**21.CREATE A USER-DEFINED RECORDS GENERATING CONSALIDATED MARKSHEET FROM STUDENT DETAIL (YOU CAN HAVE REQUISITE NUMBER OF TABLES ACCORDING TO YOUR USER DEFINED RECORDS AND REQUIREMENT APPLY INDEX BY TABLE OF RECORDS.**

**CREATE TABLE STUDENTS\_DETAIL(STU\_ID INT PRIMARY KEY,STU\_NAME VARCHAR(20),STU\_DEP VARCHAR(20),TOTAL\_MARK INT,STU\_GRADE VARCHAR(12));**

**INSERT INTO STUDENTS\_DETAIL VALUES(1,'Ajith','IT',410,'A');**

**INSERT INTO STUDENTS\_DETAIL VALUES(2,'Barani','AIML',452,'S');**

**INSERT INTO STUDENTS\_DETAIL VALUES(3,'Dilli','CSE',347,'C');**

**INSERT INTO STUDENTS\_DETAIL VALUES(4,'Elagovan','AI&DS',386,'B');**

**INSERT INTO STUDENTS\_DETAIL VALUES(5,'Peter','IT',320,'C');**

**INSERT INTO STUDENTS\_DETAIL VALUES(6,'Sarath','AIML',298,'D');**

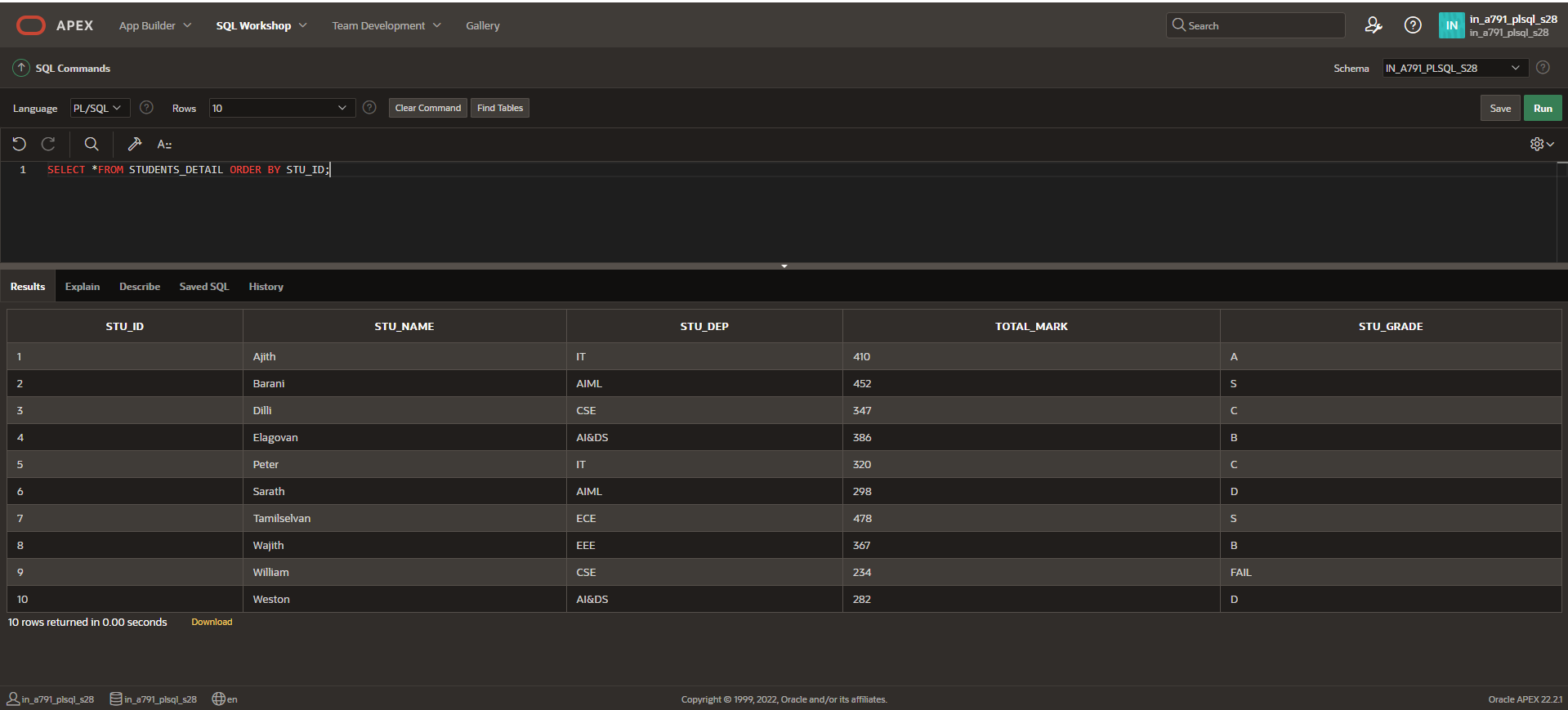
**INSERT INTO STUDENTS\_DETAIL VALUES(7,'Tamilselvan','ECE',478,'S');**

