**SCHOOL MANAGEMENT SYSTEM**

**Work bY:**

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**INTRODUCTION**

The education system forms the backbone of every nation. Hence it is important and necessary to provide a strong educational foundation to the young generation to ensure the development of open-minded citizens securing the future for everyone. Advanced technology today can play a crucial role in streamlining the education-related processes to promote solidarity among students, teachers, parents, and the school staff.

**Existing System**

In the current system, we need to keep the number of records related to students and want to enter the marks and records of the students manually. In this system teacher or school, authority views the marks and records of the student and keeps track of the student manually. School authority needs to keep track of all the members of the school including students. This is very time consuming and has a lot of paperwork.

**Need for the System**

In our proposed system, We have the provision for adding the details pf the student. The overhead of the school authorities and teachers becomes less. Another advantage of the system is that it is very easy to edit the details of the student and delete the records if necessary.

**Advantages**

* Fast access to the database
* Fewer errors
* More storage capacity
* Student and faculty friendly
* Cost convenient
* Less manpower

The system will be used for conducting day to day teaching activities such as assigning homework to conduct exams along with management tasks such as checking the fees status of the student, keeping a record of the number of students enrolled in a class and subject. It is not easy to do this process manually because it would become very hectic. Hence it is recommended to automate the process by developing the relevant software as the world is moving from manual working to information and technology era where computerization becomes important in all parts of life.

**Data Requirements**

The school management system has a set of data requirements. The following are the entity types that will be used in our school management system.

1.ADMIN\_DPT:

This entity consists of A\_ID which is unique to each administrator be it a principal or supervisor. The other attributes are Name, Salary, Password, Designation, Qualification, Email, Phone\_no.

2.CLASS:

CLASS as an entity consists of attributes such as Std\_Sec which is unique to each class, Class\_id, Cl\_teacher, Total number of students.

3.TEACHER:

TEACHER as an entity consists of attributes T\_ID which is unique to each teacher, Qualification, Salary, Password, Name, Phone\_number, Class\_taken.

4.EXAM:

EXAM as an entity consists of attributes Exam\_code which is unique to every exam conducted, Exam\_sub, Exam\_date, Exam\_qpaper, Paper\_set.

5.HOMEWORK:

HOMEWORK as an entity consists of HW\_ID which is used to uniquely identify homework given by faculty, Sub\_assign, Teacher\_assign, Due\_date, Numer\_of\_students.

6.EXAM:

EXAM as an entity type consists of Exam\_code as identifying key, Exam\_sub, Exam\_dtae, Exam\_qpaper, Paper\_set.

7.SUBJECT:

SUBJECT entity type has attributes Sub\_code as identifying key, Name, Subteacher, Total\_stu\_enrolled as other attributes.

8.STUDENT:

STUDENT as an entity type consists of attributes such as Roll\_no unique to every student, Section, Name, Class, Password, Fees.

9.PARENT:

PARENT is an entity consisting of attributes such as Bank\_acc which is unique to every parent, name, Phone\_num, Student\_roll\_num.

**Relationships**

* Parent GUARDS Student (1- 1)

Each parent guards only one student and Parent exist only if he has a student in the school. Hence participation of Parent in GUARDS relation is **Total Participation**.(**Total participation of Parent and Partial participation of student in this relationship**)

* Teahcer MONITERS Student(1-N)

Each Teacher takes care of many students in the miniworld.Hence the relationships becomes (1-N) relation ship.(**Partial Participation of Teacher and student in Moniters relationship**)

* Teacher KEEPS Exam (1-1)

Each Teacher has to post only 1 test regarding his subject. So, the relationship is a 1-1 relationship. (**Partial Participation of both Teacher and Exam**)

* Teacher GIVES Homework(1-N)

A Teacher may give may Homeworks regarding his subject. So, the relationship becomes a 1-N relationship. (**Partial Participation of both Teacher and Homework**)

* Teacher SPECIALIZE Subject(1-1)

A Teacher may teach only 1 subject. Hence, the relationship becomes a 1-1 relationship. (**Partial Participation of both Teacher and Subject)**

* Teacher TEACHES Class(1-N)

A Teacher may have many classes in a day. Hence, the relationship is a 1-N relationship. (**Partial Participation of both Teacher and Class**)

* Admin\_dpt MANAGES Class(1-N)

An administrator(Principal or Supervisor) have to manage all the class. Hence, the relationship is a 1-N relationship. (**Partial Participation of both Admin\_dpt and Class)**

* Admin\_dpt SUPERVISES Teacher(1-N)

An administrator(Principal or Supervisor) has to manage all the teachers of the school. Hence, the relationship is a 1-N relationship. (**Partial Participation of both Admin\_dpt and Teacher)**

**Functional Requirements**

**Removal of Data**

There are certain scenarios when the data stored with the School Management System has to be deleted. This could arise from a situation such as a student, faculty, admin leaving his/her job. In such cases, the data stored about the individual must be deleted to prevent unnecessary storage of data and to ensure the security of our data. Scenarios demanding deletion/removal of data are discussed below:

Case 1:

A situation may arise where the number of students enrolled in a given class is less than the expected number, say 10. In such a case, the class of that particular subject is deleted.

Case 2:

If in case a teacher wants to leave school.in such cases, we have to remove his/her account as well as all the data associated with it so that he/she could not further alter the marks or the homework of students.

Case 3:

There are certain situations such as when the students want to leave school. In such cases, we have to remove his/her account as well as all the data associated with it.

Case 4:

If in case a course does not exist anymore i.e. the school no longer offers a particular course then we have to delete all information regarding that subject.

**Modification of Data**

School management system a highly efficient system. Therefore, it has to be updated regularly to maintain the correct set of data. And there are situations where the details of an individual changes

Case 1:

Change of Contact Number In case, a student’s parent has a change of contact number which has been reported. Then, the admin, on request from the user, changes the student’s parent’s number

.

Case 2:

In case the marks entered by a teacher has to be changed then only the particular subject teacher is allowed to change the marks

Case 3:

There could be a case where the question paper is to be changed may be due to a moderation

Case 4:

In case a teacher wishes to change the deadline for homework. This function can only be performed by the subject teacher.

**Selection of Data**

Data retrieval is an operation performed by the system on request by the user or the admin to generate the output which is asked by the user. This could include arithmetic operations such as average or could be simply filtering something out of the database

Case 1:

print out all the students who have secured first division in a particular subject. (first division is marked greater than 95%)

Case 2:

Similarly, we can search for the admins who own an engineering degree.

Case 3:

our System can print the fee status of a student which could be paid. This would be highly helpful in knowing the students whose fees are still pending.

Case 4:

Similarly, we can also find students who have paid the fees.

Case 5:

Print students who have received more than 40 in one or more subjects.

Case 6:

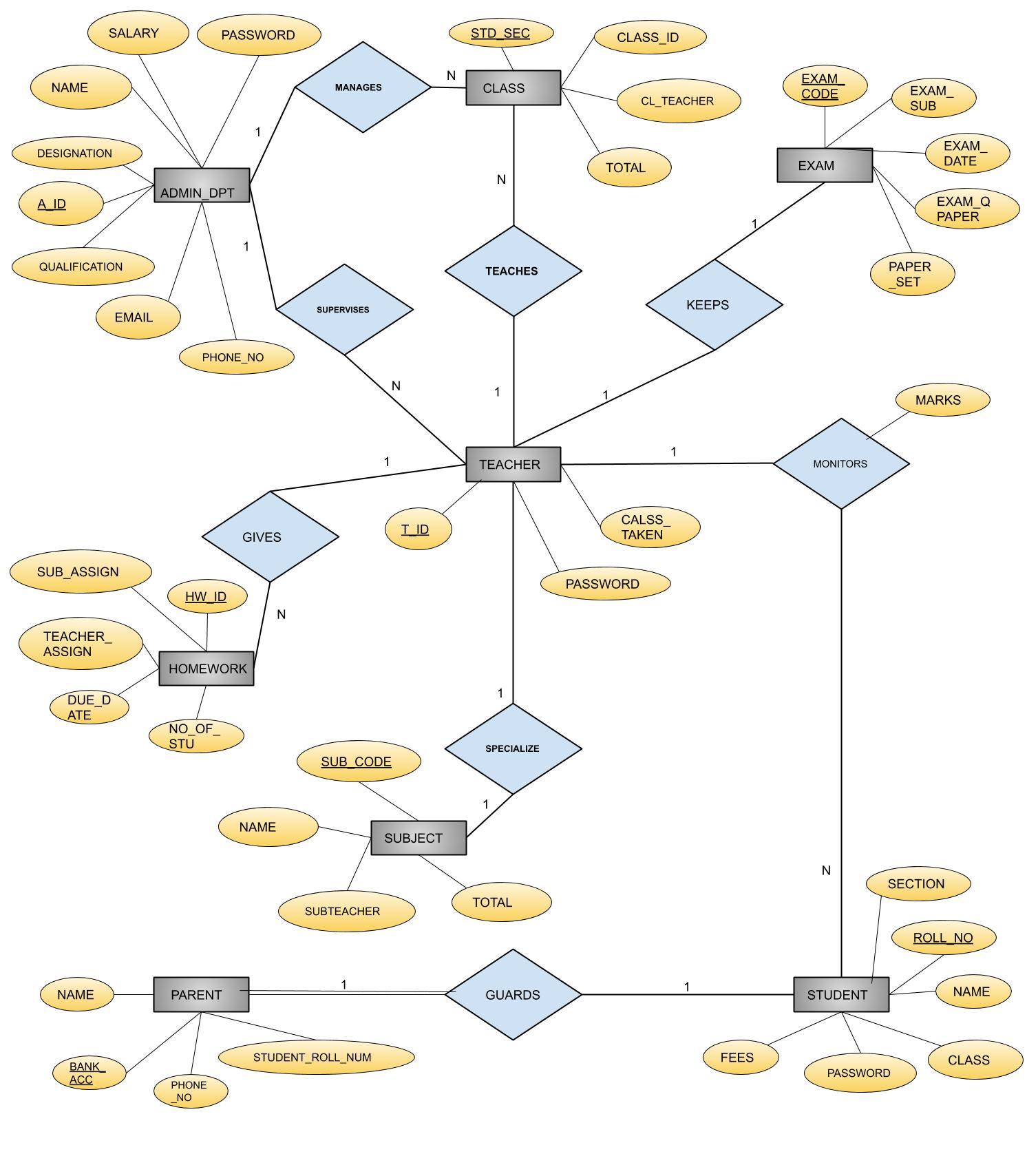
using teacher id we could see permanent teachers in the school

Case 7:

Teachers supervised by a specific coordinator

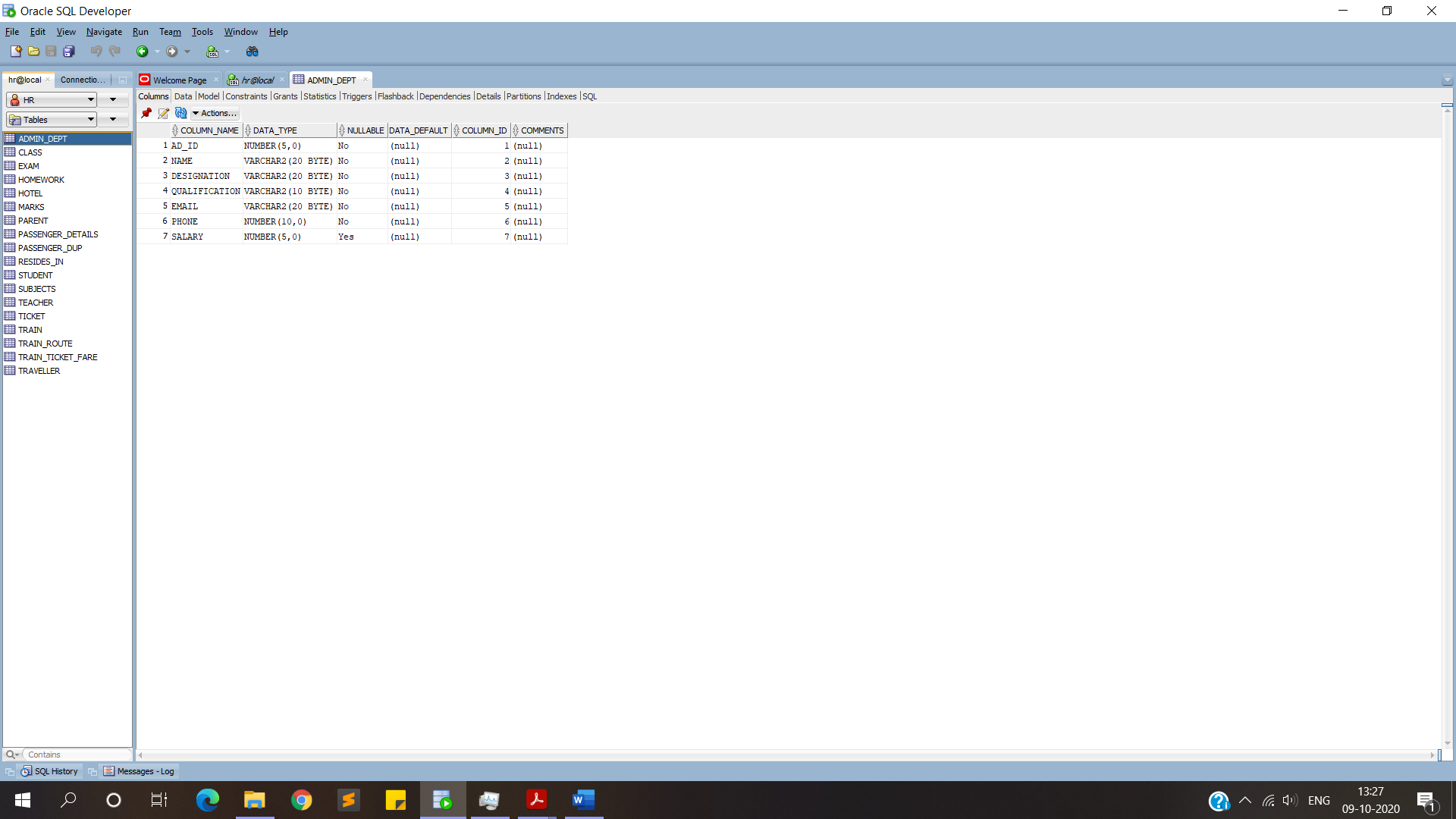
Case 8:

We can find/filter the teachers who own a Doctorate.

**ER DIAGRAM**

**CREATION OF TABLES**

**‘Admin\_dpt’:**

****

**CODE:**

**create table Admin\_Dept(**

**AD\_ID number(5) constraint admin\_pk primary key,**

**NAME varchar(20) not null,**

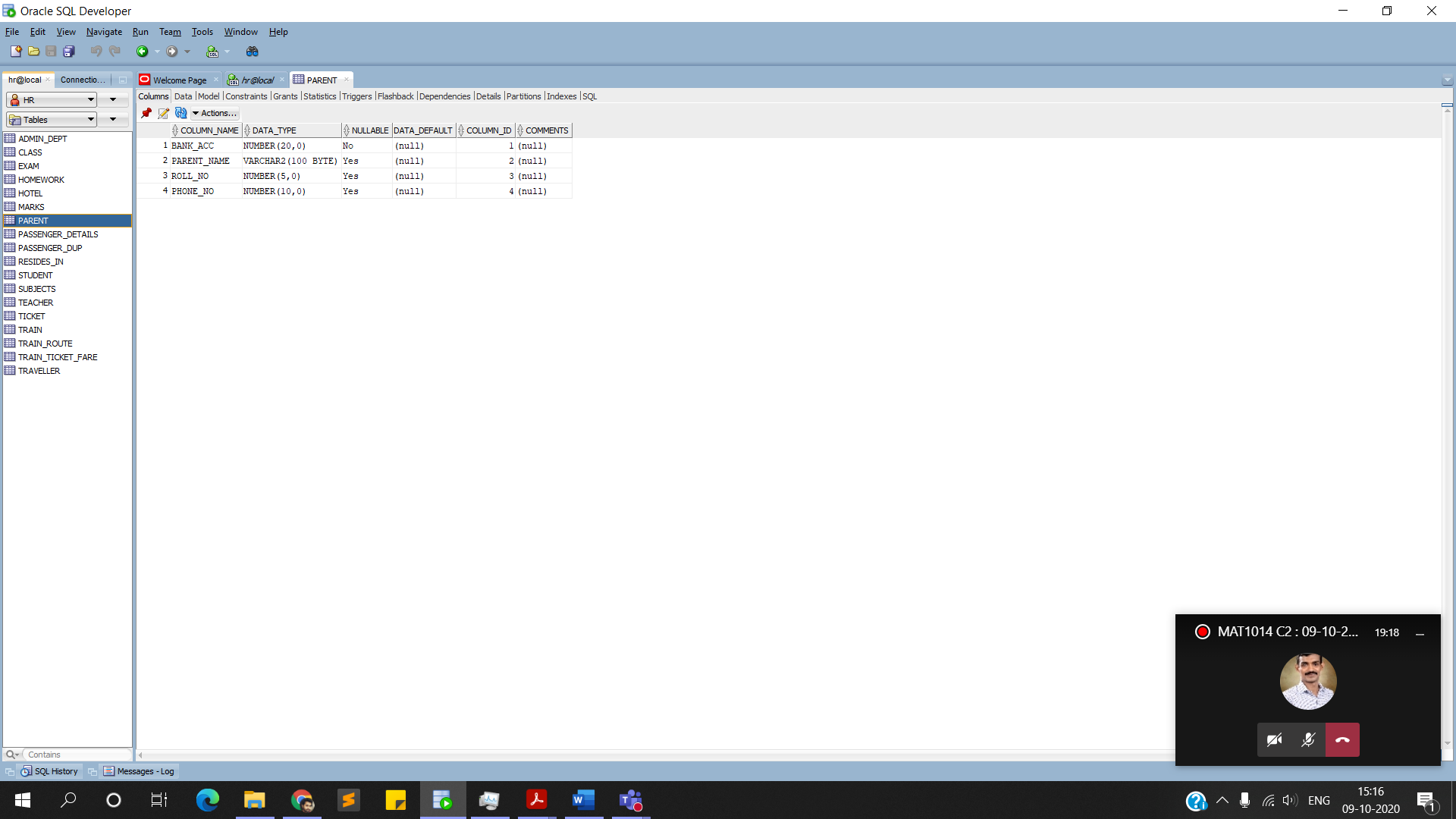
**Designation varchar(20) not null,**

**qualification varchar(10) not null,**

**email varchar(20) not null,**

**phone number(10) not null,**

**salary number(5));**

**‘Parent’:**

**CODE:**

**Create table parent(**

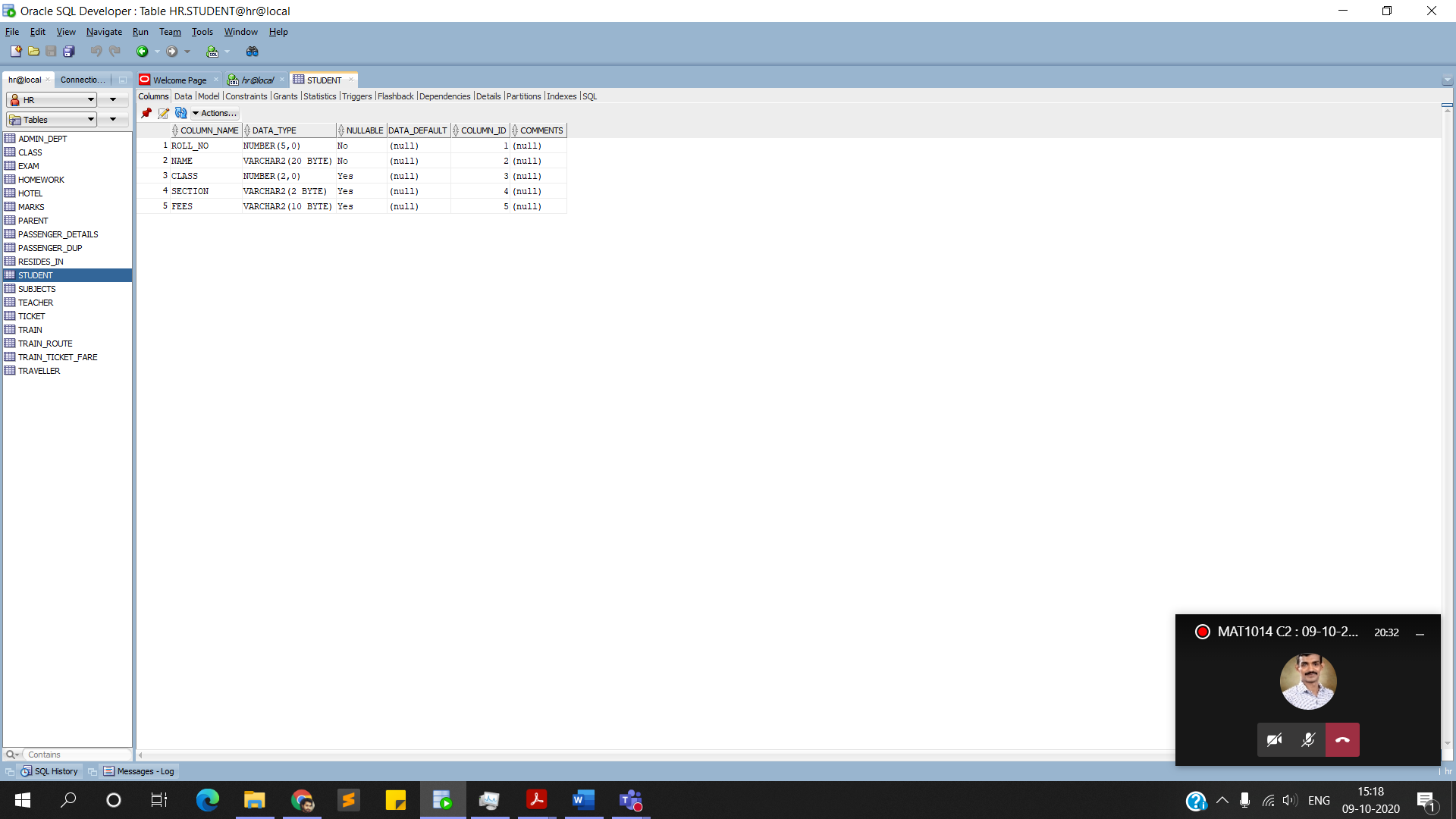
**Bank\_acc number(20) constraint pr\_pk primary key,**

