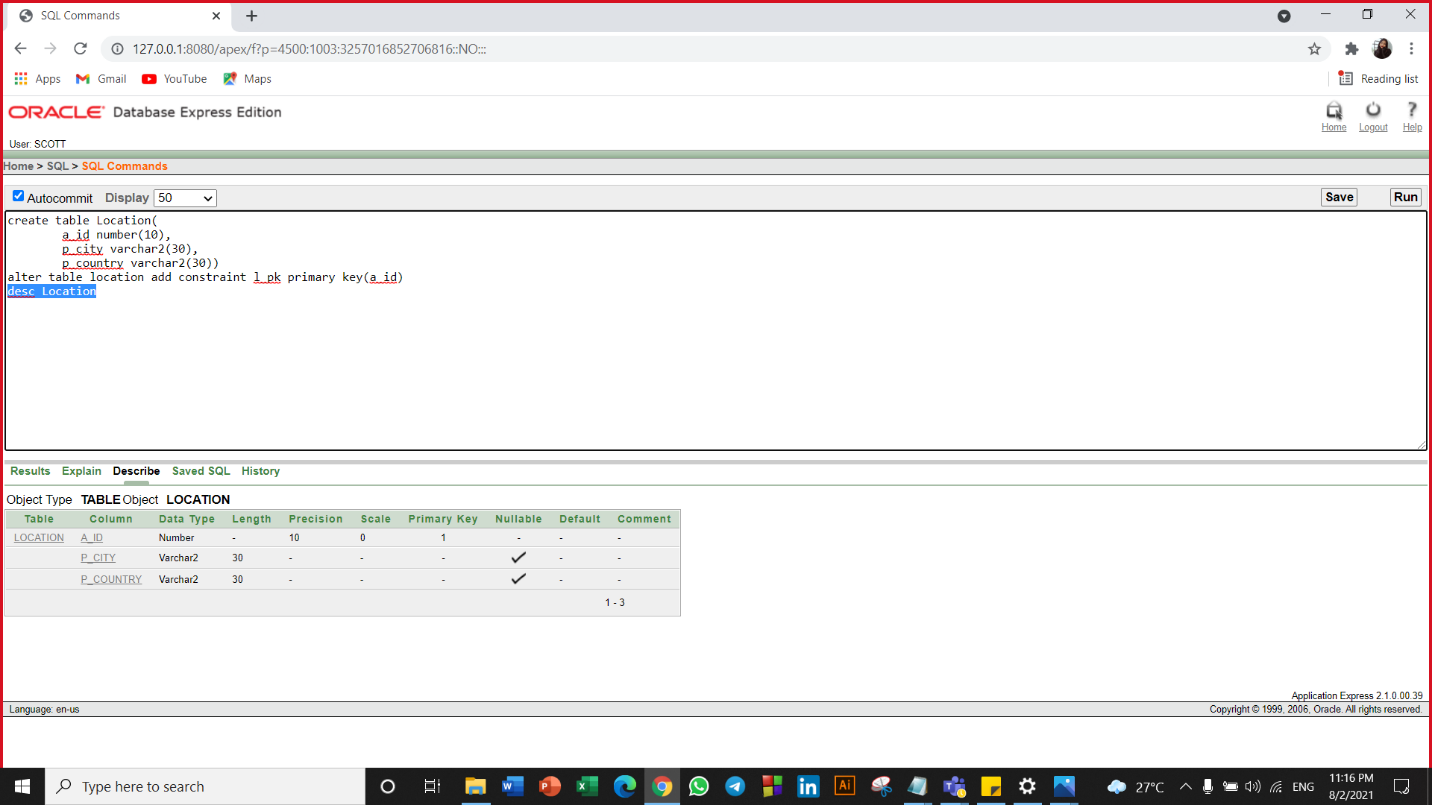
**Table Name: Coach**



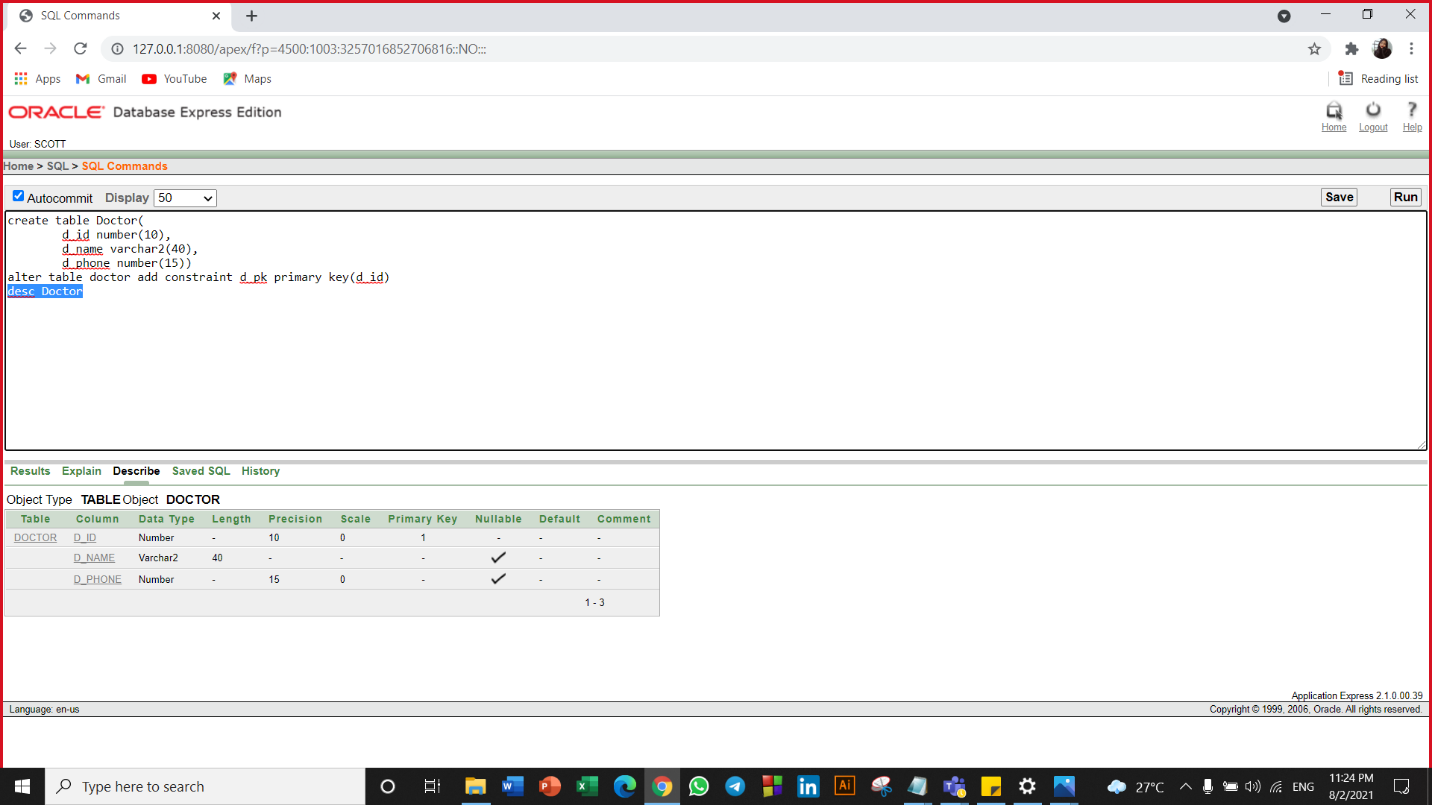
**Table Name: Physician**



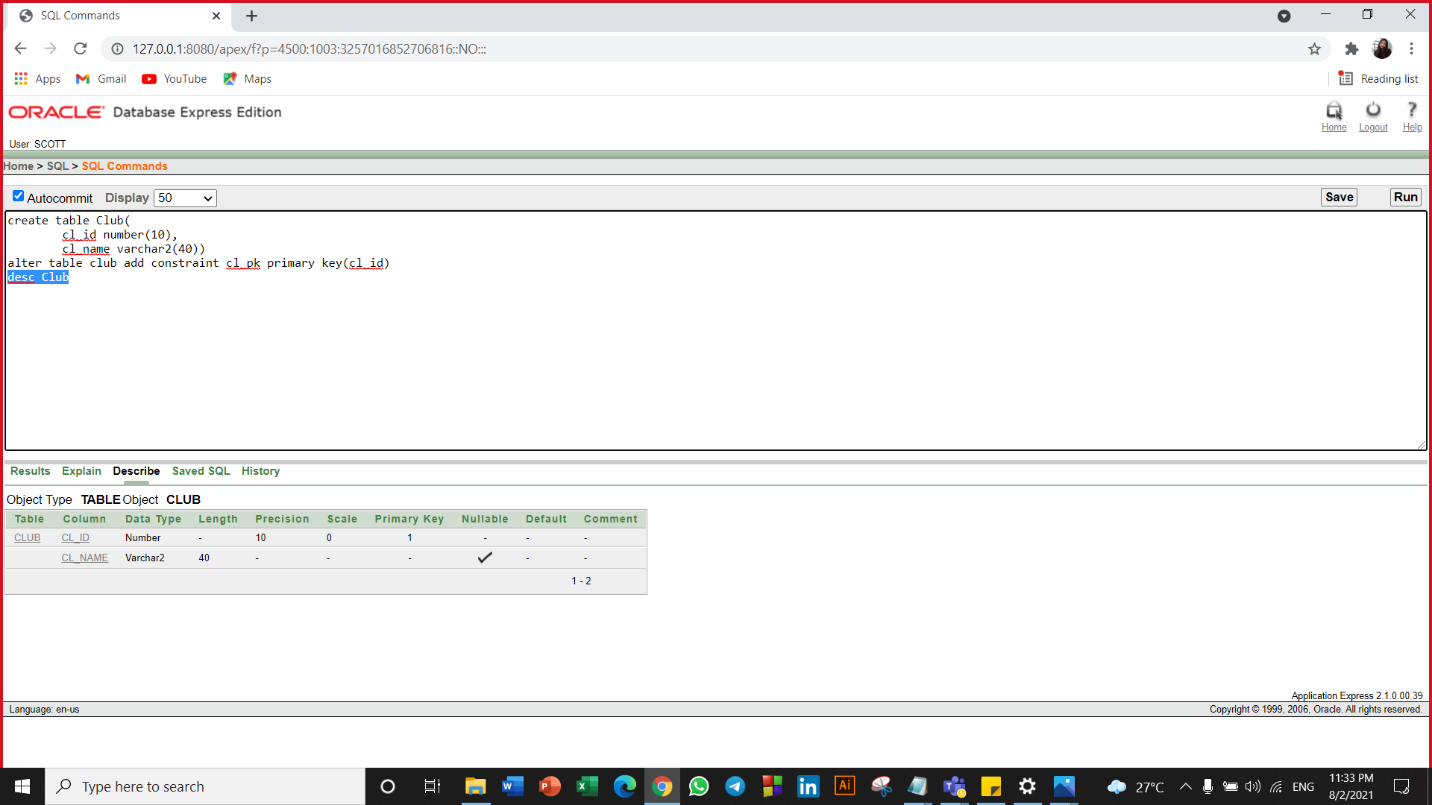
**Table Name: Location**



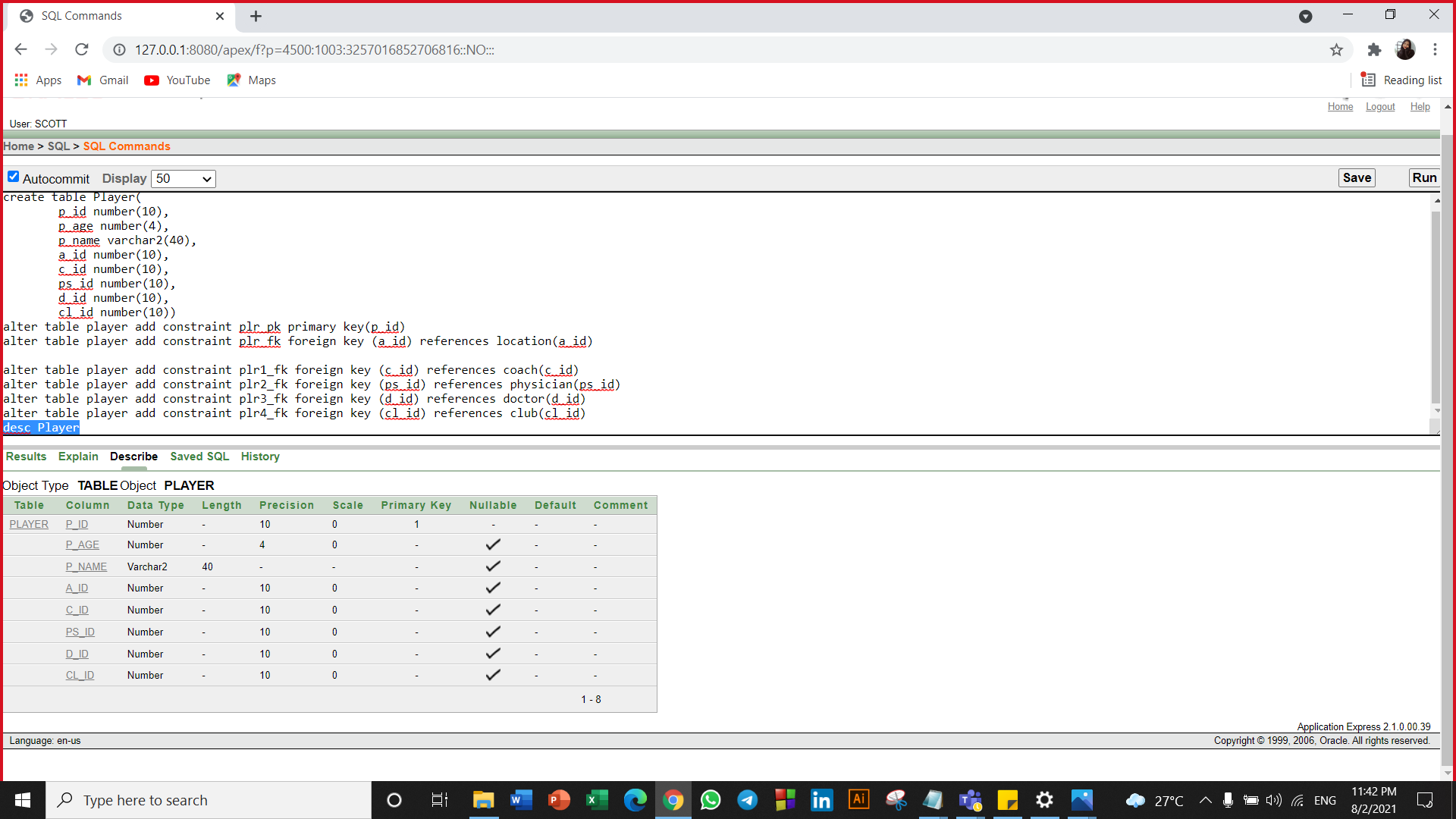
**Table Name: Doctor**



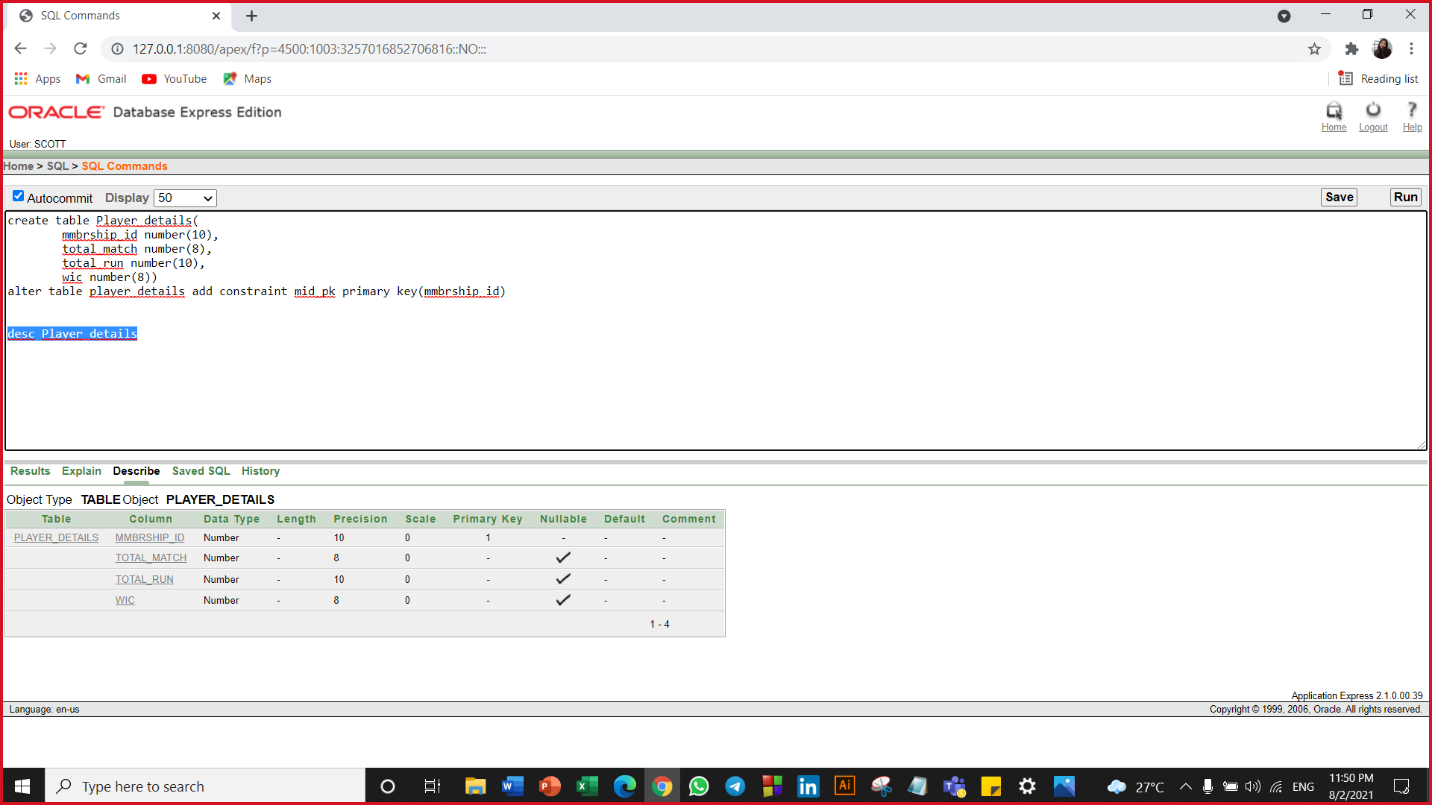
**Table Name: Club**



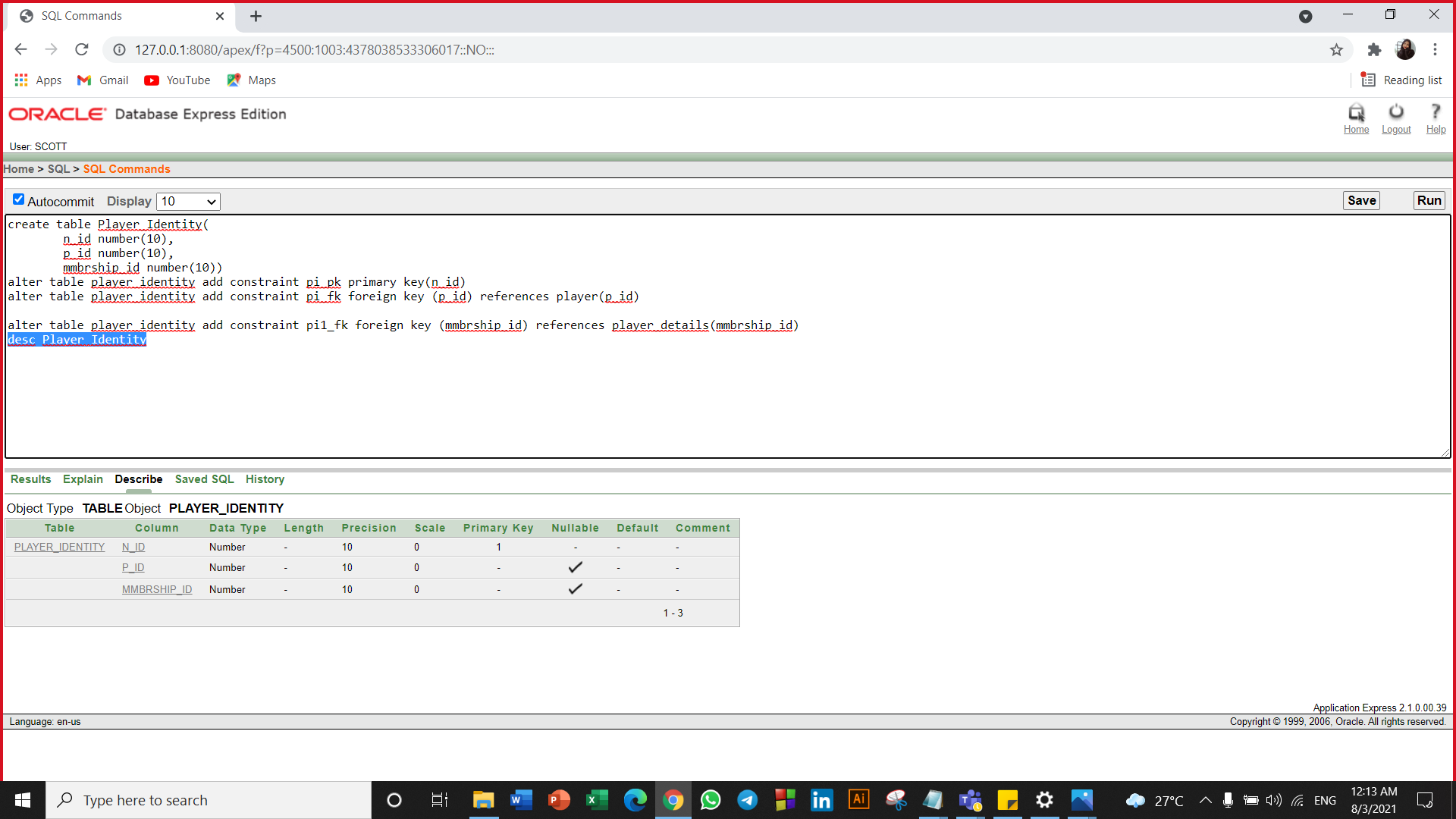
