

PRACTICAL ASSIGNMENT – II

Department: Computer Engineering & Applications
Course: B.Tech. (CSE)
Subject: Database Management System Lab (CSE3083)
Year: 2nd **Semester:** 3rd



Name: Bhupendra

Roll NO.: 21(G1)

1. Create the following tables and specify constraints at the time of creation.

Department:

```
1 CREATE TABLE Department
2 (
3     Deptno NUMBER(3) primary key,
4     Dname VARCHAR2(20) unique,
5     Location VARCHAR(20) not null check (Location in ('Delhi', 'Pune', 'Agra'))
6 );
```

Table created.

2023 Oracle - Live SQL 23.3.3, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 - Database Documentation - Ask Tom - Dev Gym
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30°C Heavy rain 16:20 16-09-2023

Employee:

The screenshot shows a web browser window with the URL `livesql.oracle.com/apex/f?p=590:1:103528479719135::93::&success_msg=MSBkYXRhYmFzZSBvYmplY3RzIGhhdmUgYmVibikcm9wcGVkLiAgU2Vzc2hvb2BoaXN0b3J5IGhh...`. The page title is "SQL Worksheet" and the "Live SQL" button is visible. The SQL code in the editor is:

```
1 CREATE TABLE Employee
2 (
3   Empno VARCHAR2(5) PRIMARY KEY CHECK (Empno LIKE 'E%'),
4   Ename VARCHAR2(20) UNIQUE,
5   Designation VARCHAR2 (20) NOT NULL,
6   Salary NUMBER (16) CHECK (Salary BETWEEN 15000 AND 50000),
7   DOB DATE NOT NULL,
8   Dno NUMBER(3),
9   FOREIGN KEY (Dno) REFERENCES Department
10 );
```

Below the code editor, the message "Table created." is displayed. The footer of the page indicates "2023 Oracle - Live SQL 23.3.3, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 - Database Documentation - Ask Tom - Dev Gym" and "Built with using Oracle APEX - Privacy - Terms of Use". The system tray at the bottom shows a temperature of 30°C, heavy rain, and the time 16:28 on 16-09-2023.

Candidate

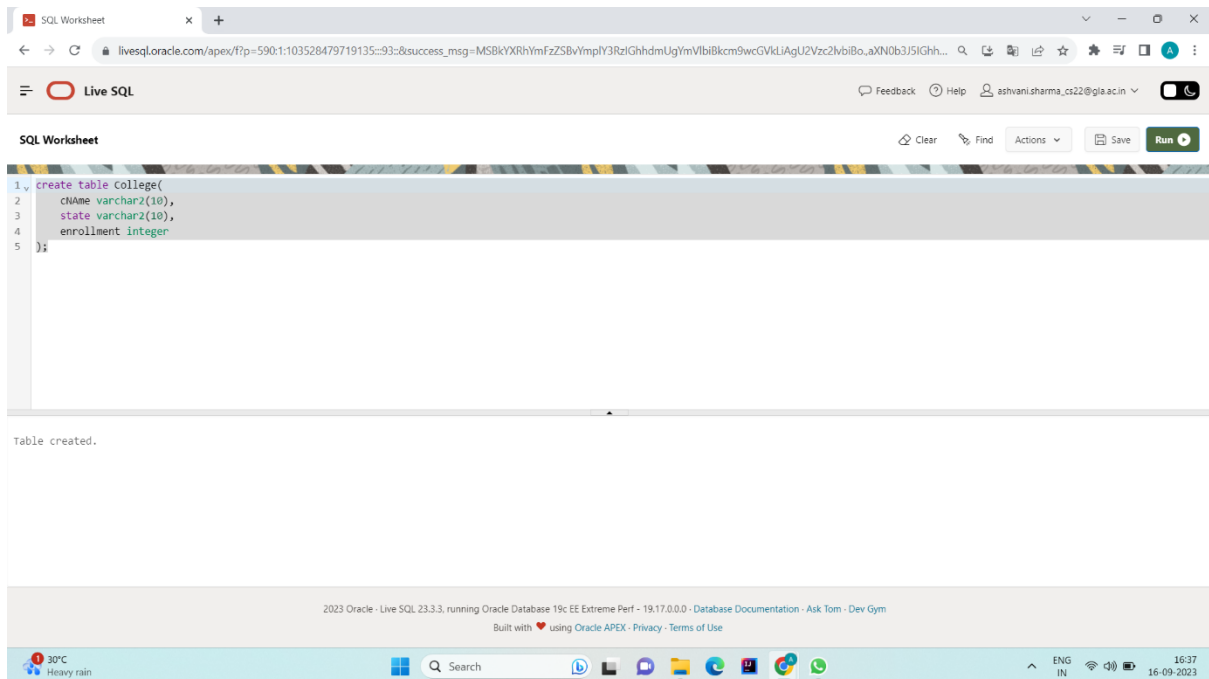
The screenshot shows the same web browser window as above, but with the SQL code for creating a Candidate table:

```
1 CREATE TABLE Candidate
2 (
3   Candidate_ID NUMBER(6) PRIMARY KEY,
4   Candidate_Name VARCHAR2(20) NOT NULL,
5   Candidate_Email VARCHAR(30) UNIQUE CHECK( Candidate_Email LIKE '%@%._'),
6   Candidate_Dept VARCHAR(2) DEFAULT 'HR',
7   Manager_ID NUMBER(30) REFERENCES Candidate)
8 );
```