**Parent\_name varchar(100),**

**Roll\_No number(5),**

**Phone\_No number(10),**

**Constraint pr\_fk foreign key(Roll\_No) references student(Roll\_No));**

**‘Student’:**

**CODE:**

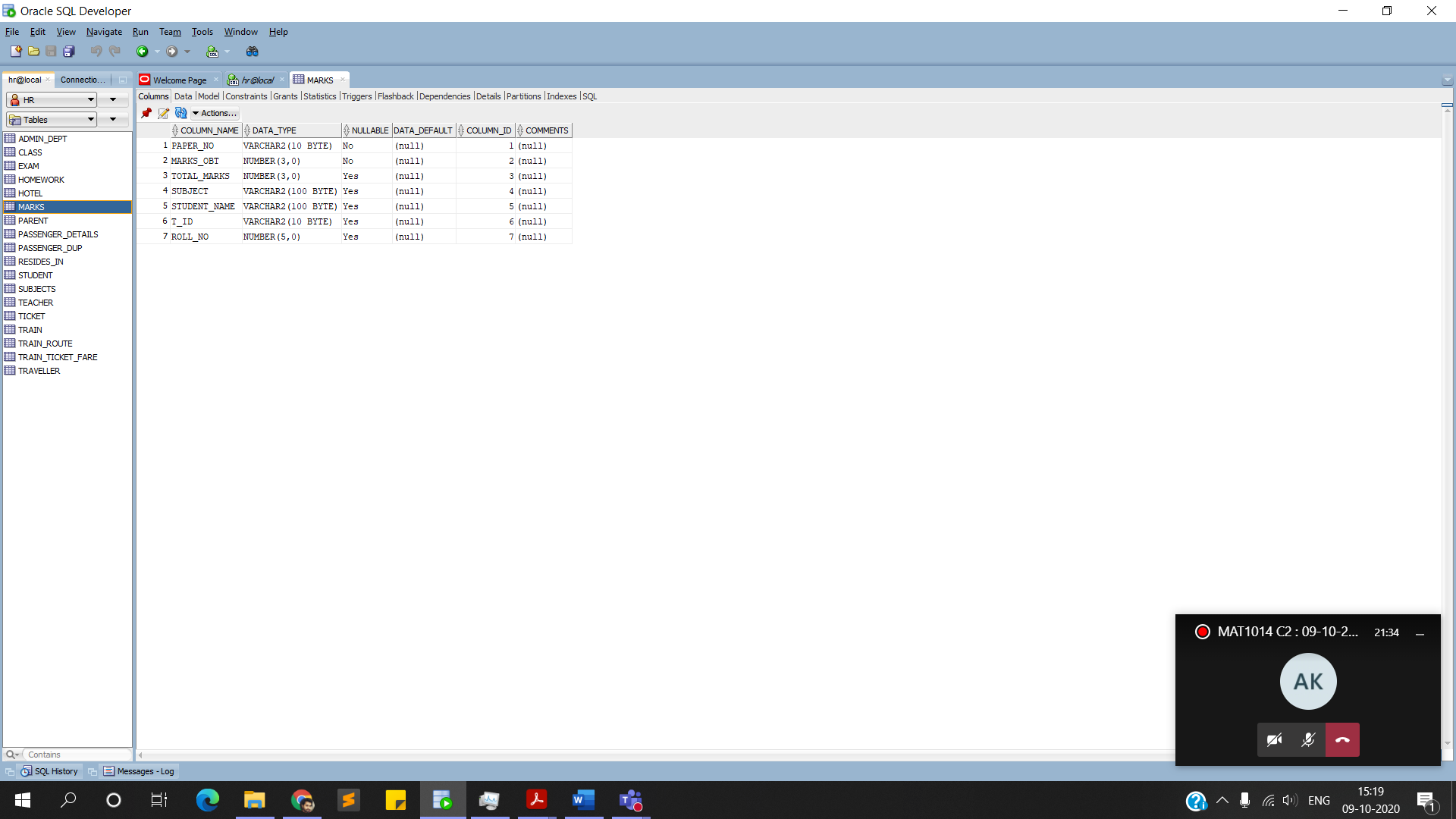
**create table student(**

**roll\_no number(5) constraint roll\_pk primary key,**

**name varchar(20) constraint n\_null not null,**

**class number(2),**

**section varchar(2), fees varchar(10));**

**‘Marks’:**

**CODE:**

**Create table marks(**

**Paper\_No varchar(10) constraint mark\_pk primary key,**

**Marks\_obt number(3) constraint mk\_obt\_nnull not null,**

**Total\_marks number(3),**

**Subject varchar(100),**

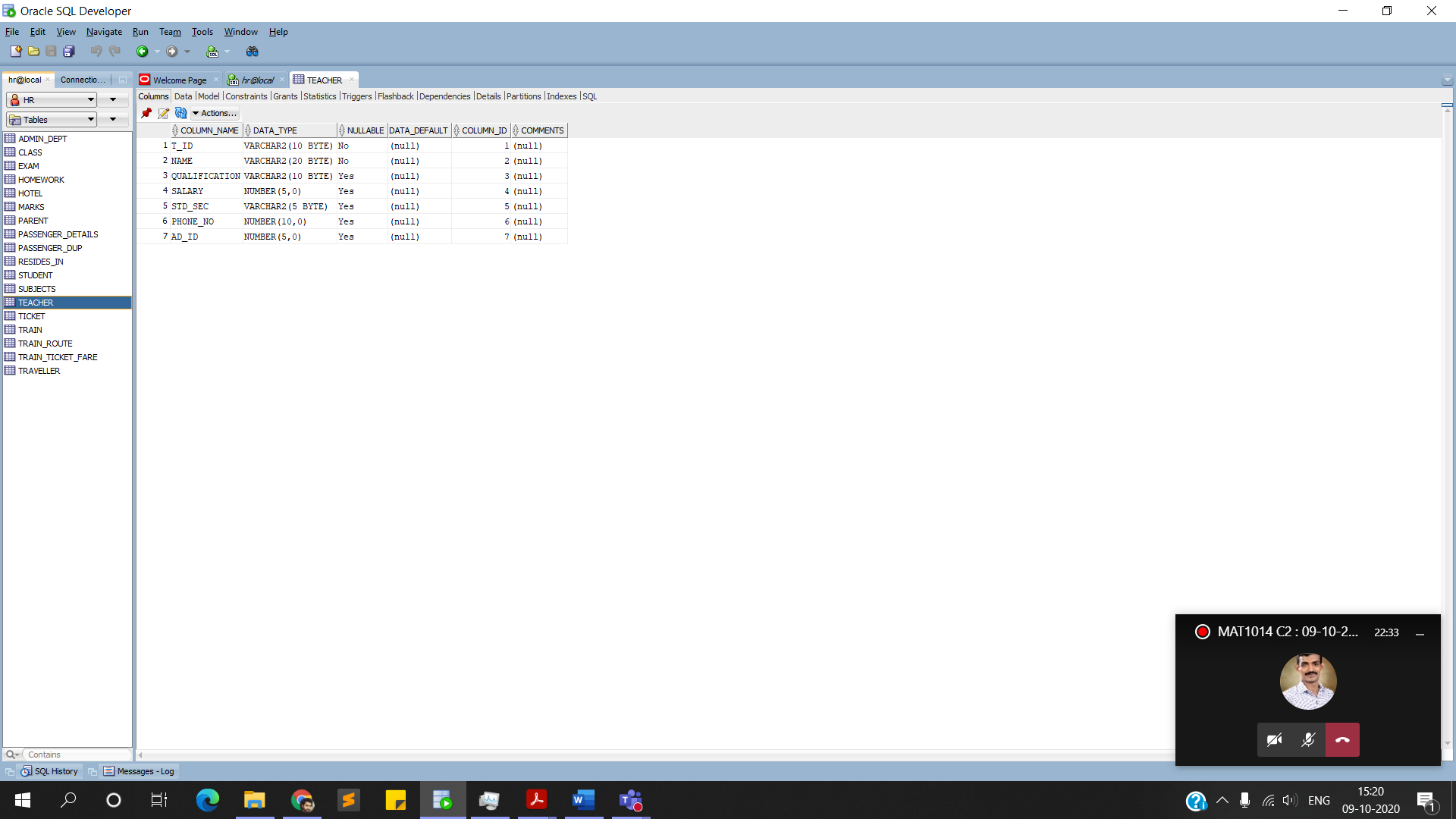
**Student\_name varchar(100),**

**T\_ID varchar(10),**

**Roll\_No number(5),**

**Constraint mk\_fk1 foreign key(T\_ID) references teacher(T\_ID),**

**Constraint mk\_fk2 foreign key(Roll\_No) references student(Roll\_No));**

**‘Teacher’:**

**CODE:**