**Table Name: Player**



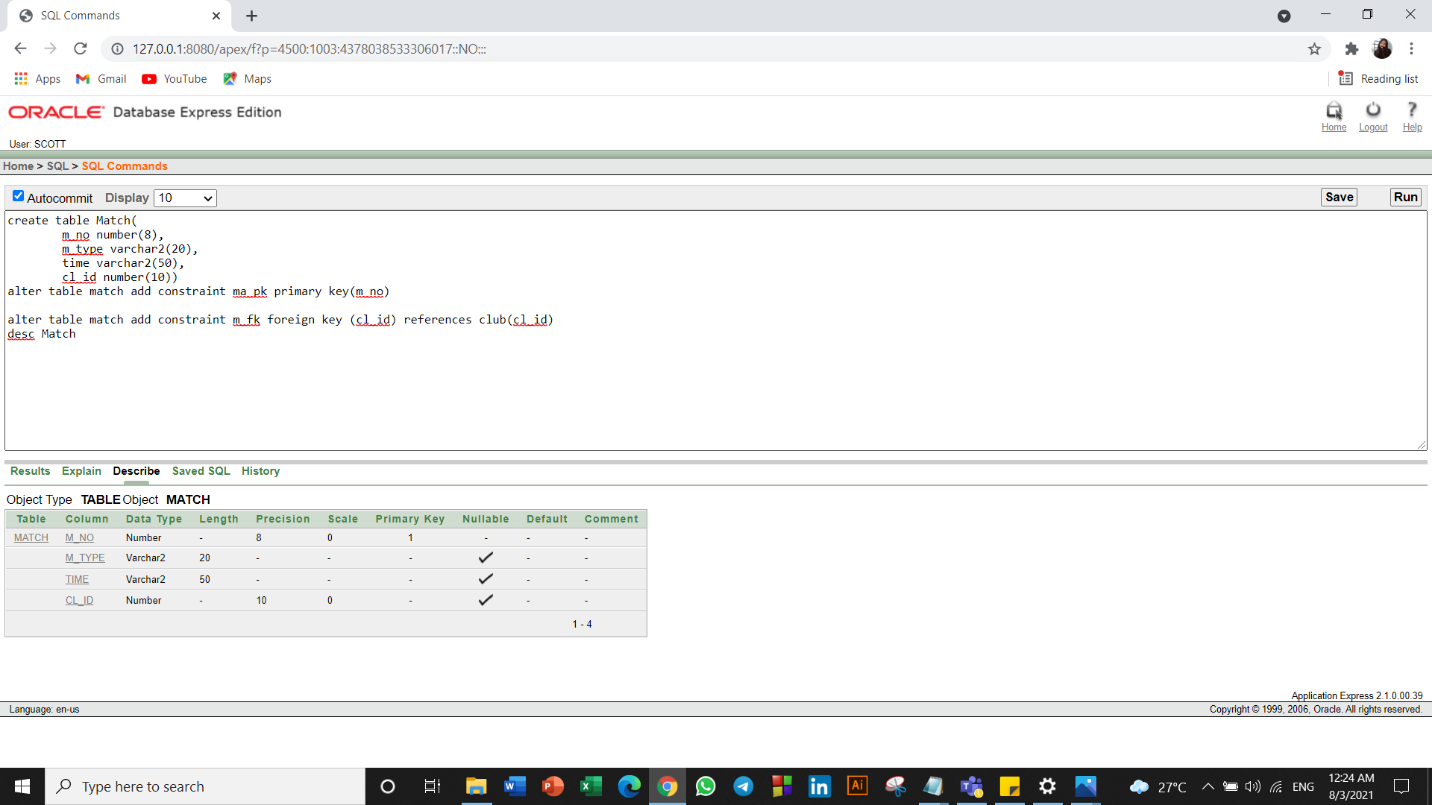
**Table Name: Player\_details**



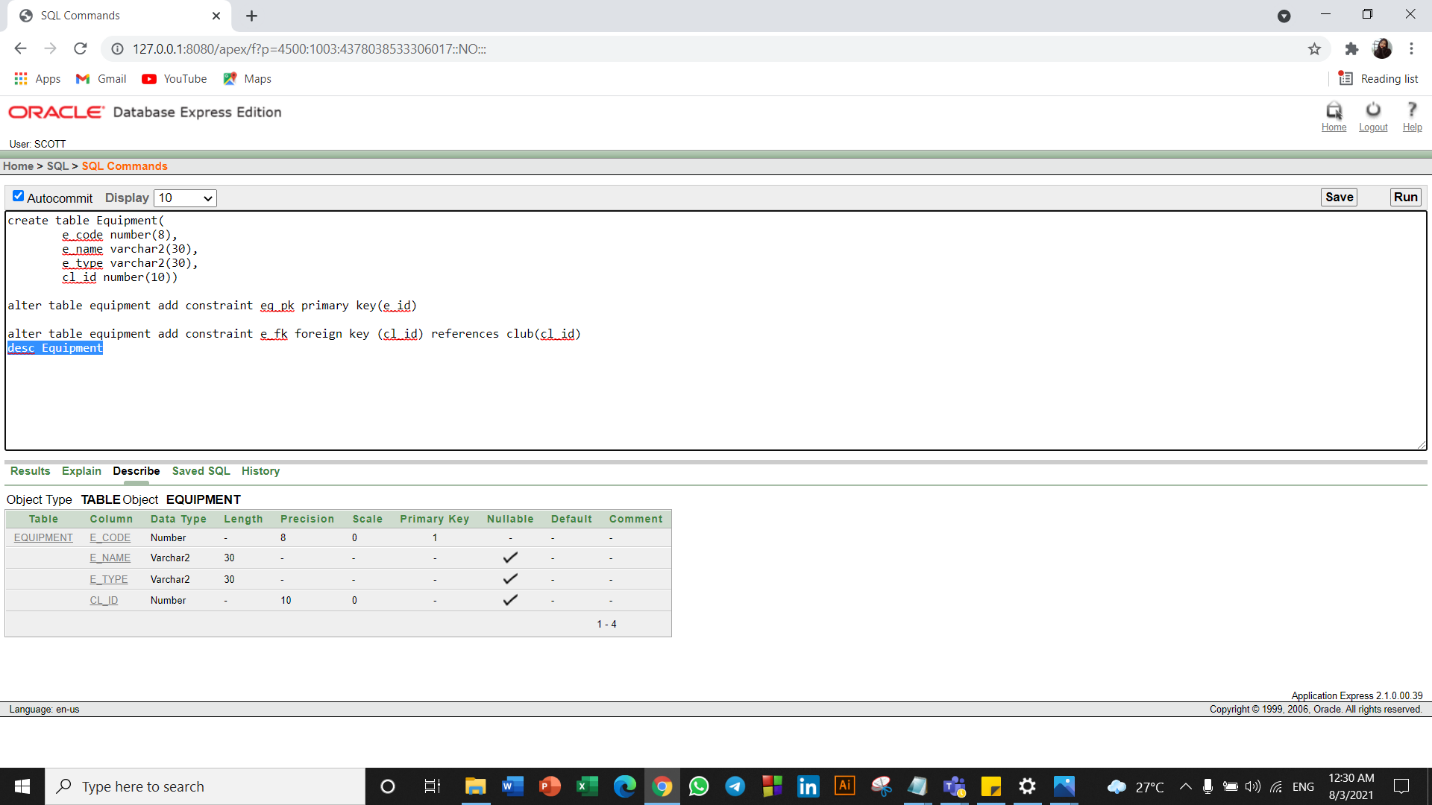
**Table Name: Player\_identity**



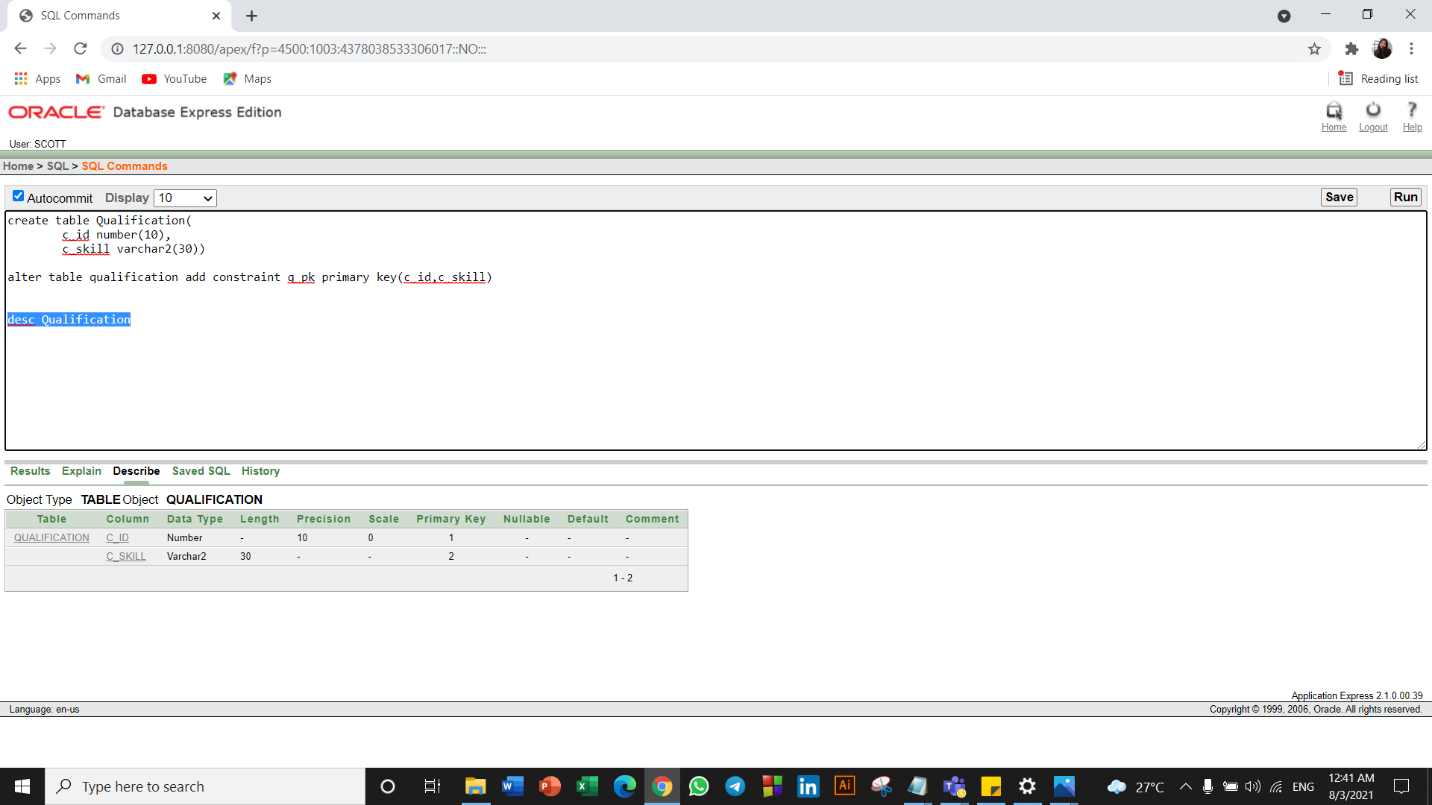
**Table Name: Match**



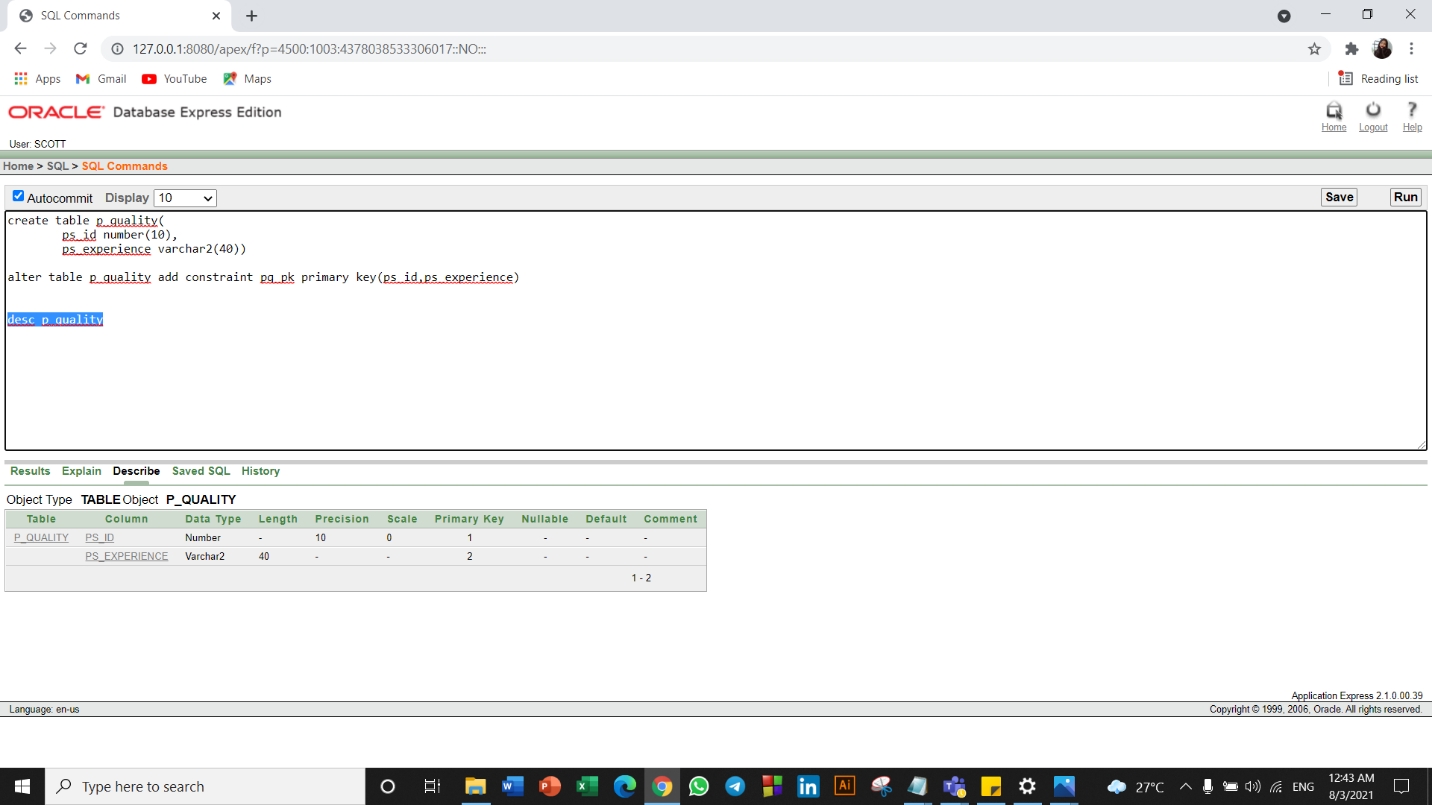
**Table Name: Equipment**



**Table Name: Qualification**

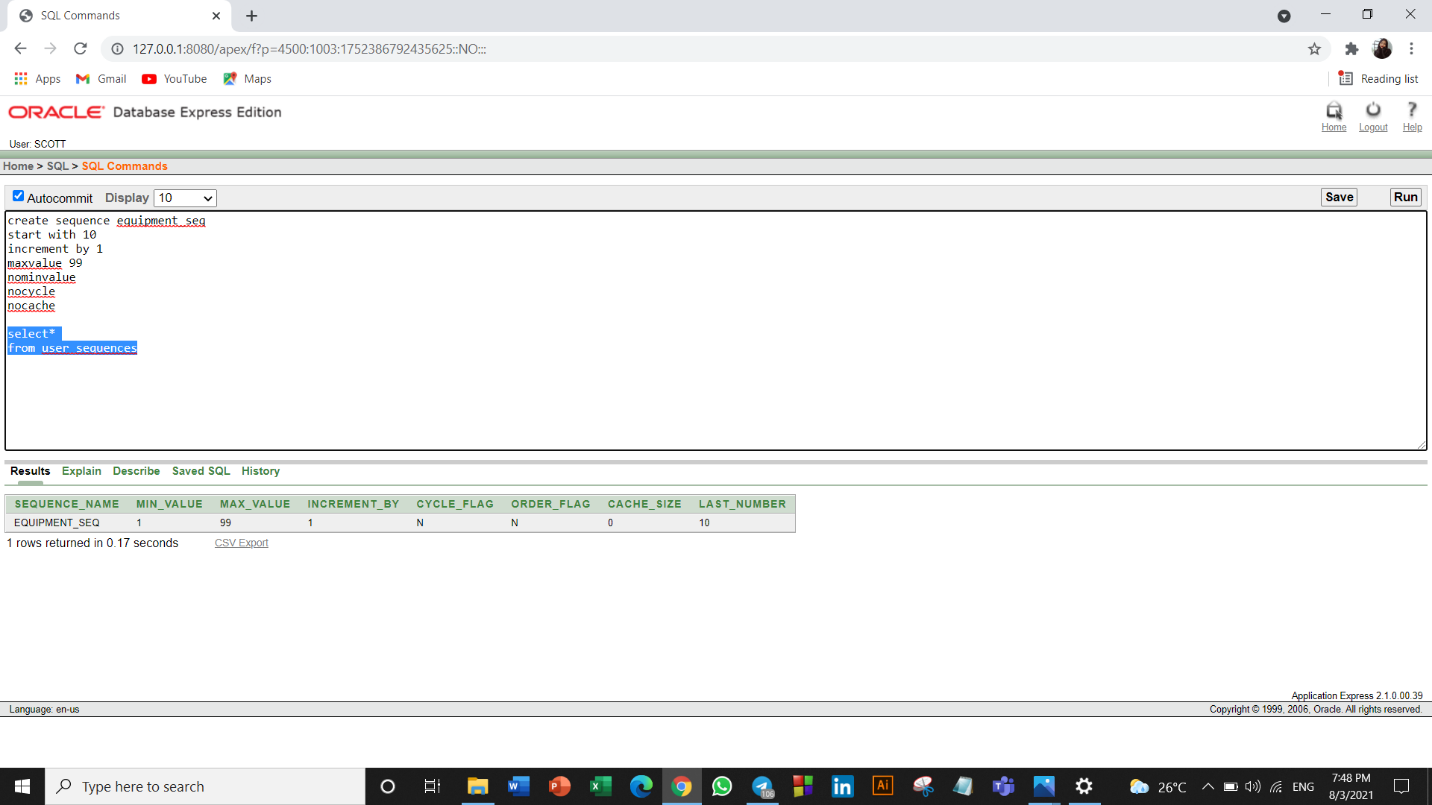