The message "Table created." is again displayed below the code. The footer and system tray information are identical to the previous screenshot, showing the time as 16:33 on 16-09-2023.

2.Create the Schemas as Specifies above without specifying any constraints.

College:

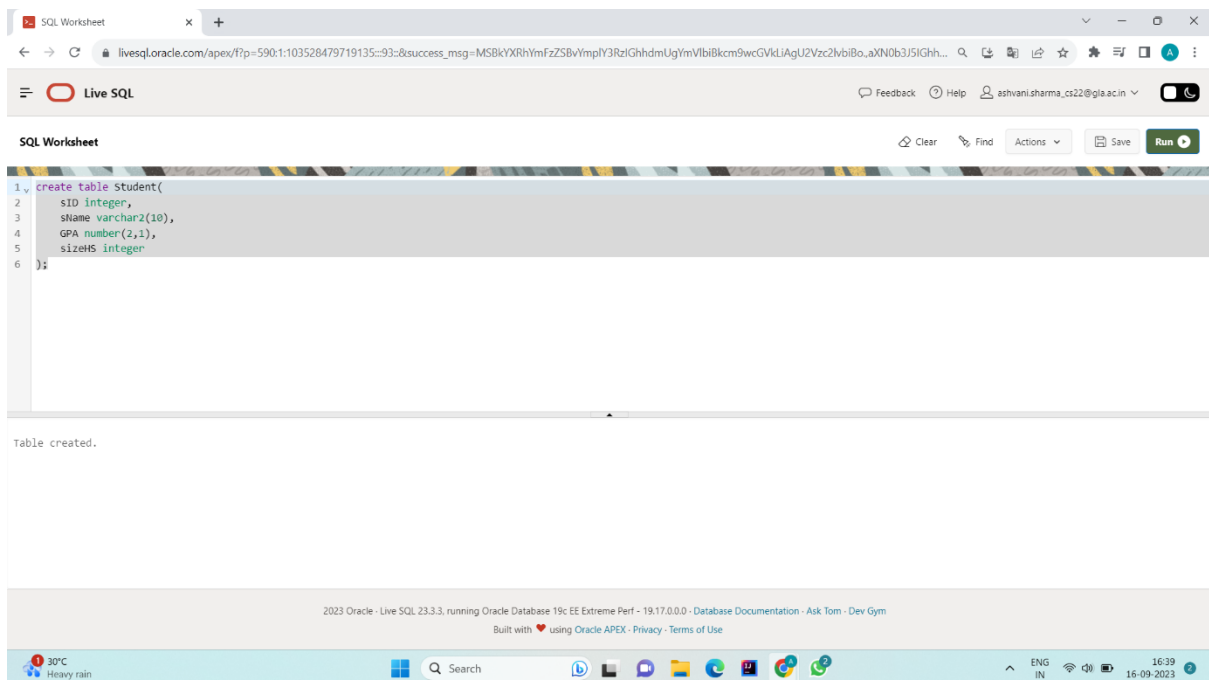


The screenshot shows a web browser window with the URL `livesql.oracle.com/apex/f?p=590:1:103528479719135::93::&success_msg=MSBkYXRhYmFzZSBvYmplY3RlZGhldmUgYmVibikcm9wcGVkLiAgU2Vzc2hvb2Bo,aXN0b3JlIGhh...`. The page title is "SQL Worksheet". The "Live SQL" logo is visible. The "SQL Worksheet" section shows the following SQL code:

```
1 create table College(  
2   cName varchar2(10),  
3   state varchar2(10),  
4   enrollment integer  
5 );
```

Below the code, the message "Table created." is displayed. The footer of the page indicates "2023 Oracle - Live SQL 23.3.3, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 - Database Documentation - Ask Tom - Dev Gym" and "Built with using Oracle APEX - Privacy - Terms of Use". The system tray at the bottom shows a temperature of 30°C, heavy rain, and the time 16:37 on 16-09-2023.

Student:



The screenshot shows a web browser window with the URL `livesql.oracle.com/apex/f?p=590:1:103528479719135::93::&success_msg=MSBkYXRhYmFzZSBvYmplY3RlZGhldmUgYmVibikcm9wcGVkLiAgU2Vzc2hvb2Bo,aXN0b3JlIGhh...`. The page title is "SQL Worksheet". The "Live SQL" logo is visible. The "SQL Worksheet" section shows the following SQL code:

```
1 create table Student(  
2   sID integer,  
3   sName varchar2(10),  
4   GPA number(2,1),  
5   sizeHS integer  
6 );
```

Below the code, the message "Table created." is displayed. The footer of the page indicates "2023 Oracle - Live SQL 23.3.3, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 - Database Documentation - Ask Tom - Dev Gym" and "Built with using Oracle APEX - Privacy - Terms of Use". The system tray at the bottom shows a temperature of 30°C, heavy rain, and the time 16:39 on 16-09-2023.

Apply:

The screenshot shows the Oracle Live SQL web interface. The browser address bar displays the URL: `livesql.oracle.com/apex/f?p=590:1:103528479719135:93::&success_msg=MSBkYXRhYmFzZS8vYmplY3RzRzGhdmUgYmVlbiBkcm9wcGVkLjAgU2VzC2IvbiBo.aXN0b3J5IGhh...`. The page title is "SQL Worksheet". The interface includes a top navigation bar with "Live SQL" and a user profile "ashvani.sharma_cs22@glia.ac.in". Below the navigation bar, the page is titled "SQL Worksheet" with buttons for "Clear", "Find", "Actions", "Save", and a "Run" button. The SQL editor contains the following code:

```
1 v create table Apply(
2   sid integer,
3   cname varchar2(15),
4   major varchar2(10)
5 );
```

Below the editor, the output area displays the message: "Table created." At the bottom of the page, a status bar indicates: "2023 Oracle - Live SQL 23.3.3, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 - Database Documentation - Ask Tom - Dev Gym". The footer also includes the text: "Built with ❤️ using Oracle APEX - Privacy - Terms of Use". The Windows taskbar at the bottom shows the date and time as "16-09-2023 16:41" and the weather as "30°C Heavy rain".

EXERCISE:

Q1. Add cName as Primary key in College.

The screenshot shows the Live SQL web application interface. The browser address bar displays the URL: `livesql.oracle.com/apex/f?p=590:1:103528479719135::93::&success_msg=MSBkYXRhYmFzSBVYmplY3RzIGhhdmUgYmVibikcm9wcGVkLiAgU2Vzc2kvb2kbo...aXN0b3J5IGhh...`. The page header includes the "Live SQL" logo, a "Feedback" link, a "Help" link, a user profile "ashvani.sharma_cs22@glia.ac.in", and a dark mode toggle. The "SQL Worksheet" section contains two lines of SQL code: `1. alter table college` and `2. add primary key(cName);`. Below the code editor, a message states "Table altered.". The footer of the application provides version information: "2023 Oracle - Live SQL 23.3.3, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 - Database Documentation - Ask Tom - Dev Gym" and mentions it is "Built with using Oracle APEX - Privacy - Terms of Use". The bottom status bar shows a weather widget for "30°C Heavy rain", a Windows search bar, and system icons for language (ENG IN), network, and time (16:42, 16-09-2023).