**create table Teacher(**

**t\_id varchar(10) constraint t\_id\_pk primary key,**

**name varchar(20) constraint name\_nnull not null,**

**Qualification varchar(10),**

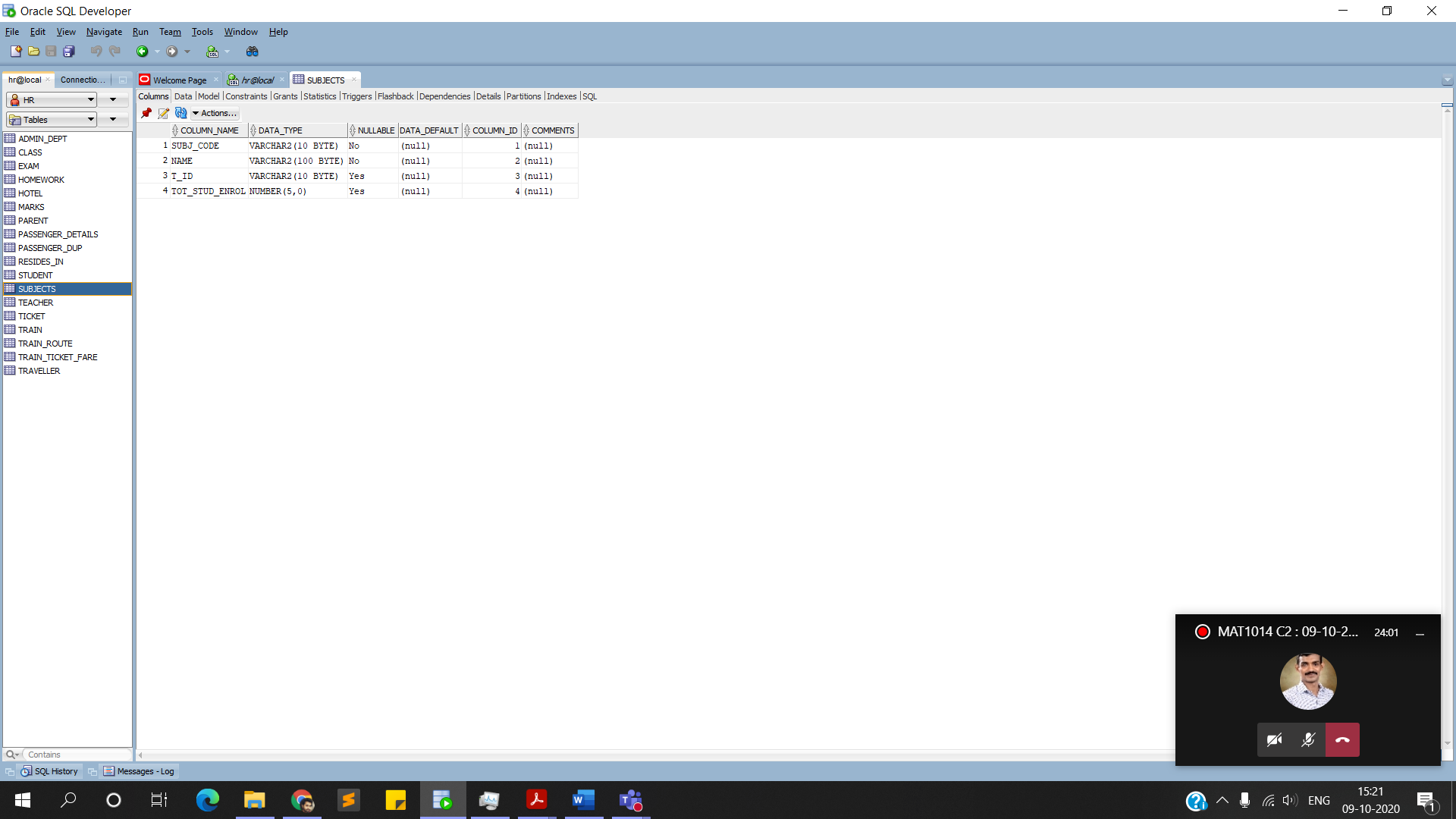
**salary number(5),**

**std\_sec varchar(5),**

**phone\_no number(10),**

**Ad\_id number(5),**

**constraint teacher\_adid\_fk foreign key(AD\_ID) references Admin\_Dept(AD\_ID));**

**‘Subjects’:**

**CODE:**

**Create table subjects(**

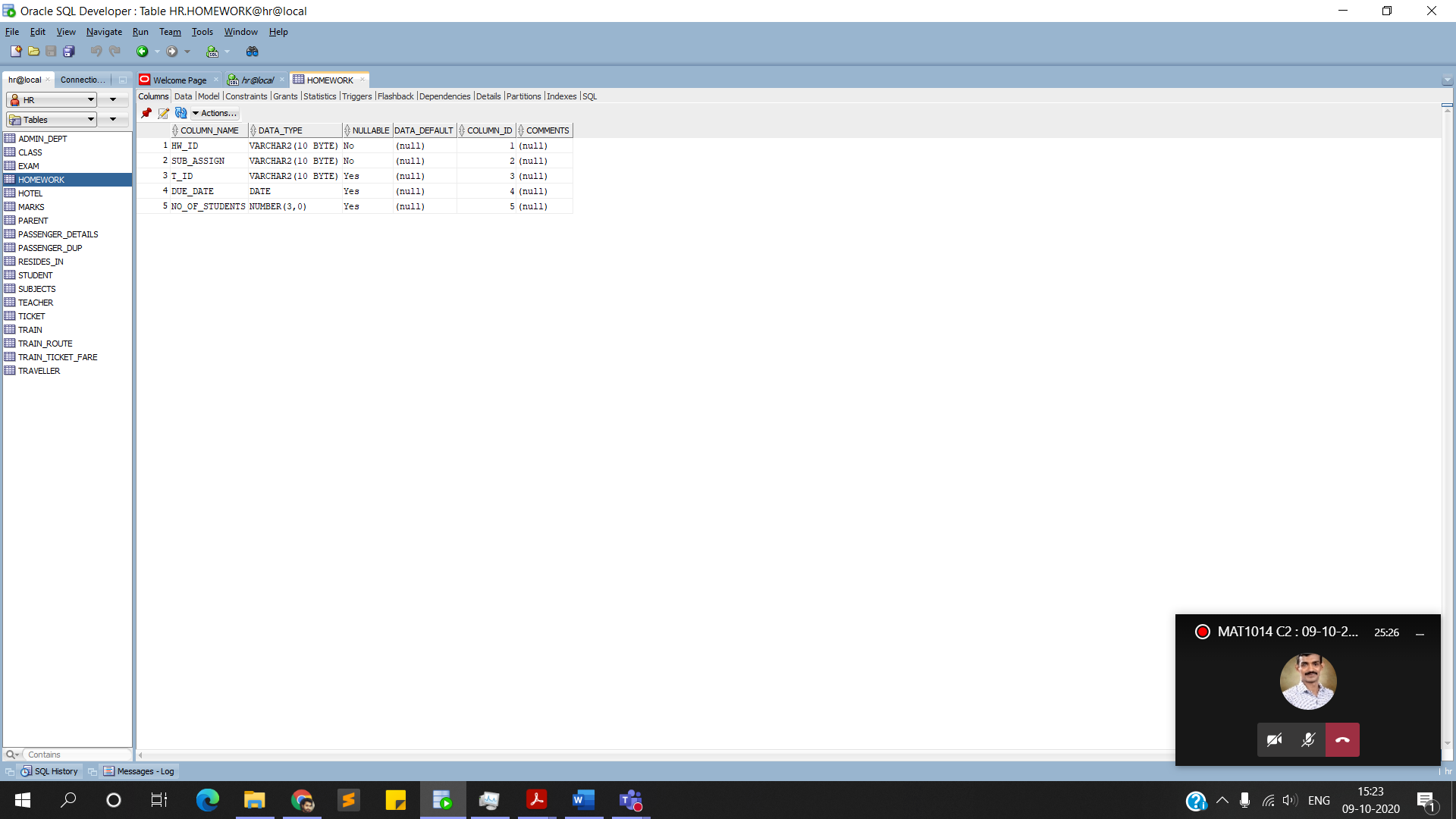
**Subj\_code varchar(10) constraint sub\_code\_pk primary key,**

**Name varchar(100) constraint subn\_nnull not null,**

**T\_ID varchar(10),**

**Tot\_stud\_enrol number(5),**

**Constraint subt\_fk foreign key(T\_ID) references teacher(T\_ID));**

**‘Homework’:**

**CODE:**

**Create table Homework(**

**Hw\_id varchar(10) constraint hw\_id\_pk primary key,**

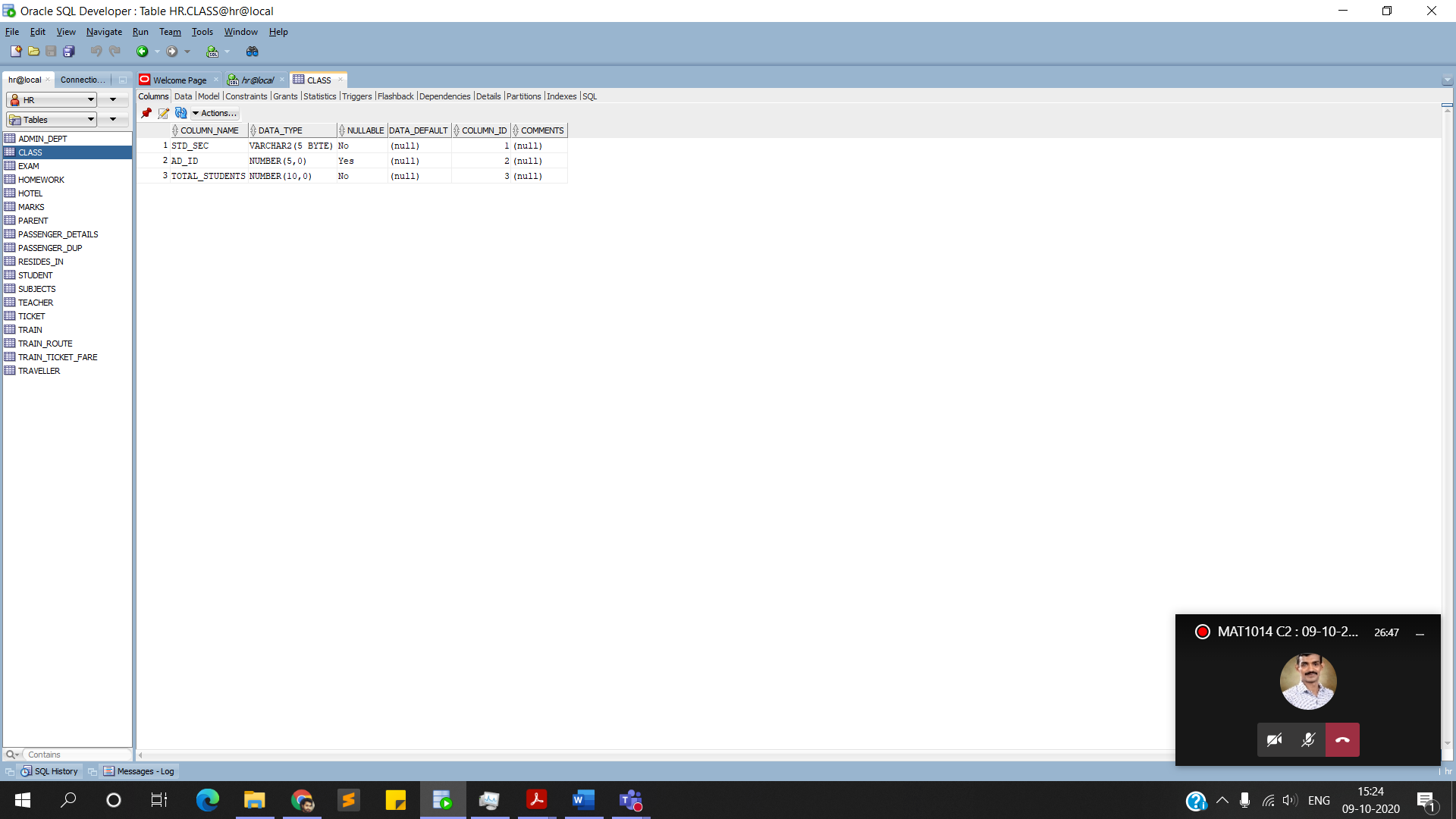
**Sub\_assign varchar(10) constraint sub\_nnull not null,**