**Table Name: P\_Quality**



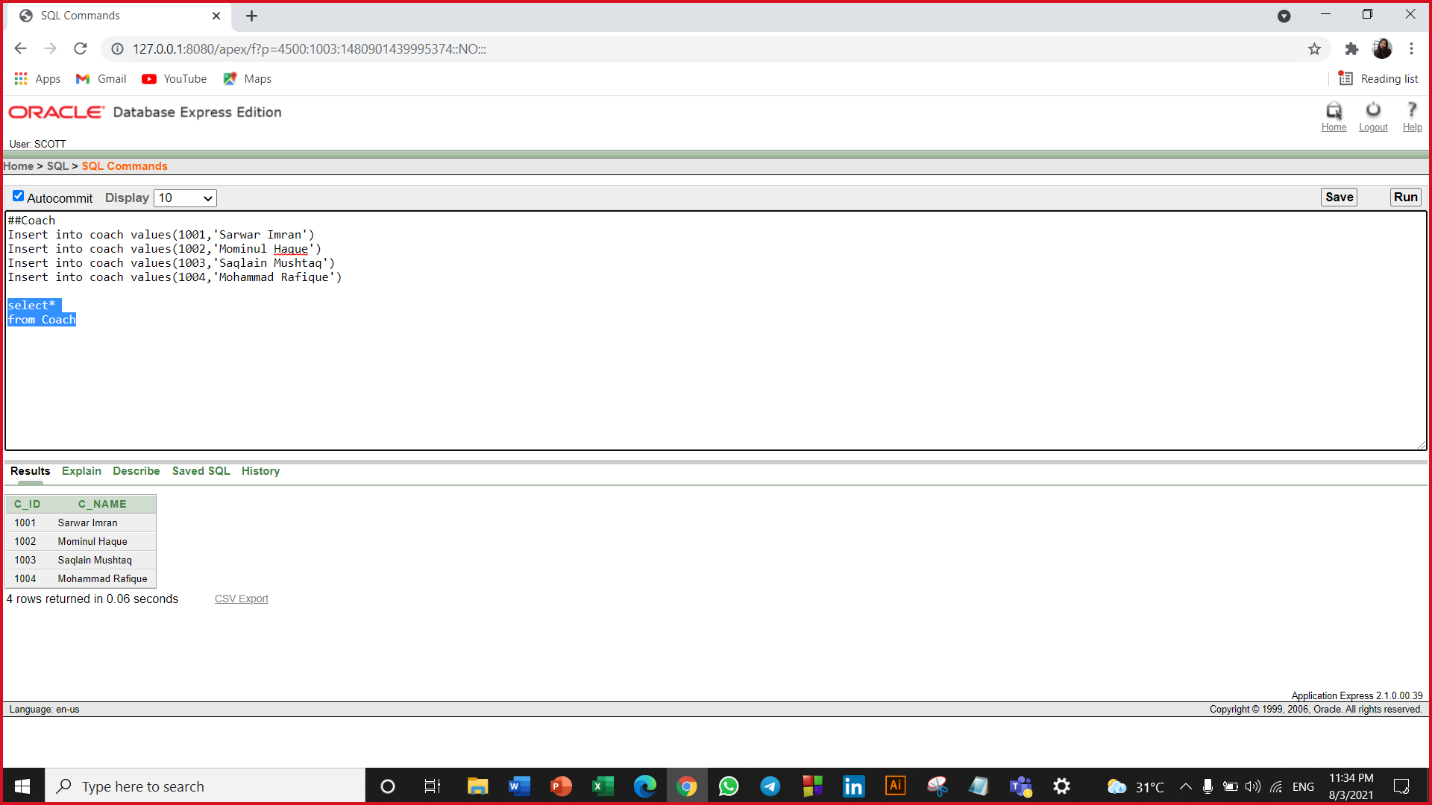
**SEQUENCES**

**Sequence has been created in equipment table**



**INSERTATION**

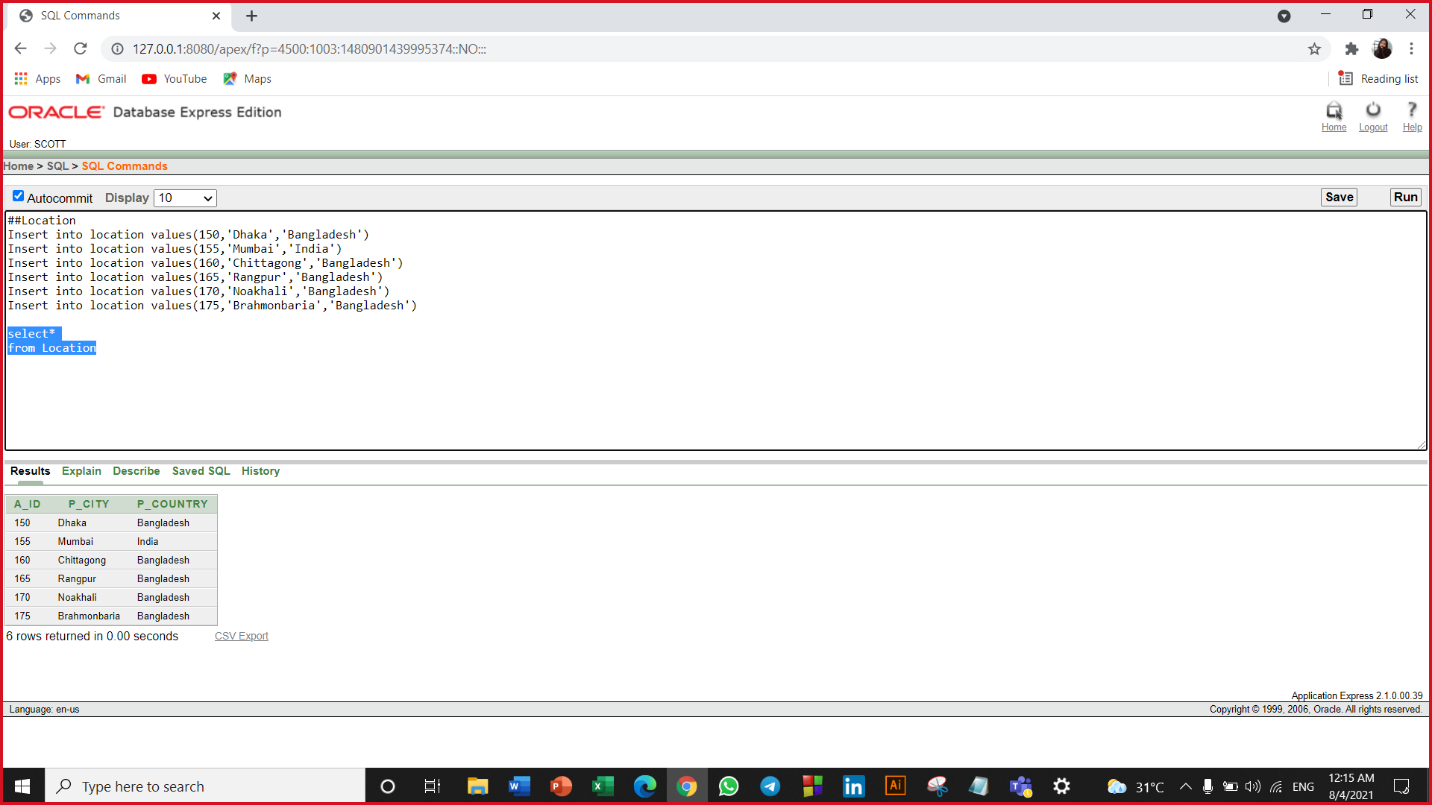
**Table name: Coach**



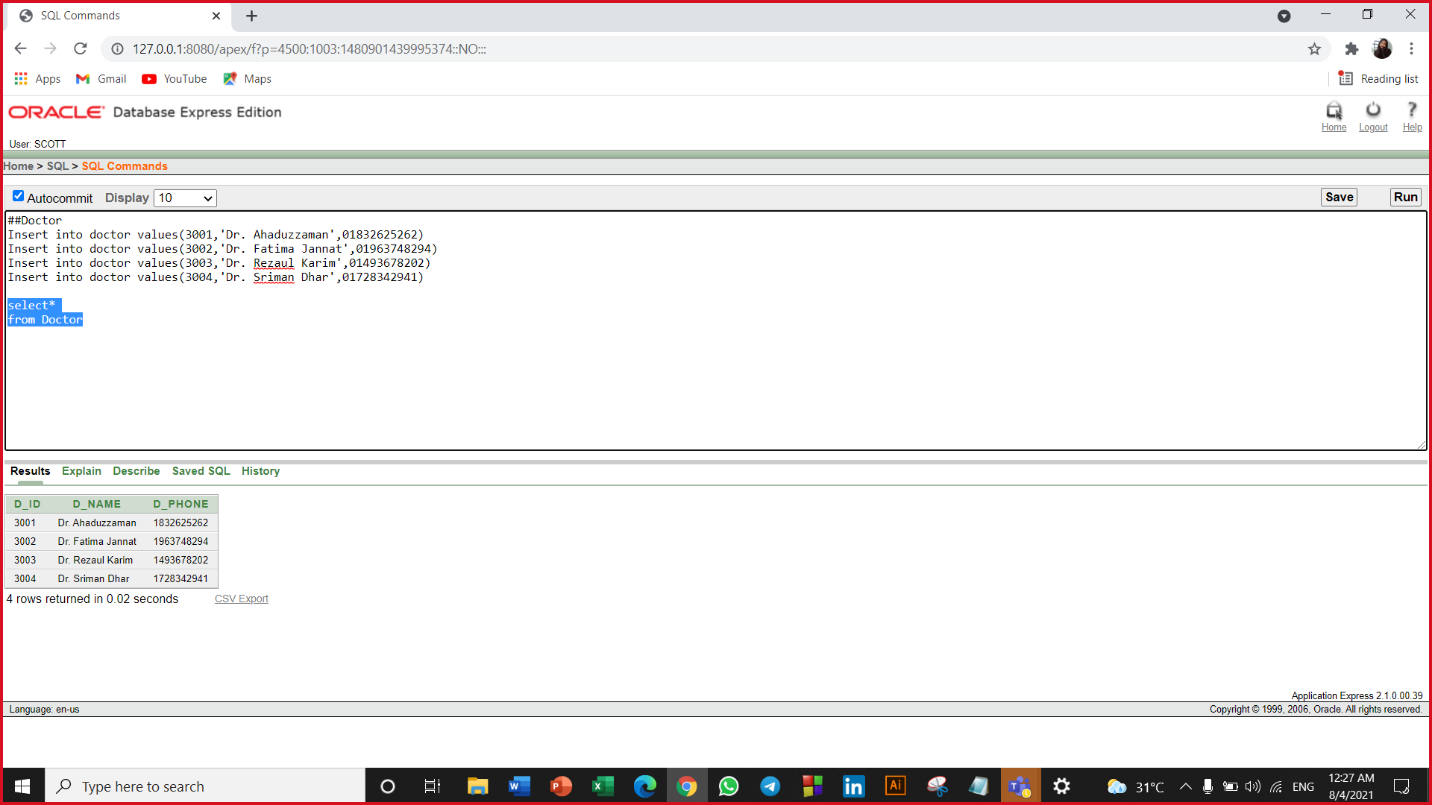
**Table Name: Physician**



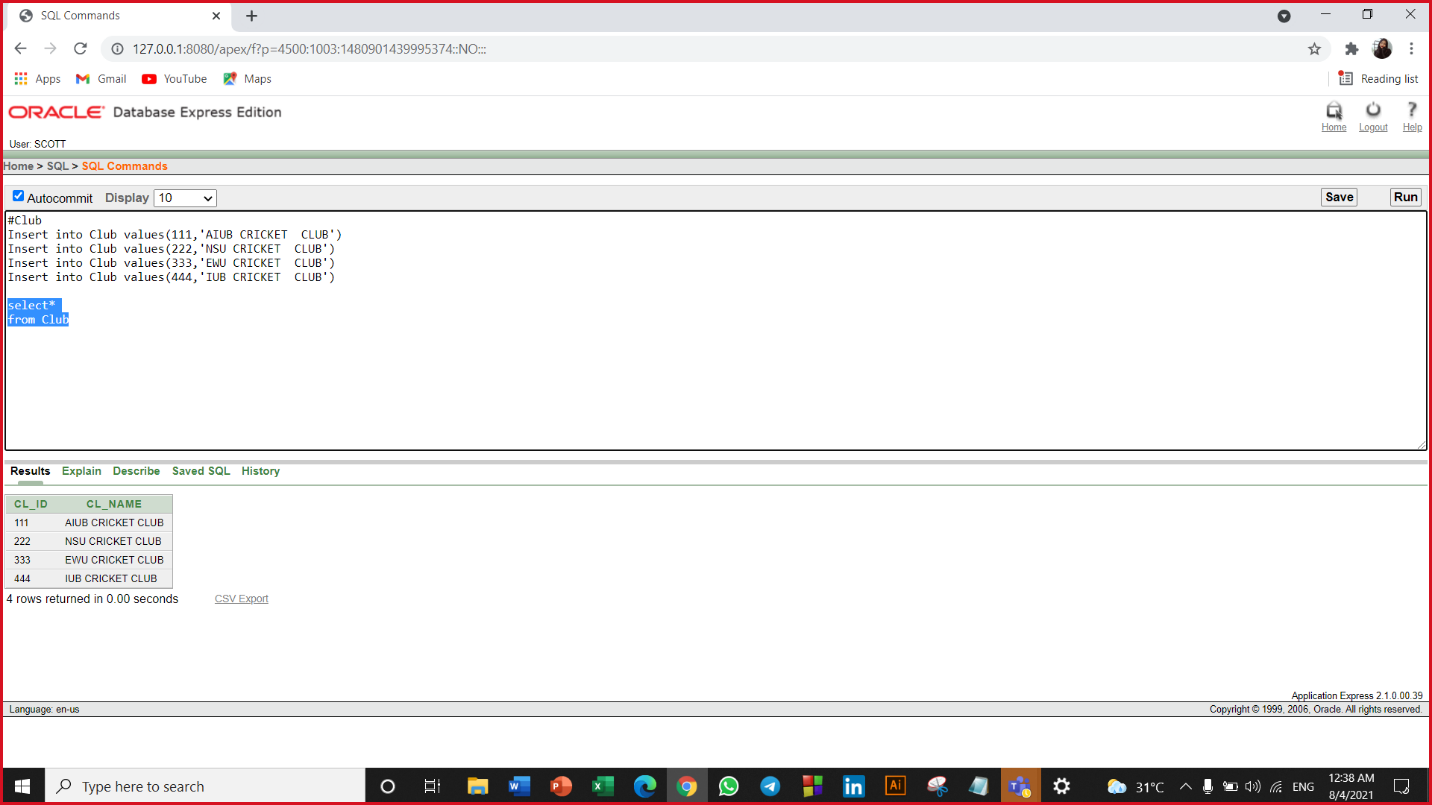