Q2. Add sID as primary key in Student.

The screenshot shows the Live SQL web application interface. The browser address bar displays the URL: `livesql.oracle.com/apex/f?p=590:1:103528479719135::93::&success_msg=MSBkYXRhYmFzSBVYmplY3RzIGhhdmUgYmVibikcm9wcGVkLiAgU2Vzc2kvb2kbo...aXN0b3J5IGhh...`. The page header includes the "Live SQL" logo, a "Feedback" link, a "Help" link, a user profile "ashvani.sharma_cs22@glia.ac.in", and a dark mode toggle. The "SQL Worksheet" section contains two lines of SQL code: `1. alter table student` and `2. add primary key(sID);`. Below the code editor, a message states "Table altered.". The footer of the application provides version information: "2023 Oracle - Live SQL 23.3.3, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 - Database Documentation - Ask Tom - Dev Gym" and mentions it is "Built with using Oracle APEX - Privacy - Terms of Use". The bottom status bar shows a weather widget for "30°C Heavy rain", a Windows search bar, and system icons for language (ENG IN), network, and time (16:43, 16-09-2023).

Q3. Add sID, cName, major as primary key in Apply.

The screenshot shows a web browser window with the URL `livesql.oracle.com/apex/f?p=590:1:103528479719135::93::8:success_msg=MSBkYXRhYmFzZSBvYmplY3RzIGhhdmUgYmVlbiBkcm9wcGVkdjAgU2Vzc2kvb2biBo,aXN0b3JlIGhh...`. The page title is "SQL Worksheet" and the Live SQL logo is visible. The SQL Worksheet area contains the following code:

```
1 alter table Apply
2 add primary key(sID, cName, major);
```

Below the code editor, the message "Table altered." is displayed. At the bottom of the page, a status bar indicates "2023 Oracle - Live SQL 23.3.3, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 - Database Documentation - Ask Tom - Dev Gym". The bottom of the browser window shows a Windows taskbar with a search bar and various application icons.

Q4. Make sID in Apply foreign key referring table student and cName referring table college.

The screenshot shows the same web browser window as in the previous image. The SQL Worksheet area contains the following code:

```
1 alter table Apply
2 add foreign key (sID) references Student;
```

Below the code editor, the message "Table altered." is displayed. At the bottom of the page, a status bar indicates "2023 Oracle - Live SQL 23.3.3, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 - Database Documentation - Ask Tom - Dev Gym". The bottom of the browser window shows a Windows taskbar with a search bar and various application icons.

SQL Worksheet

livesql.oracle.com/apex/f?p=590:1:103526479719135::93::&success_msg=MSBkYXRhYmFzZSBvYmplY3RzIGhhdmUgYmVibikcm9wcGVkdjAgU2Vzc2kvb2BoaXN0b3J5IGhh...

Live SQL

Feedback Help ashvani.sharma_cs22@gia.ac.in

SQL Worksheet

Clear Find Actions Save Run

```
1 alter table Apply
2 add foreign key (cName) references college;
```

Table altered.

2023 Oracle - Live SQL 23.3.3, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 - Database Documentation - Ask Tom - Dev Gym
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30°C
Heavy rain

Search

ENG
IN

16:54
16-09-2023

Q5. Increase data type size of major from 20 to 25.

The screenshot shows the Oracle Live SQL interface. The SQL Worksheet contains the following code:

```
1 alter table Apply
2 modify (major varchar2(25));
```

The output area displays the message: "Table altered."

The footer of the interface indicates: "2023 Oracle - Live SQL 23.3.3, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 - Database Documentation - Ask Tom - Dev Gym".

Q6. Add a new column decision in the Apply table keeping a constraint of not null for this column with data type varchar2(3).