**T\_ID varchar(10),**

**Due\_date date,**

**No\_of\_students number(3),**

**Constraint hw\_fk foreign key(T\_ID) references teacher(T\_ID));**

**‘Class’:**

**CODE:**

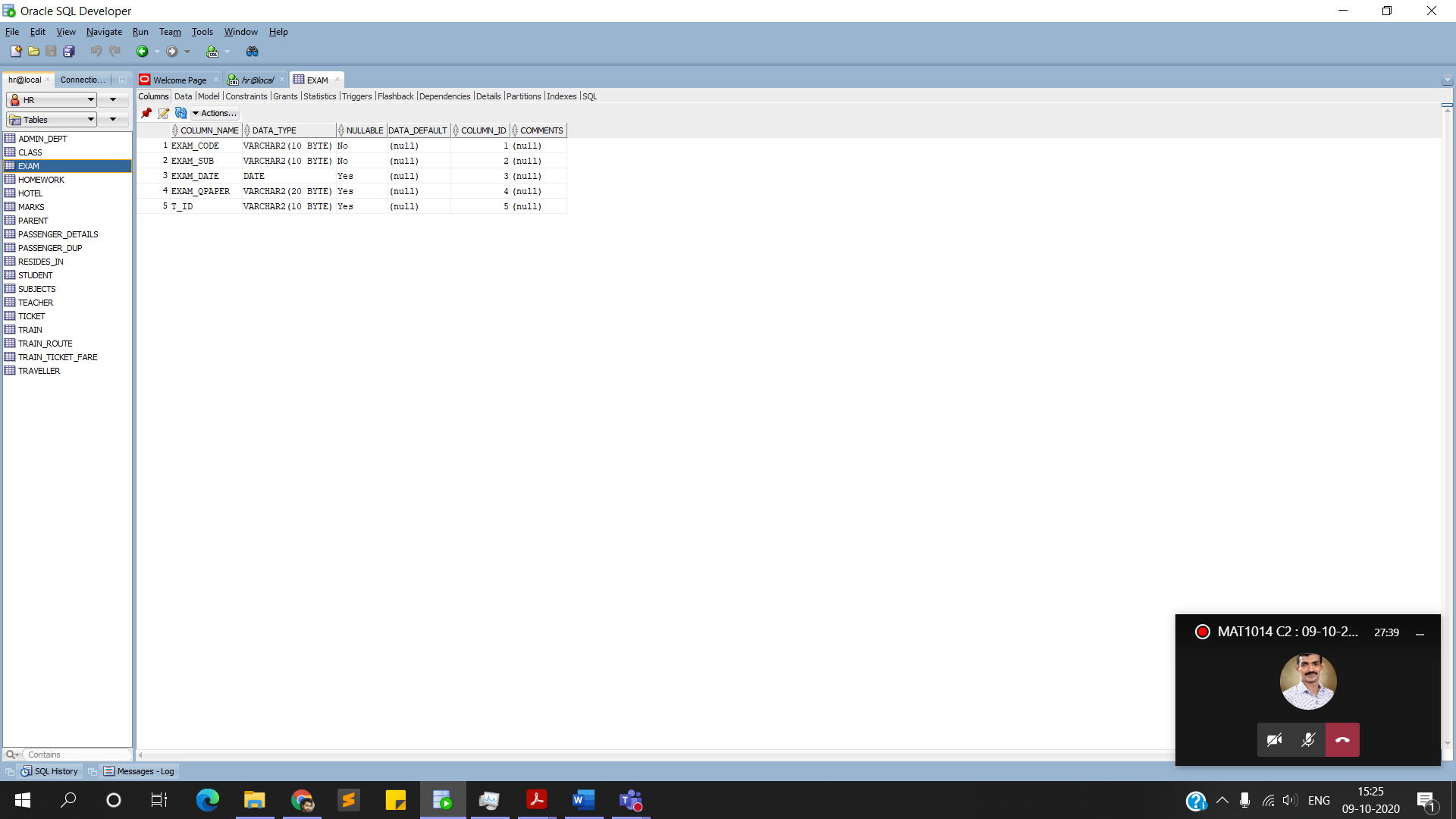
**Create table Class(**

**Std\_sec varchar(5) constraint std\_sc\_pk primary key,**

**AD\_ID number(5),**

**Total\_students number(10) constraint ts\_nnull not null,**

**Constraint cl\_ad\_fk foreign key(AD\_ID) references Admin\_Dept(AD\_ID));**

**‘Exam’:**

**CODE:**

**Create table Exam(**

**Exam\_code varchar(10) constraint ex\_cd\_pk primary key,**

**Exam\_sub varchar(10) constraint ex\_sb\_nnull not null,**

**Exam\_date date,**

**Exam\_qpaper varchar(20),**

**T\_ID varchar(10),**

**Constraint ex\_fk foreign key(T\_ID) references teacher(T\_ID));**

**INSERTION OF DATA:**

**‘Admin\_dept’:**

**INSERT INTO ADMIN\_DEPT values(00001,'Anirudh Karanam','PRINCIPAL','PhD Chem','anirudh@gmail.com',8688456460,20000);**

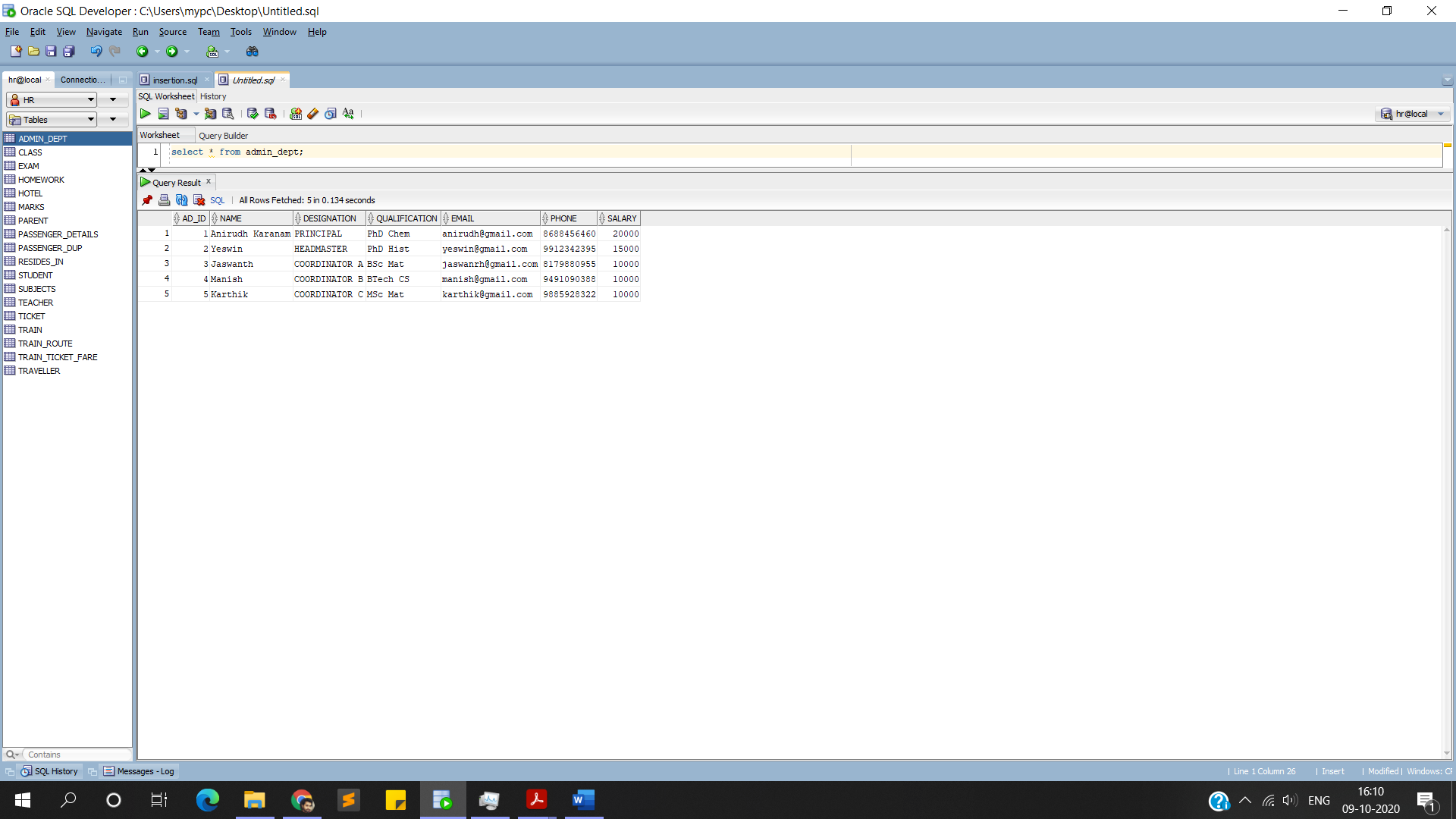
**INSERT INTO ADMIN\_DEPT VALUES(00002,'Yeswin','HEADMASTER','PhD Hist','yeswin@gmail.com',9912342395,15000);**

**INSERT INTO ADMIN\_DEPT VALUES(00003,'Jaswanth','COORDINATOR A','BSc Mat','jaswanrh@gmail.com',8179880955,10000);**

**INSERT INTO ADMIN\_DEPT VALUES(00004,'Manish','COORDINATOR B','BTech CS','manish@gmail.com',9491090388,10000);**

**INSERT INTO ADMIN\_DEPT VALUES(00005,'Karthik','COORDINATOR C','MSc Mat','karthik@gmail.com',9885928322,10000);**

**commit;**

**OUTPUT**

**‘Student’:**

**INSERT INTO STUDENT VALUES(26,'Sree',12,'A','PAID');**

**INSERT INTO STUDENT VALUES(12,'Uday',12,'A','PAID');**

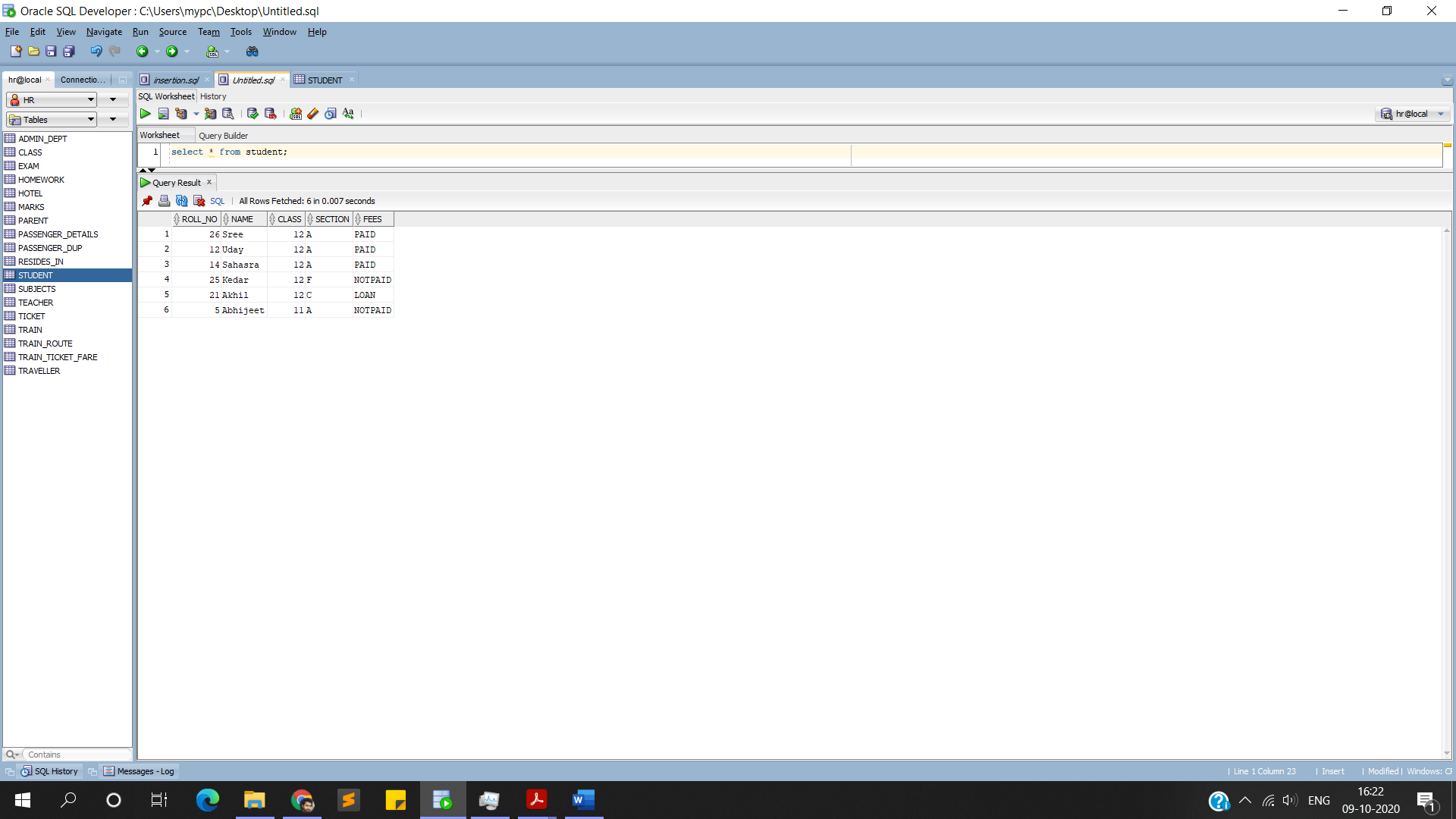
**INSERT INTO STUDENT VALUES(14,'Sahasra',12,'A','PAID');**