**Table Name: Location**



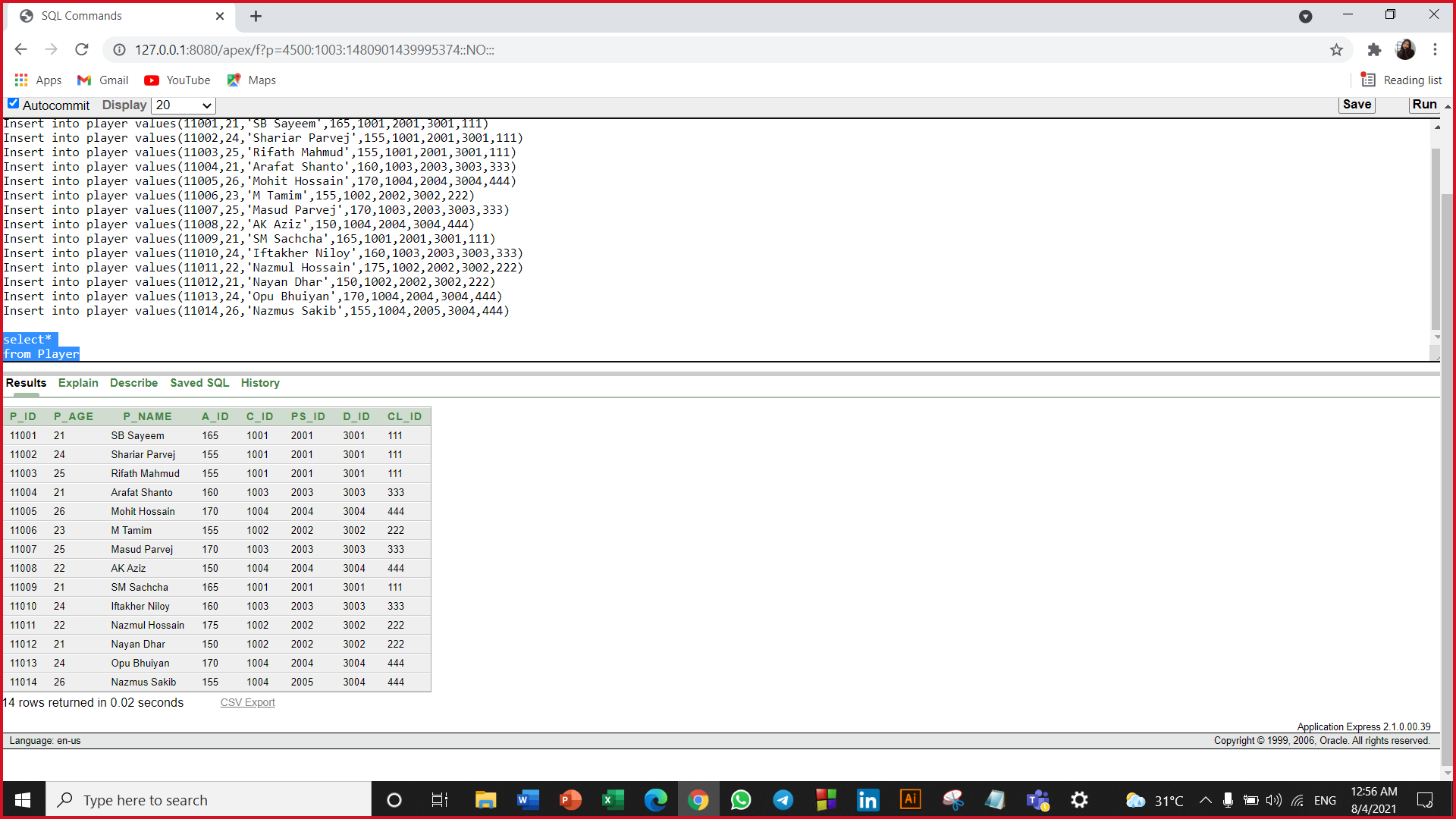
**Table Name: Doctor**



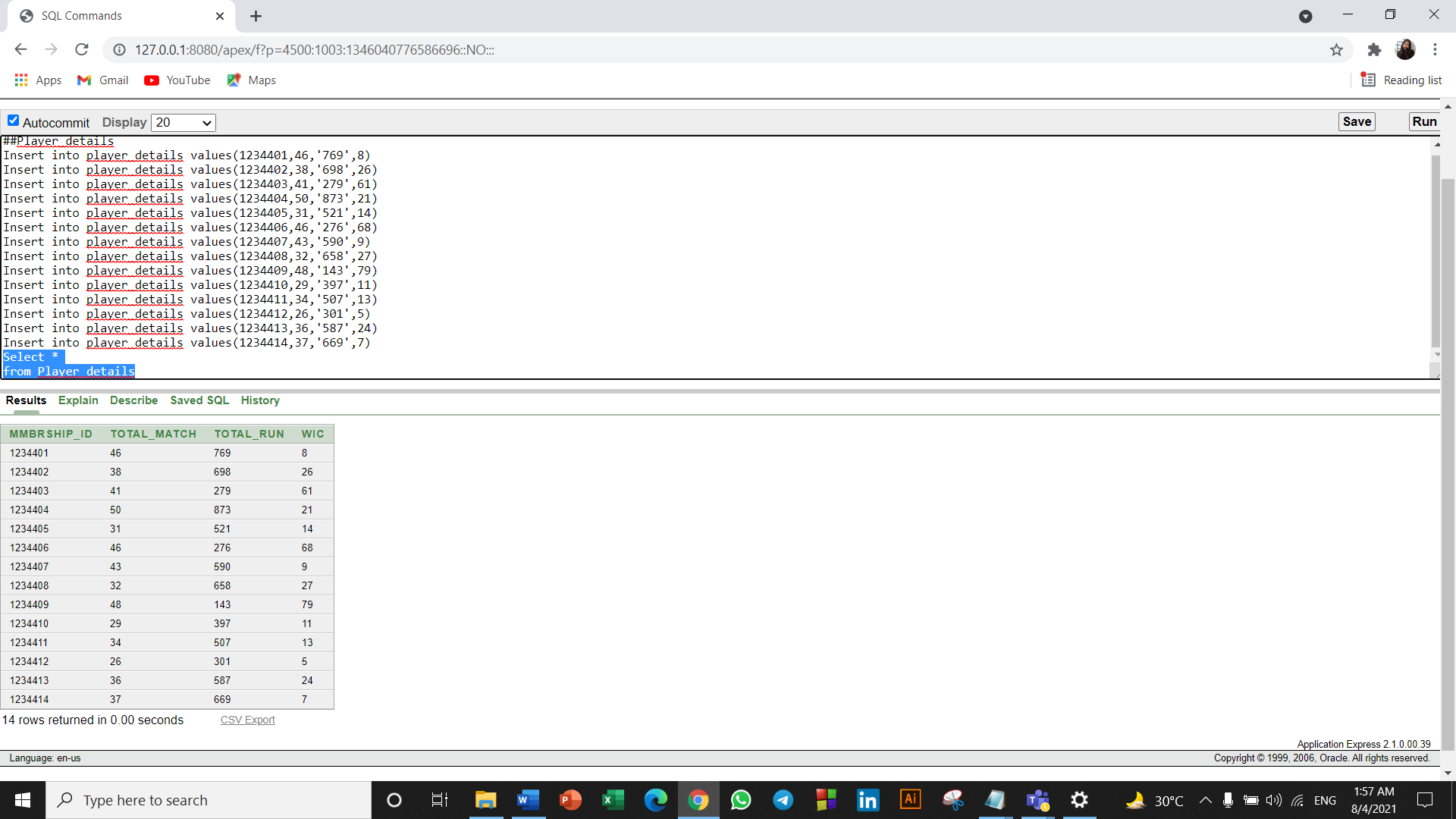
**Table Name: Club**



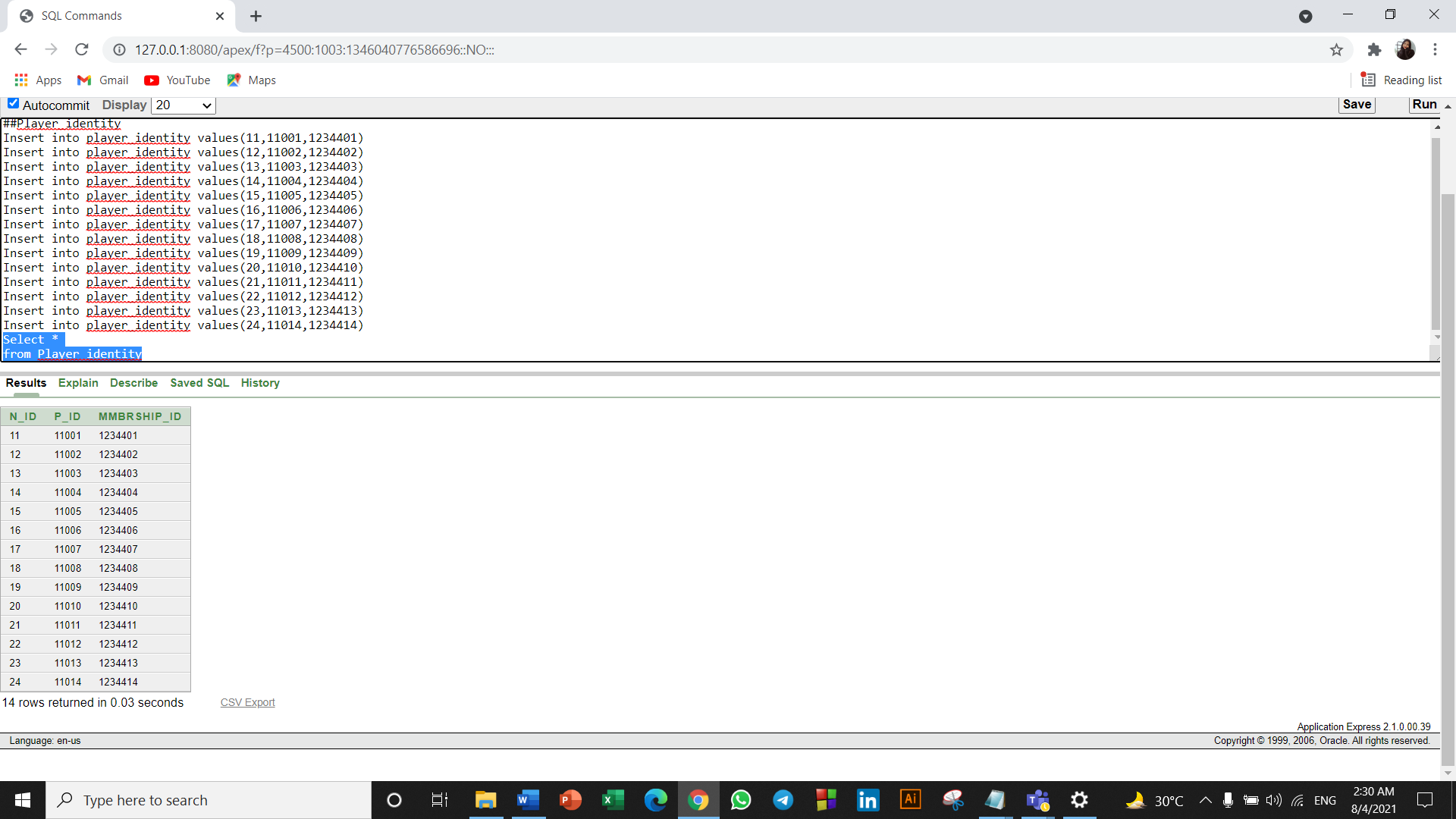
**Table Name: Player**



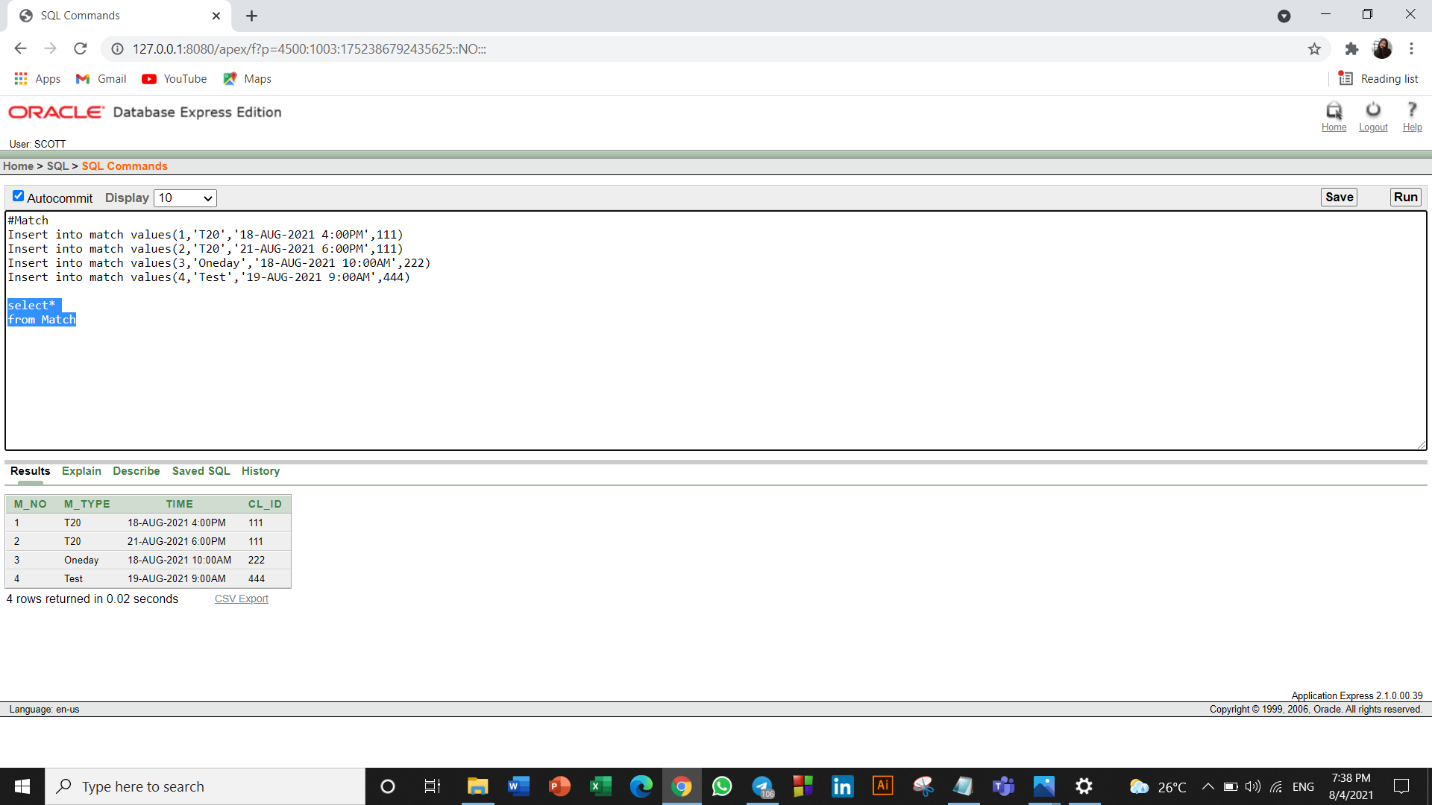
**Table Name: Player details**



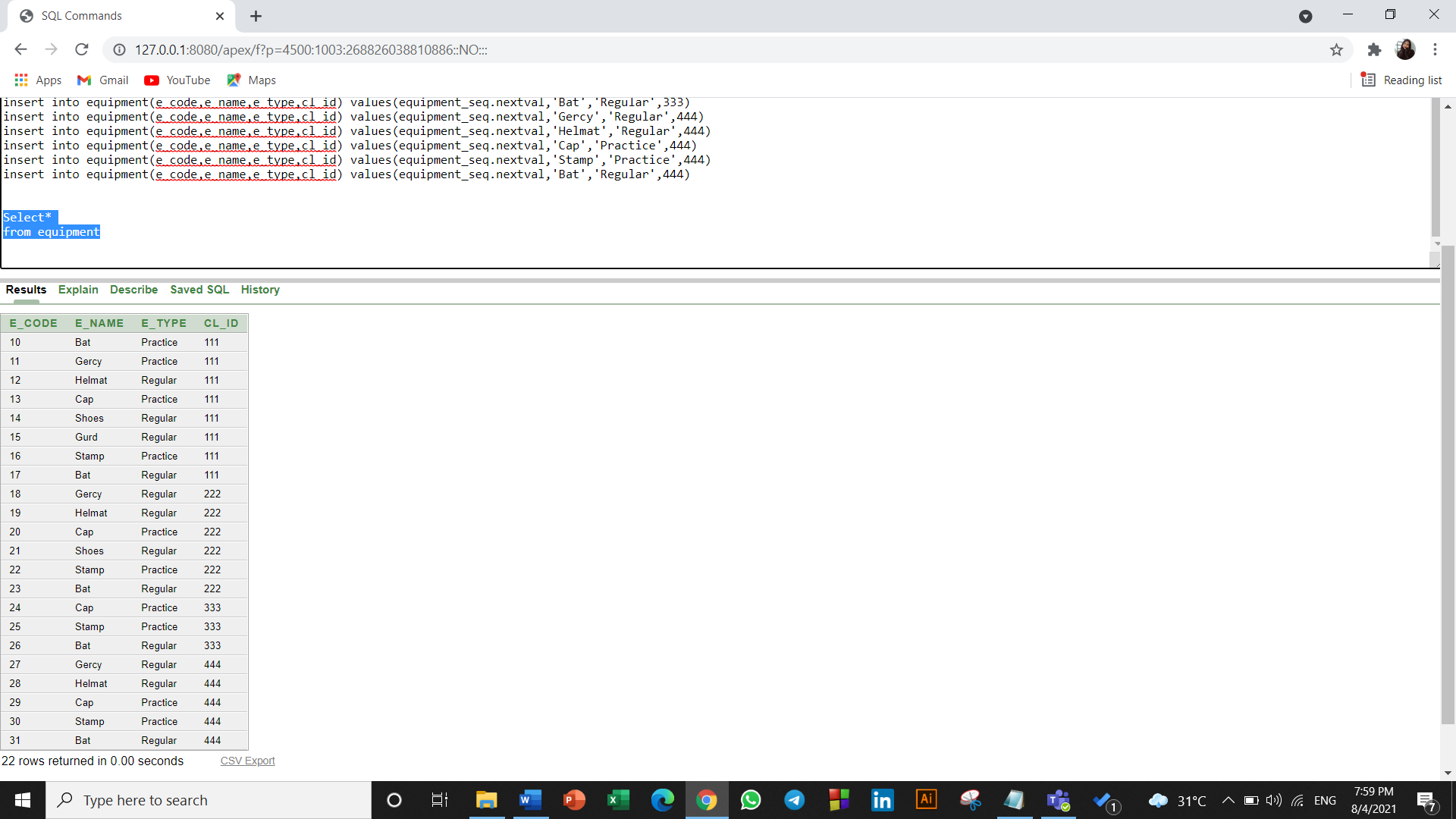