The screenshot shows the Oracle Live SQL interface. The SQL Worksheet contains the following code:

```
1 alter table Apply
2 add (decision varchar2(3) not null);
```

The output area displays the message: "Table altered."

The footer of the interface indicates: "2023 Oracle - Live SQL 23.3.3, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 - Database Documentation - Ask Tom - Dev Gym".

Q7. Change data type of decision in Apply to char(1).

The screenshot shows the Oracle Live SQL interface. The SQL Worksheet contains the following code:

```
1 alter table Apply
2 modify (decision char(1));
```

The output area displays the message: "Table altered."

The footer indicates: "2023 Oracle - Live SQL 23.3.3, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 - Database Documentation - Ask Tom - Dev Gym. Built with using Oracle APEX - Privacy - Terms of Use". The system tray shows a temperature of 30°C, heavy rain, and the date 16-09-2023.

Q8. Drop foreign key on column name cName from Apply table.

The screenshot shows the Oracle Live SQL interface. The SQL Worksheet contains the following code:

```
1 alter table Apply
2 drop constraint cName;
```

The output area displays the message: "Table altered."

The footer indicates: "2023 Oracle - Live SQL 23.3.3, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 - Database Documentation - Ask Tom - Dev Gym. Built with using Oracle APEX - Privacy - Terms of Use". The system tray shows a temperature of 30°C, heavy rain, and the date 16-09-2023.

Q9. Remove column sizeHS from Student table.

The screenshot shows the SQL Worksheet interface in a web browser. The SQL command entered is:

```
1 alter table Student
2 drop column sizeHS;
```

The output of the command is displayed below the editor:

```
Table altered.
```

The footer of the interface indicates the version and environment: 2023 Oracle - Live SQL 23.3.3, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 - Database Documentation - Ask Tom - Dev Gym. The system status bar at the bottom shows a temperature of 30°C, heavy rain, and the time 17:00 on 16-09-2023.

Q10. Drop primary key from College.

The screenshot shows the SQL Worksheet interface in a web browser. The SQL command entered is:

```
1 alter table college
2 drop primary key;
```

The output of the command is an error message:

```
ORA-02273: this unique/primary key is referenced by some foreign keys
```

Below the error message, a link is provided for more details: <https://docs.oracle.com/error-help/db/ora-02273>.

The footer of the interface indicates the version and environment: 2023 Oracle - Live SQL 23.3.3, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 - Database Documentation - Ask Tom - Dev Gym. The system status bar at the bottom shows a temperature of 30°C, heavy rain, and the time 17:02 on 16-09-2023.

Q11. Make cName, major unique pairwise such as
Stanford CS, Stanford EE.

The screenshot displays the Oracle Live SQL web interface. The browser's address bar shows the URL: `livesql.oracle.com/apex/f?p=590:1:103528479719135::93::&success_msg=MSBkYXRhYmFzZSBvYmplY3RzIGhhdmUgYmVibikcm9wcGVkLiAgU2Vzc2lvbiBoaXN0b3JlIGhh...`. The page header includes the "Live SQL" logo, a "Feedback" link, a "Help" link, a user profile for "ashvani.sharma_cs22@gle.ac.in", and a dark mode toggle. The main content area is titled "SQL Worksheet" and contains two lines of SQL code:

```
1 alter table Apply
2 add constraints UNIQUE_APPLY UNIQUE (cName, major);
```

Below the code editor, a message states "Table altered." The footer of the interface provides technical details: "2023 Oracle - Live SQL 23.3.3, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 - Database Documentation - Ask Tom - Dev Gym" and "Built with using Oracle APEX - Privacy - Terms of Use". The Windows taskbar at the bottom shows the system clock at 17:03 on 16-09-2023, along with weather information (30°C, Heavy rain) and various application icons.

Q12. Add cName as Foreign Key in Apply table referring table College using on delete cascade.

The screenshot shows the SQL Worksheet interface with the following SQL code:

```
1 alter table College
2 add primary key (cname);
```

The execution result displays an error:

ORA-02260: table can have only one primary key

More Details: <https://docs.oracle.com/error-help/db/ora-02260>

The footer indicates: 2023 Oracle - Live SQL 23.3.3, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 - Database Documentation - Ask Tom - Dev Gym. Built with using Oracle APEX - Privacy - Terms of Use. The system tray shows 30°C Heavy rain, a search bar, and the date 16-09-2023.