**INSERT INTO STUDENT VALUES(25,'Kedar',12,'F','NOTPAID');**

**INSERT INTO STUDENT VALUES(21,'Akhil',12,'C','LOAN');**

**INSERT INTO STUDENT VALUES(05,'Abhijeet',11,'A','NOTPAID');**

**commit;**

**OUTPUT**

**‘Parent’:**

**INSERT INTO PARENT VALUES(1070107010,'BadriNath',14,9866006460);**

**INSERT INTO PARENT VALUES(1080108010,'Lakshmi',12,9898090990);**

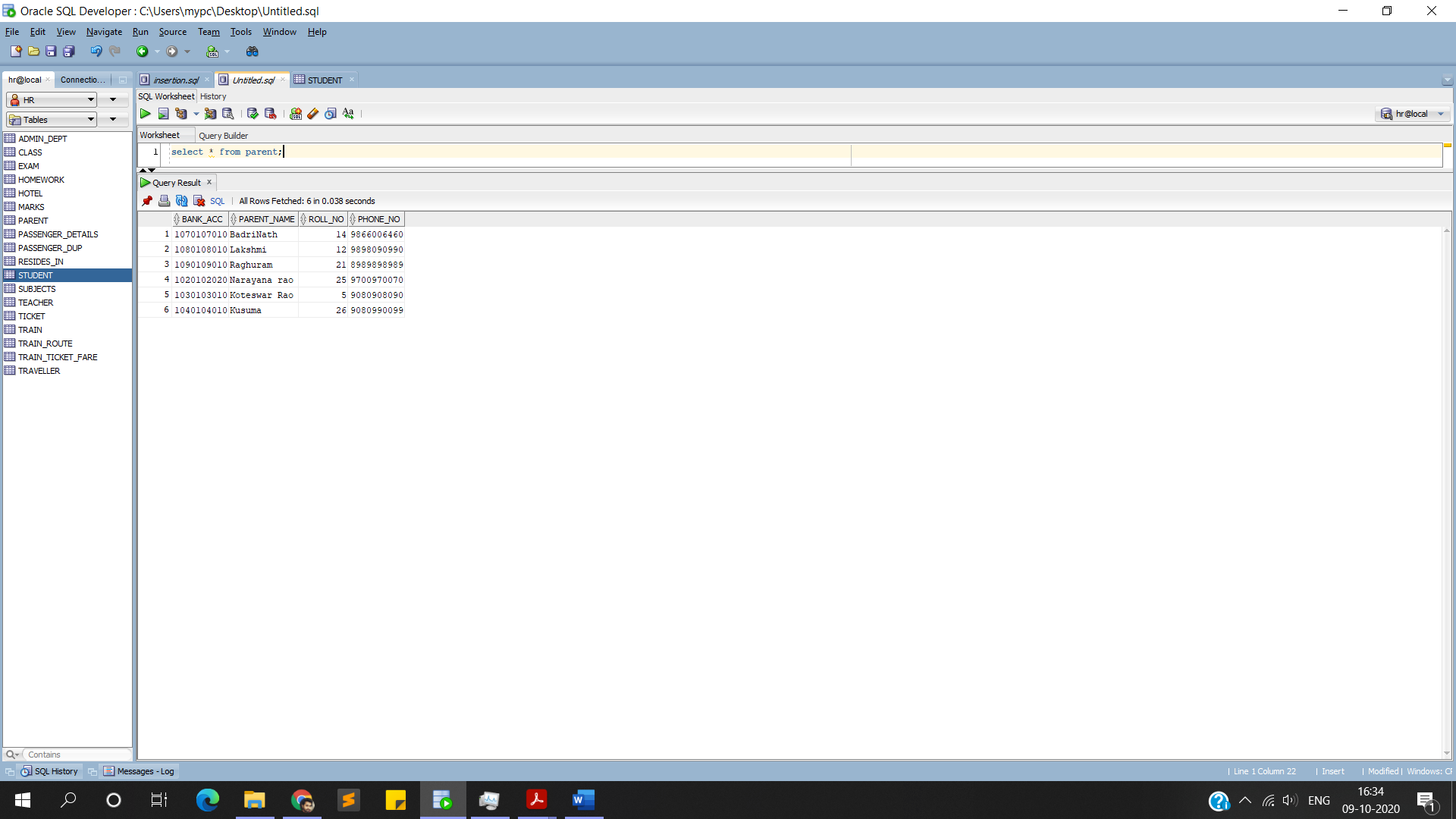
**INSERT INTO PARENT VALUES(1090109010,'Raghuram',21,8989898989);**

**INSERT INTO PARENT VALUES(1020102020,'Narayana rao',25,9700970070);**

**INSERT INTO PARENT VALUES(1030103010,'Koteswar Rao',05,9080908090);**

**INSERT INTO PARENT VALUES(1040104010,'Kusuma',26,9080990099);**

**commit;**

**OUTPUT**

**‘Teacher’:**

**INSERT INTO TEACHER VALUES('PMT001','Roy Santiago','BSc',4000,'CL001',6767676767,3);**

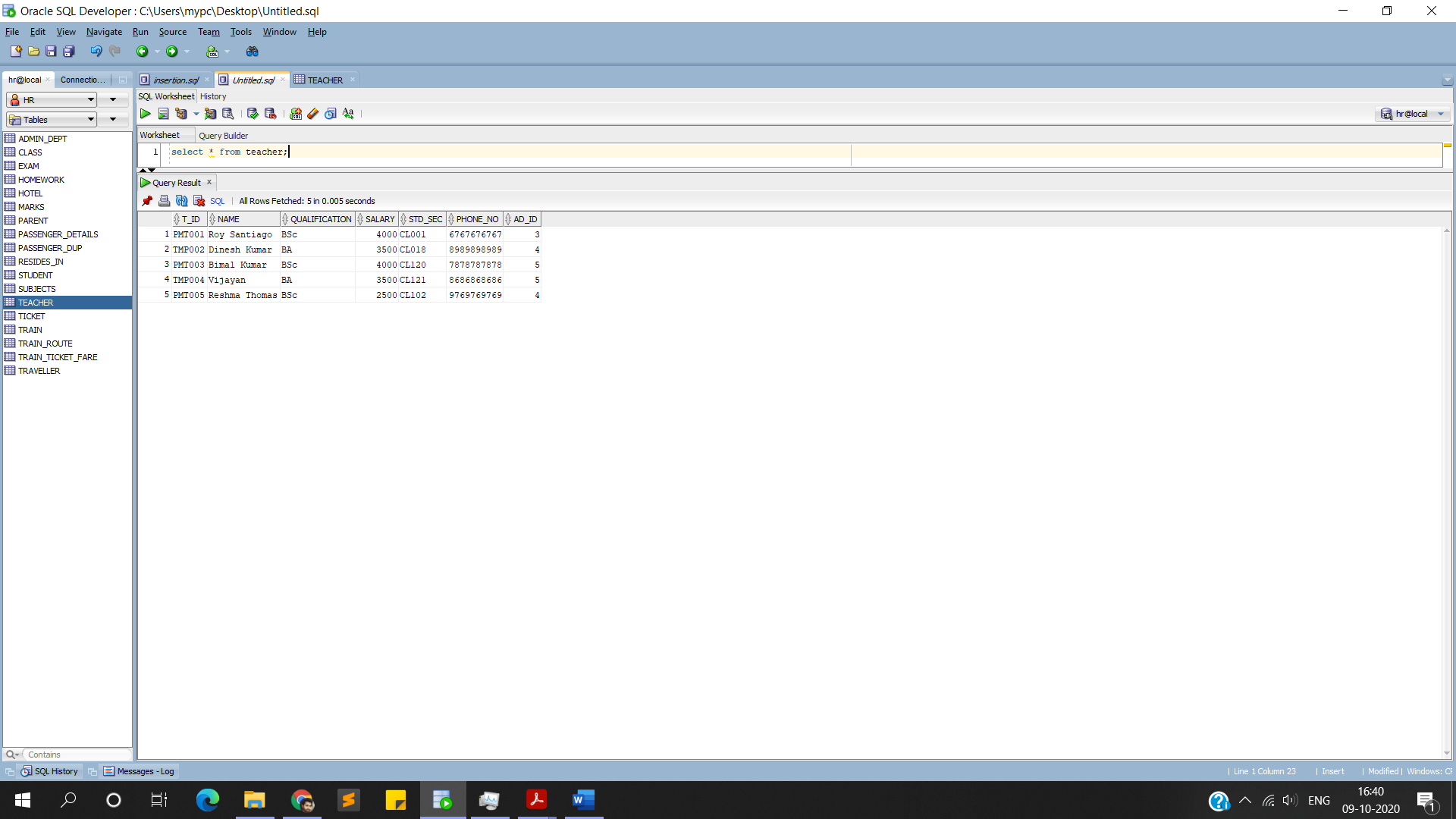
**INSERT INTO TEACHER VALUES('TMP002','Dinesh Kumar','BA',3500,'CL018',8989898989,4);**