**INSERT INTO STUDENTS\_DETAIL VALUES(8,'Wajith','EEE',367,'B');**

**INSERT INTO STUDENTS\_DETAIL VALUES(9,'William','CSE',234,'FAIL');**

**INSERT INTO STUDENTS\_DETAIL VALUES(10,'Weston','AI&DS',282,'D');**

**SELECT \*FROM STUDENTS\_DETAIL ORDER BY STU\_ID;**

****

**USER-DEFINED RECORDS**

**DECLARE**

**TYPE STUDENT\_DETAILS IS RECORD**

**(**

**STU\_ID STUDENTS\_DETAIL.STU\_ID%TYPE,**

**STU\_NAME STUDENTS\_DETAIL.STU\_NAME%TYPE,**

**TOTAL\_MARK STUDENTS\_DETAIL.TOTAL\_MARK%TYPE,**

**STU\_GRADE STUDENTS\_DETAIL.STU\_GRADE%TYPE**

**);**

**v\_person\_student\_details STUDENT\_DETAILS;**

**BEGIN**

**SELECT STU\_ID,STU\_NAME,TOTAL\_MARK,STU\_GRADE**

**INTO v\_person\_student\_details**

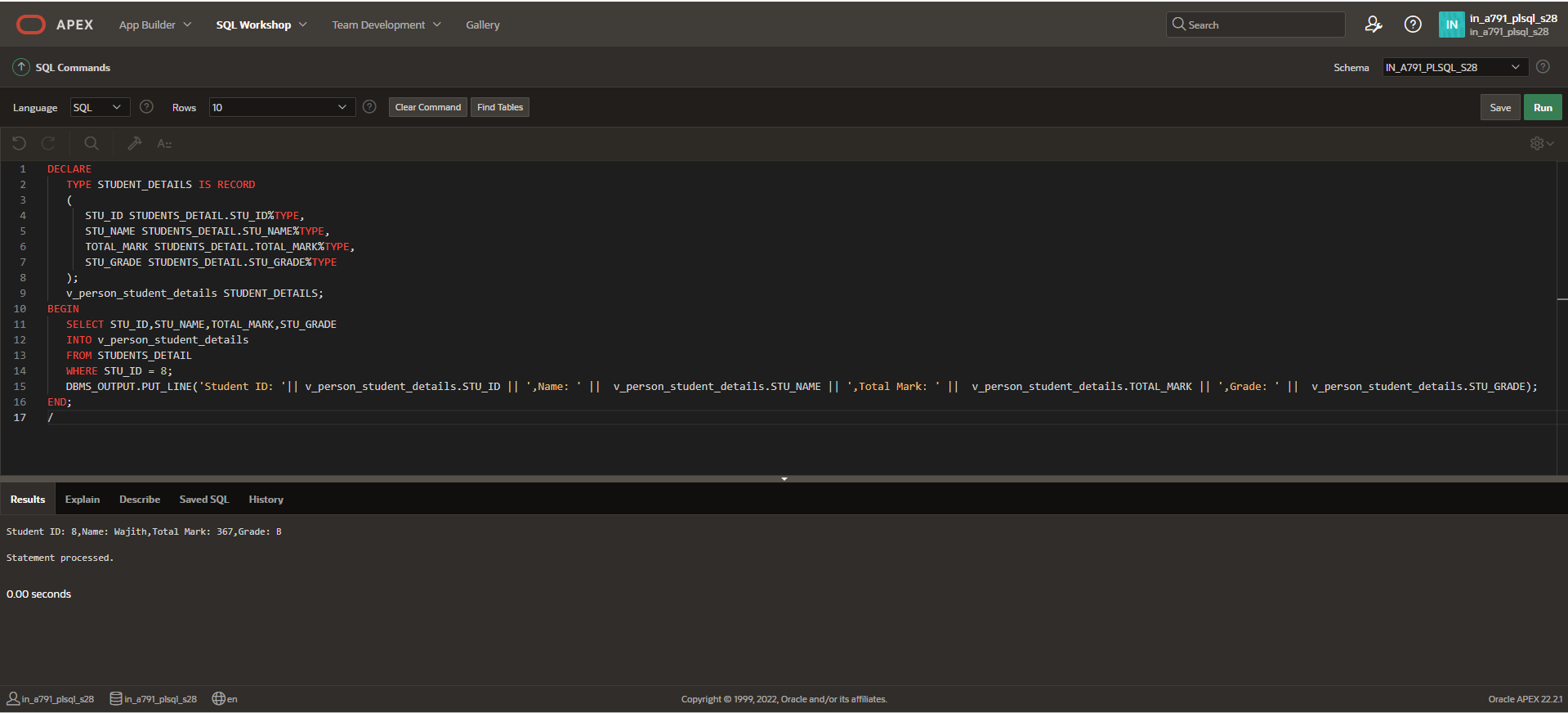
**FROM STUDENTS\_DETAIL**

**WHERE STU\_ID = 8;**

**DBMS\_OUTPUT.PUT\_LINE('Student ID: '|| v\_person\_student\_details.STU\_ID || ',Name: ' || v\_person\_student\_details.STU\_NAME || ',Total Mark: ' || v\_person\_student\_details.TOTAL\_MARK || ',Grade: ' || v\_person\_student\_details.STU\_GRADE);**