**Table Name: Player\_Identity**



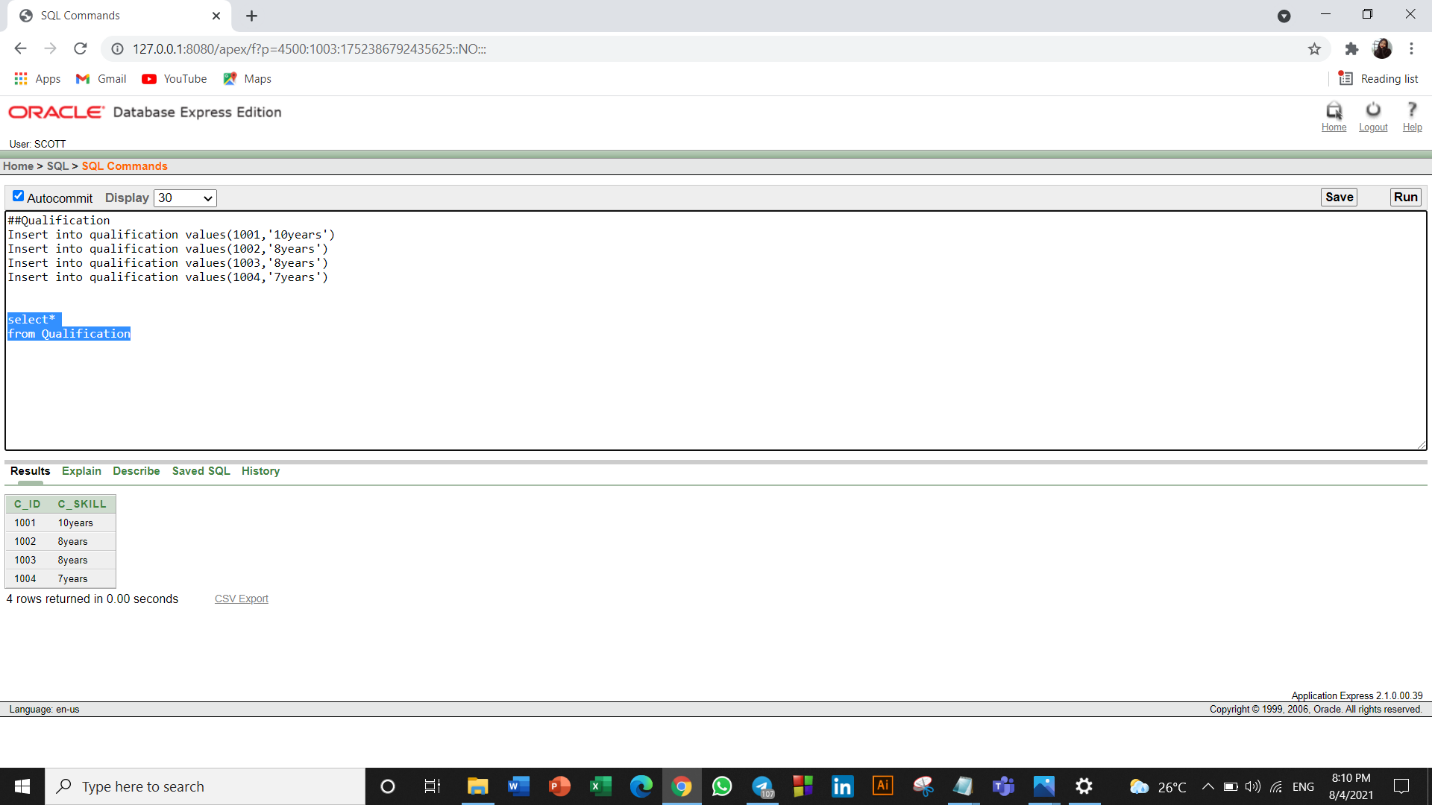
**Table Name: Match**



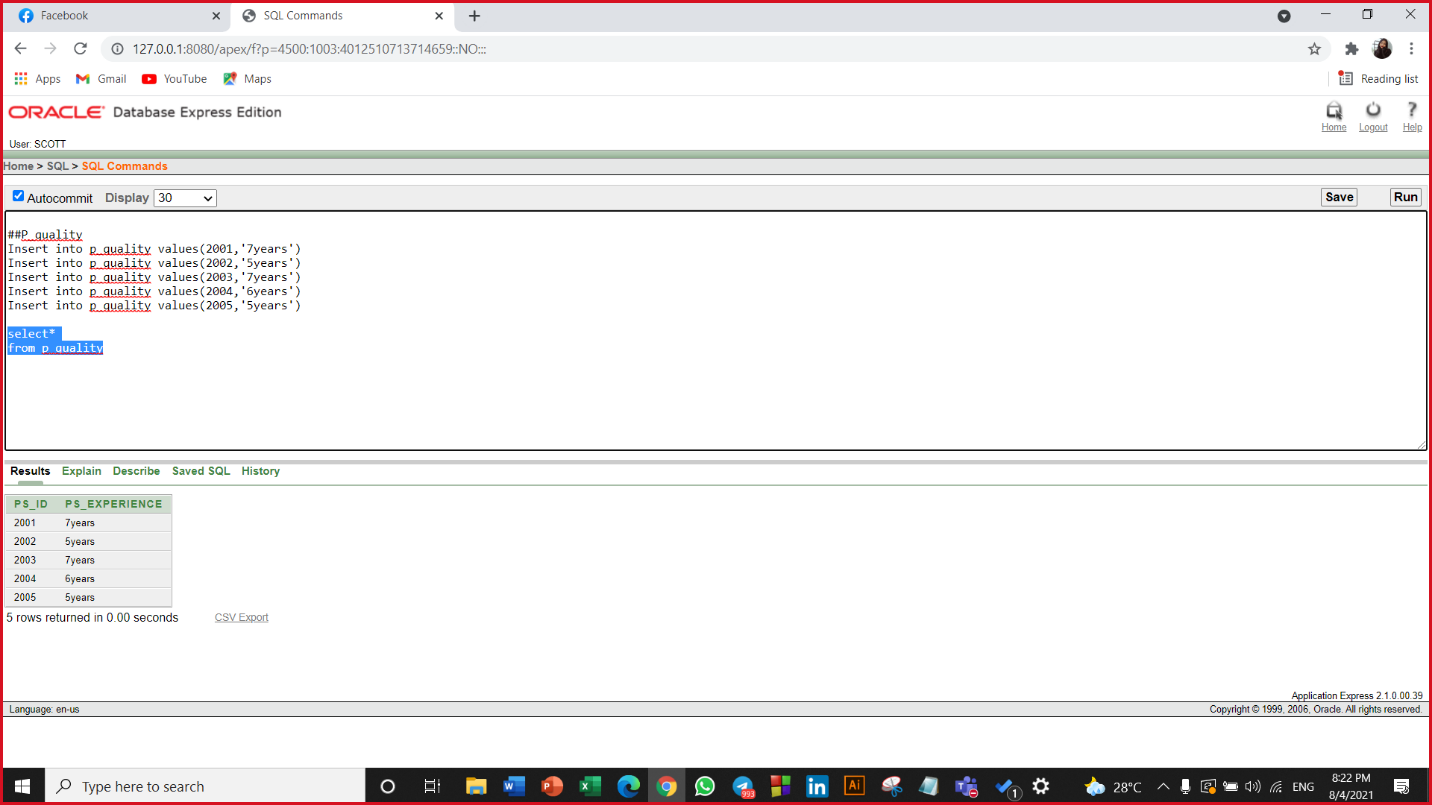
**Table Name: Equipment**



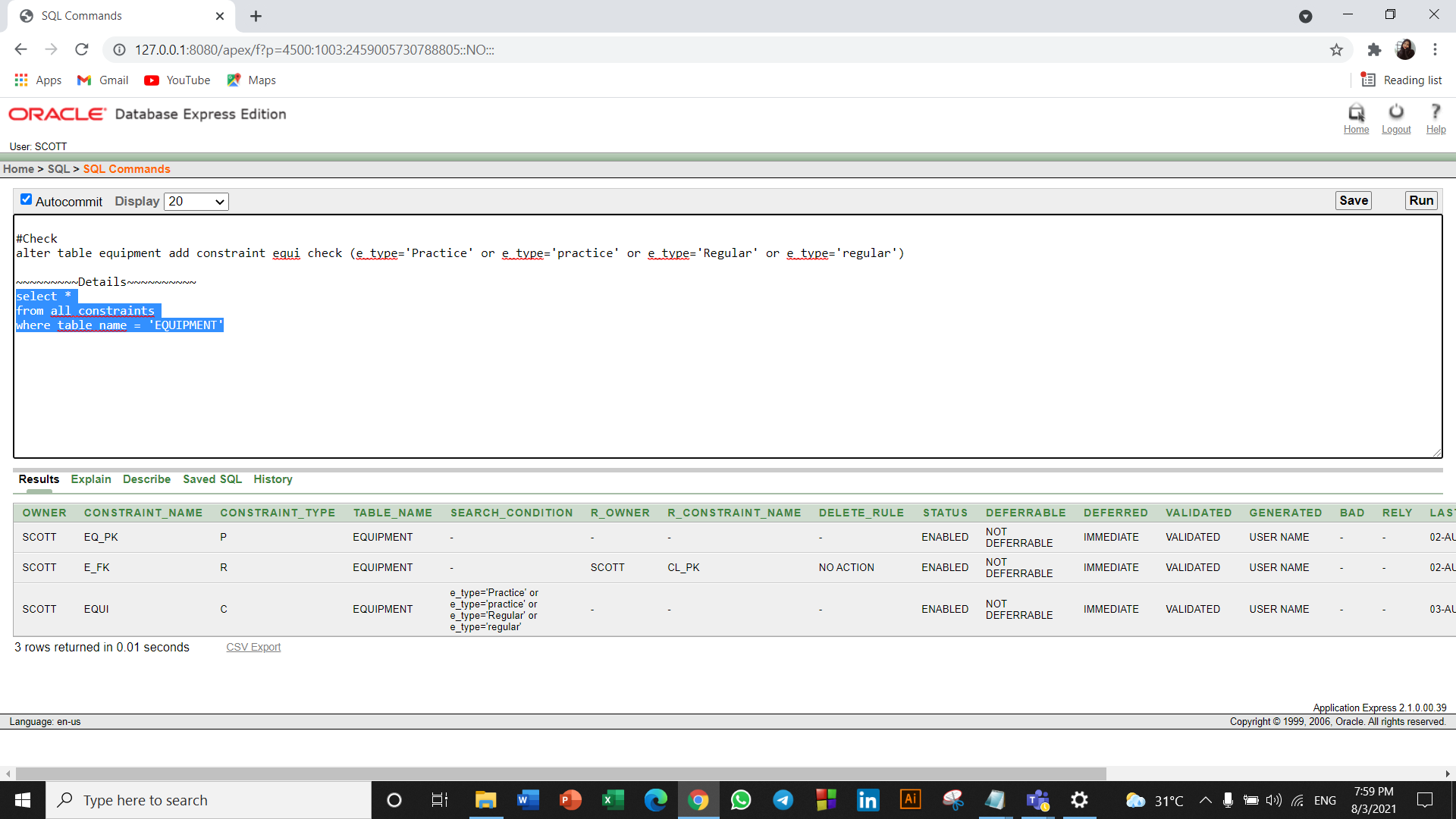
**Table Name: Qualification**

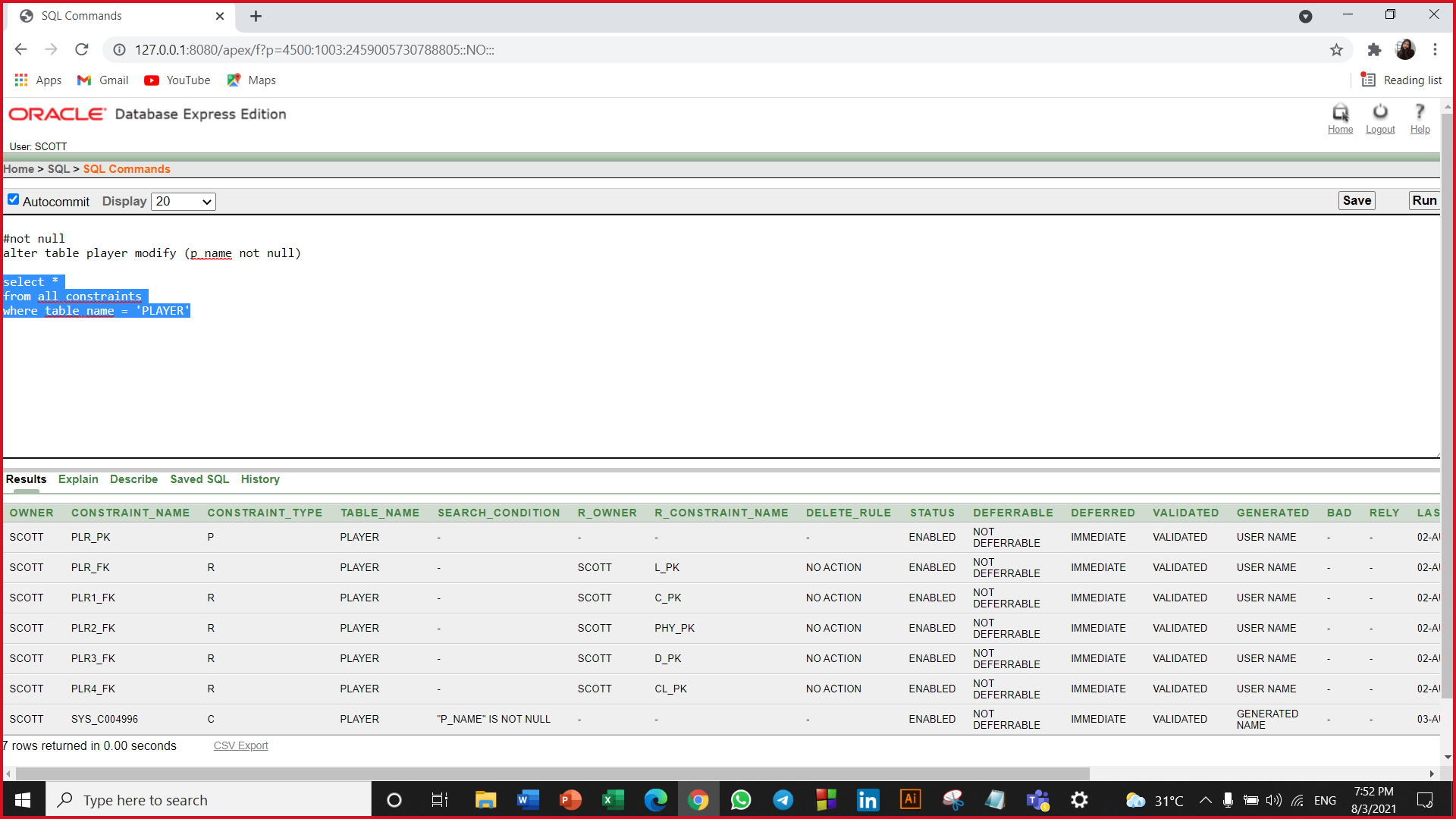


**Table Name: P\_Quality**



**CONSTRAINT**





**QUESTIONS:**

**##Sub\_Query**

**Q1:** Write a query to display the player id, name for all players whose are under the physician id 2004.

**Q2:** Create a query to display the player name and age whose age is less than 24 of all players. Sort the results on age from lowest to highest.

**##Join**

**Q3:** Write a query in SQL to display name & ID for player and doctor.

**Q4:** Write a query in SQL to display the id, name, phone and experience from physician and p\_quality.

**##Function**

**Q5:** write a query to display doctor id, name, name length and concate name and id

**Q6:** Display the total equipment from equipment table, where club id is 333.

**Q7:** Write a query to display maximum average age of the players.

**##Sequence**

**Q8:** Alter the sequence increment by 2 & make the sequence cycle & min value is 20 and max value is 110.

**##Constraint**

**Q9:** Create and display the phone from physician table is unique.

**##View**

**Q10:** Create a view called Match\_details based on the cl\_id, m\_type and time

from the MATCH table. Change the heading for the TIME to DATE\_AND\_TIME.