**INSERT INTO TEACHER VALUES('PMT003','Bimal Kumar','BSc',4000,'CL120',7878787878,5);**

**INSERT INTO TEACHER VALUES('TMP004','Vijayan','BA',3500,'CL121',8686868686,5);**

**INSERT INTO TEACHER VALUES('PMT005','Reshma Thomas','BSc',2500,'CL102',9769769769,4);**

**commit;**

**OUTPUT**

**‘Homework’:**

**INSERT INTO HOMEWORK VALUES('HW1001','PHY','PMT003',DATE'2020-06-08',33);**

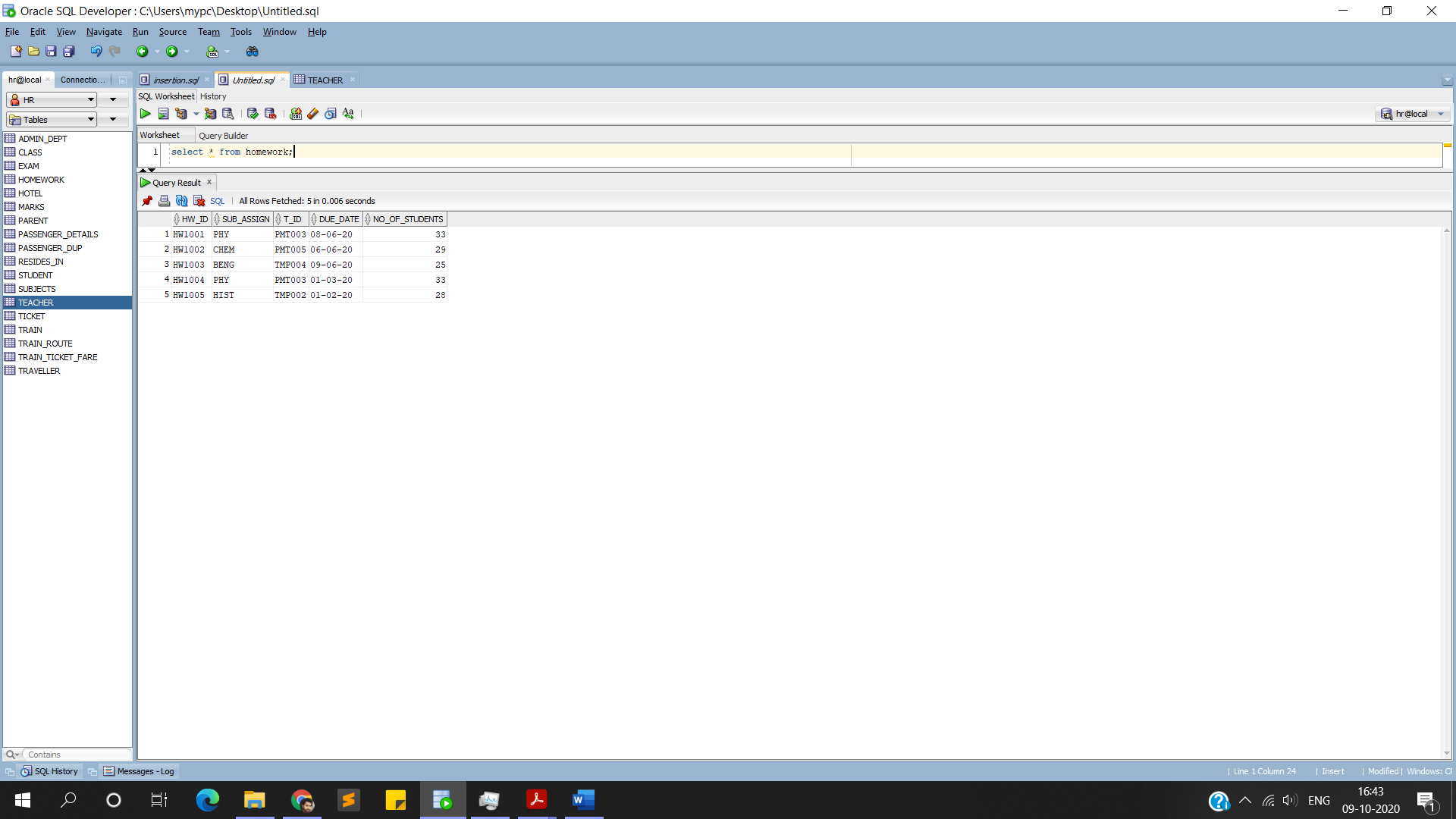
**INSERT INTO HOMEWORK VALUES('HW1002','CHEM','PMT005',DATE'2020-06-06',29);**

**INSERT INTO HOMEWORK VALUES('HW1003','BENG','TMP004',DATE'2020-06-09',25);**

**INSERT INTO HOMEWORK VALUES('HW1004','PHY','PMT003',DATE'2020-03-01',33);**

**INSERT INTO HOMEWORK VALUES('HW1005','HIST','TMP002',DATE'2020-02-01',28);**

**commit;**

**OUTPUT**

**‘Exam’**

**INSERT INTO EXAM VALUES('EXM001','PHY',DATE'2020-06-08','qpaper1.docx','PMT001');**

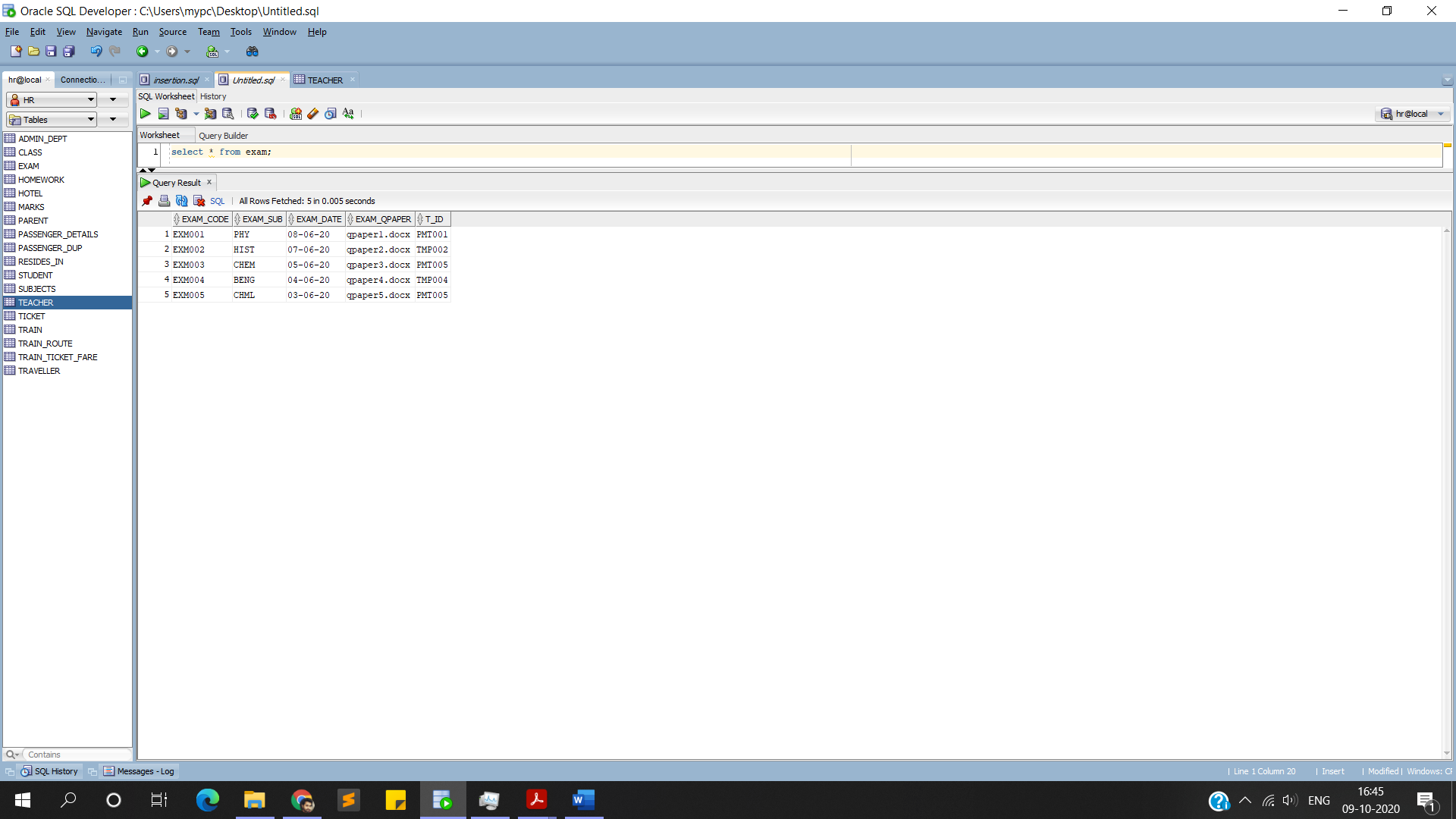
**INSERT INTO EXAM VALUES('EXM002','HIST',DATE'2020-06-07','qpaper2.docx','TMP002');**