The screenshot shows the SQL Worksheet interface with the following SQL code:

```
1 alter table Apply
2 add constraint cname foreign key (cname) references college;
```

The execution result displays an error:

ORA-02275: such a referential constraint already exists in the table

More Details: <https://docs.oracle.com/error-help/db/ora-02275>

The footer indicates: 2023 Oracle - Live SQL 23.3.3, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 - Database Documentation - Ask Tom - Dev Gym. Built with using Oracle APEX - Privacy - Terms of Use. The system tray shows 30°C Heavy rain, a search bar, and the date 16-09-2023.

Q13. Modify foreign key on sID in Apply table to foreign key on delete set null.

The screenshot shows the Live SQL interface with the following elements:

- Browser Tab:** SQL Worksheet
- Address Bar:** livesql.oracle.com/apex/f?p=590:1:103528479719135::93::8success_msg=MyBkYXhYmfzZSBvYmplY3RzIGhhdmUgYmVlbiBkcm9wcGVkLiAgU2Vzc2lubiBo...aXN0b3JlGh...
- Header:** Live SQL, Feedback, Help, User: ashvani.sharma_cs22@glia.ac.in
- SQL Worksheet:**

```
1 alter table Apply
2 add constraints sID;
```
- Output:** Table altered.
- Footer:** 2023 Oracle - Live SQL 23.3.3, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 - Database Documentation - Ask Tom - Dev Gym. Built with using Oracle APEX - Privacy - Terms of Use.
- System Tray:** 30°C Heavy rain, Search, and various application icons.

The screenshot shows the Live SQL interface with the following elements:

- Browser Tab:** SQL Worksheet
- Address Bar:** livesql.oracle.com/apex/f?p=590:1:103528479719135::93::8success_msg=MyBkYXhYmfzZSBvYmplY3RzIGhhdmUgYmVlbiBkcm9wcGVkLiAgU2Vzc2lubiBo...aXN0b3JlGh...
- Header:** Live SQL, Feedback, Help, User: ashvani.sharma_cs22@glia.ac.in
- SQL Worksheet:**

```
1 alter table Apply
2 add sID foreign key (sID) references Student on delete set null;
```
- Output:** Table altered.
- Footer:** 2023 Oracle - Live SQL 23.3.3, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 - Database Documentation - Ask Tom - Dev Gym. Built with using Oracle APEX - Privacy - Terms of Use.
- System Tray:** 30°C Heavy rain, Search, and various application icons.

Q14. Rename column enrollment to enroll in College Table.

The screenshot displays the Oracle Live SQL web interface. The browser's address bar shows the URL: `livesql.oracle.com/apex/f?p=590:1:103528479719135::93::8success_msg=MyBkYXhYmFzZSByYmplY3RzIGhhdmUgYmVibikcm9wcGVkLiAgU2VzclVbiBo,aXN0b3J5IGhh...`. The page title is "SQL Worksheet". The "Live SQL" header includes a "Feedback" link, a "Help" link, a user profile for "ashvani.sharma_cs22@glia.ac.in", and a "Run" button. The "SQL Worksheet" section contains two lines of SQL code: `1 alter table College` and `2 rename column enrollment to enroll;`. Below the code editor, a message states "Table altered." The footer of the interface provides system information: "2023 Oracle - Live SQL 23.3.3, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 - Database Documentation - Ask Tom - Dev Gym" and "Built with using Oracle APEX - Privacy - Terms of Use". The bottom of the image shows a Windows taskbar with a search bar, various application icons, and system status indicators for 30°C, heavy rain, and the date 16-09-2023.

```
1 alter table College
2 rename column enrollment to enroll;
```

Table altered.

2023 Oracle - Live SQL 23.3.3, running Oracle Database 19c EE Extreme Perf - 19.17.0.0.0 - Database Documentation - Ask Tom - Dev Gym
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30°C Heavy rain

Search

ENG IN 17:20 16-09-2023