**INSERT INTO EXAM VALUES('EXM003','CHEM',DATE'2020-06-05','qpaper3.docx','PMT005');**

**INSERT INTO EXAM VALUES('EXM004','BENG',DATE'2020-06-04','qpaper4.docx','TMP004');**

**INSERT INTO EXAM VALUES('EXM005','CHML',DATE'2020-06-03','qpaper5.docx','PMT005');**

**commit;**

**OUTPUT**

**‘Class’**

**INSERT INTO CLASS VALUES('12A',3,33);**

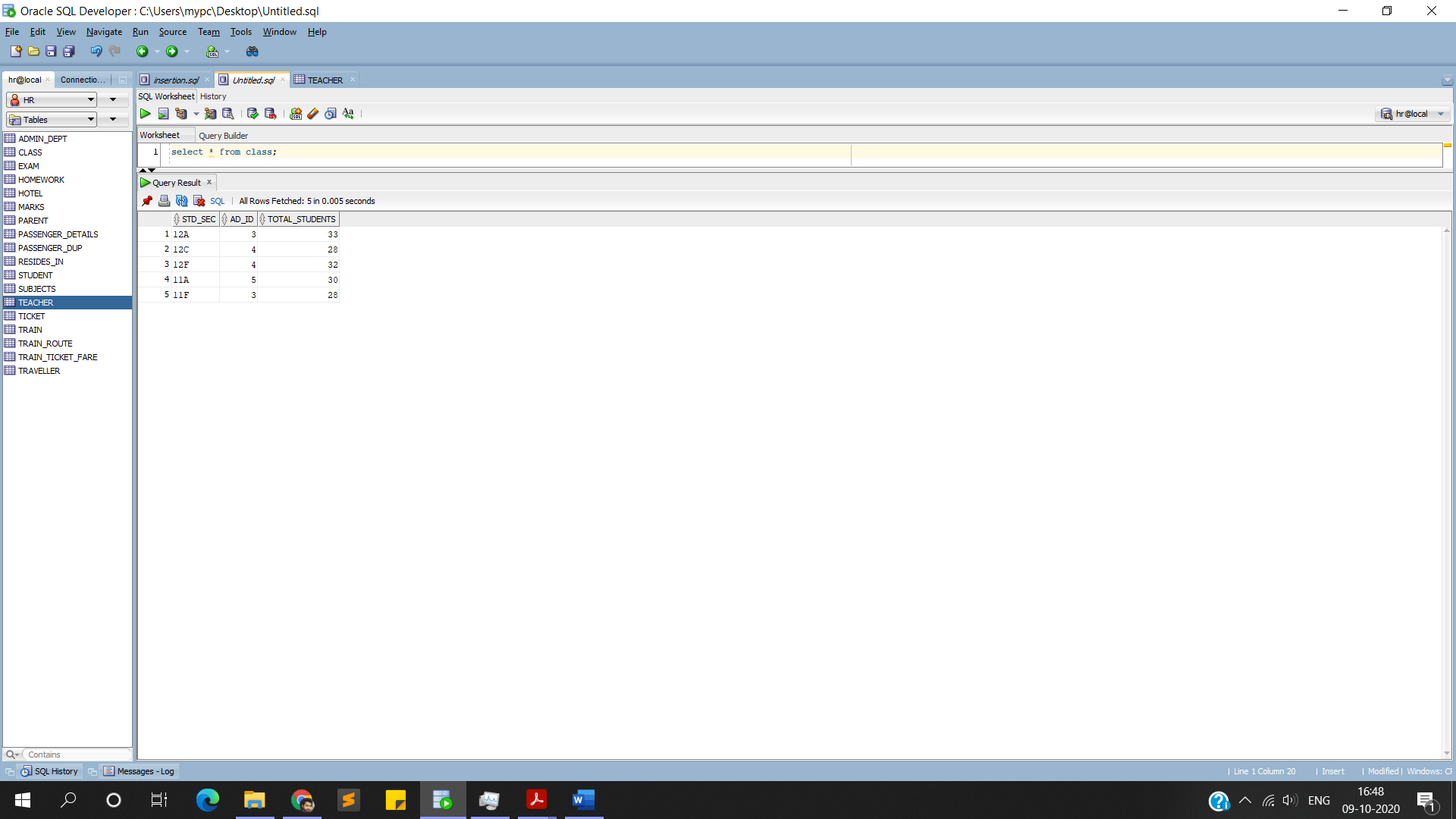
**INSERT INTO CLASS VALUES('12C',4,28);**

**INSERT INTO CLASS VALUES('12F',4,32);**

**INSERT INTO CLASS VALUES('11A',5,30);**

**INSERT INTO CLASS VALUES('11F',3,28);**

**commit;**

**OUTPUT**

**‘Subjects’**

**INSERT INTO SUBJECTS VALUES('PHY1001','Introduction to Physics','PMT003',70);**

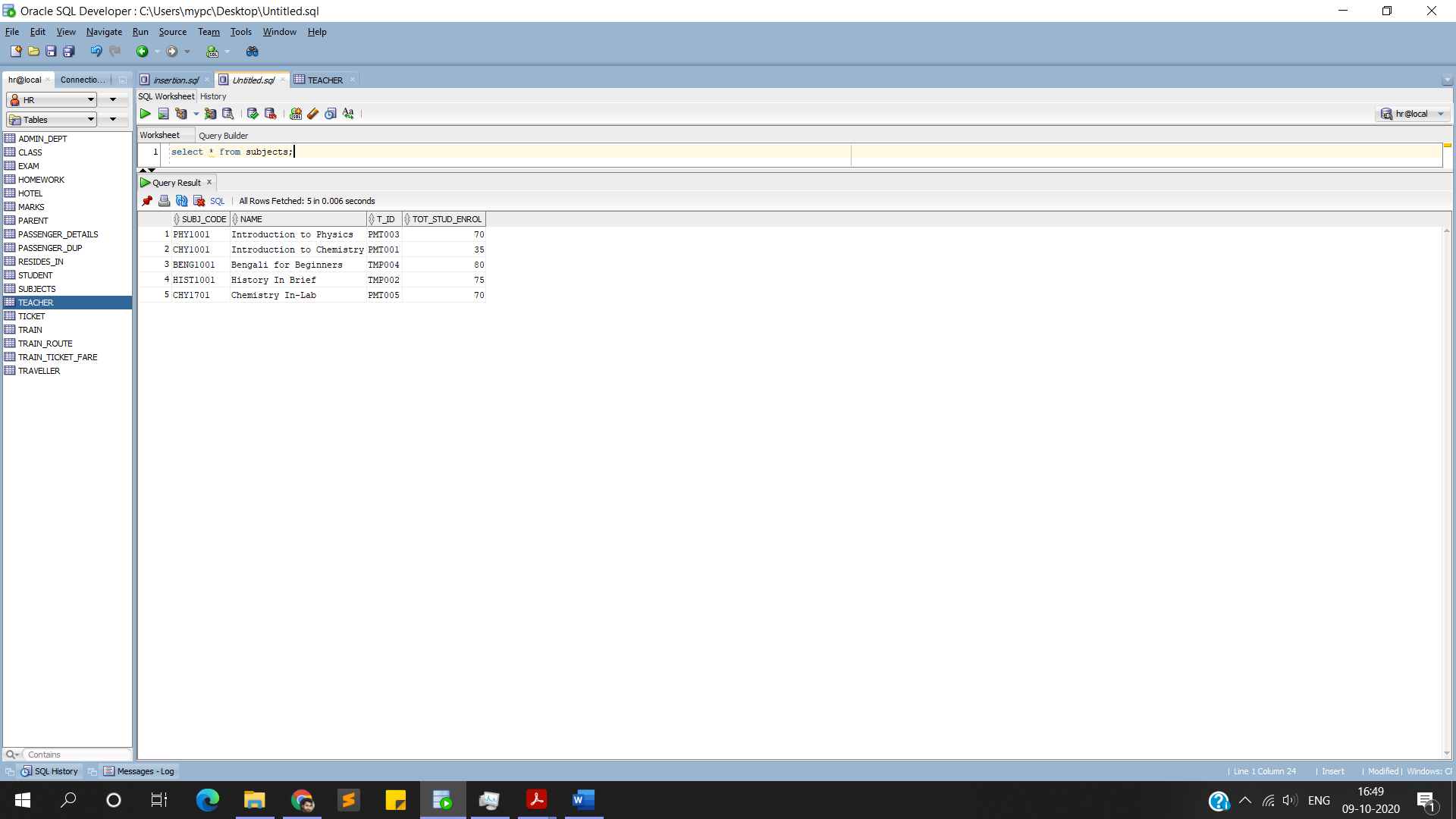
**INSERT INTO SUBJECTS VALUES('CHY1001','Introduction to Chemistry','PMT001',35);**

**INSERT INTO SUBJECTS VALUES('BENG1001','Bengali for Beginners','TMP004',80);**

**INSERT INTO SUBJECTS VALUES('HIST1001','History In Brief','TMP002',75);**

**INSERT INTO SUBJECTS VALUES('CHY1701','Chemistry In-Lab','PMT005',70);**

**Commit;**

**OUTPUT**

**‘Marks’**

**INSERT INTO MARKS VALUES('SL001',98,100,'PHYSICS','Sahasra','PMT003',14);**

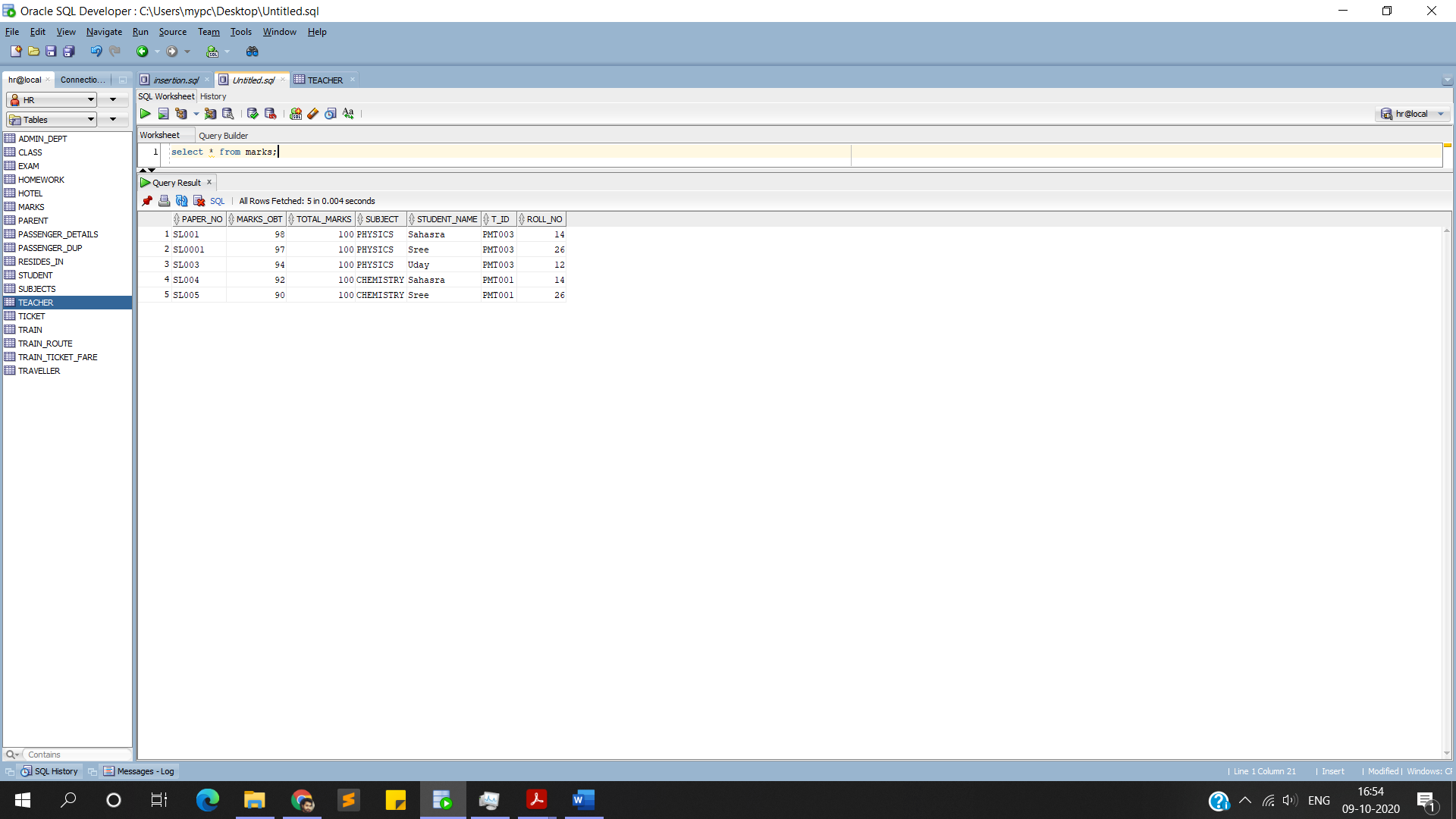
**INSERT INTO MARKS VALUES('SL0001',97,100,'PHYSICS','Sree','PMT003',26);**

**INSERT INTO MARKS VALUES('SL003',94,100,'PHYSICS','Uday','PMT003',12);**

**INSERT INTO MARKS VALUES('SL004',92,100,'CHEMISTRY','Sahasra','PMT001',14);**

**INSERT INTO MARKS VALUES('SL005',90,100,'CHEMISTRY','Sree','PMT001',26);**

**commit;**

**OUTPUT**