**END;**

**/**

****

**INDEX BY TABLE OF RECORDS IN COUNT**

**DECLARE**

**TYPE stu\_det IS TABLE OF STUDENTS\_DETAIL.STU\_GRADE%TYPE**

**INDEX BY VARCHAR(20);**

**v\_stu\_det\_tab stu\_det;**

**v\_stu\_det\_count VARCHAR(20);**

**BEGIN**

**FOR stu\_rec IN (SELECT STU\_GRADE FROM STUDENTS\_DETAIL)**

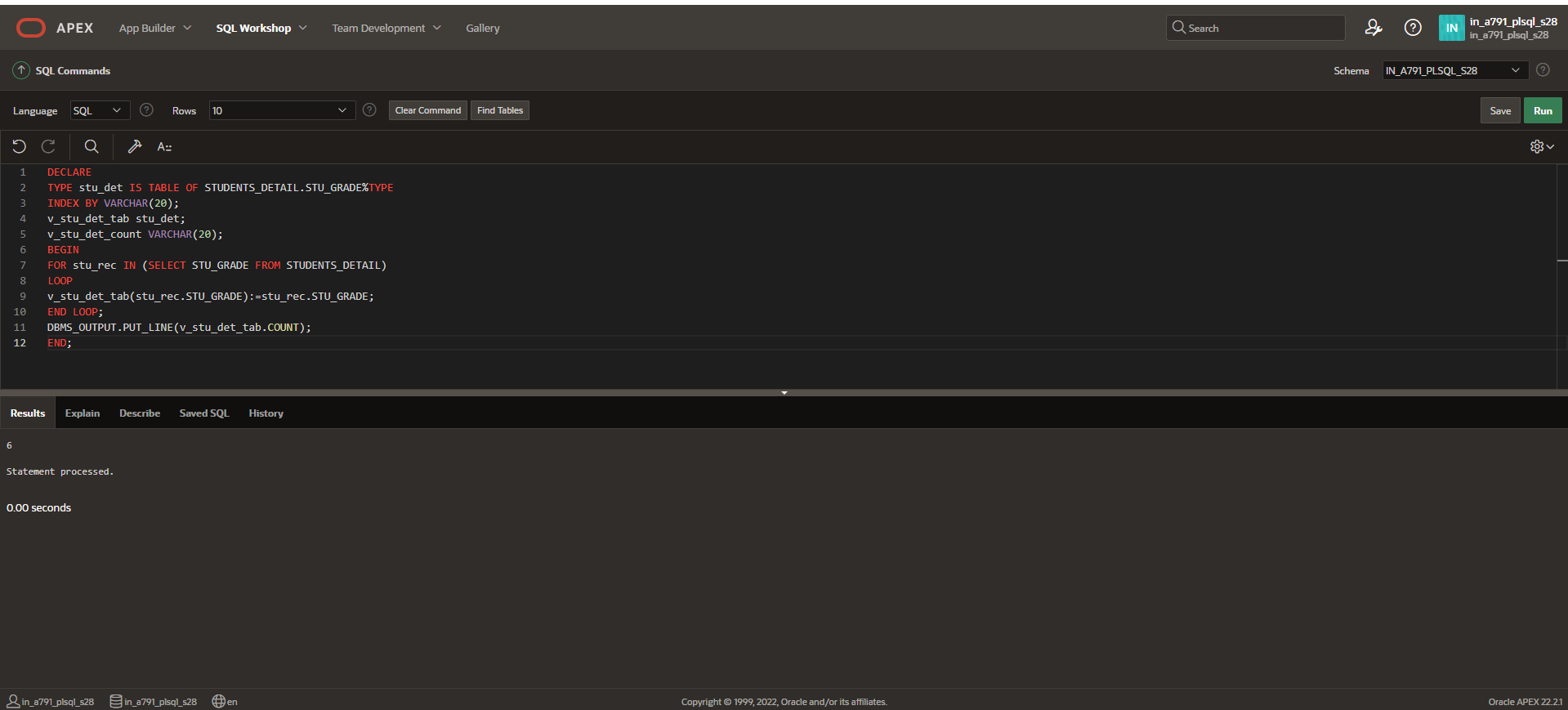
**LOOP**

**v\_stu\_det\_tab(stu\_rec.STU\_GRADE):=stu\_rec.STU\_GRADE;**

**END LOOP;**

**DBMS\_OUTPUT.PUT\_LINE(v\_stu\_det\_tab.COUNT);**

**END;**

****

**INDEX BY TABLE OF RECORDS IN FIRST**

**DECLARE**

**TYPE stu\_det IS TABLE OF STUDENTS\_DETAIL.STU\_GRADE%TYPE**

**INDEX BY VARCHAR(20);**

**v\_stu\_det\_tab stu\_det;**

**v\_stu\_det\_count VARCHAR(20);**

**BEGIN**

**FOR stu\_rec IN (SELECT STU\_GRADE FROM STUDENTS\_DETAIL)**

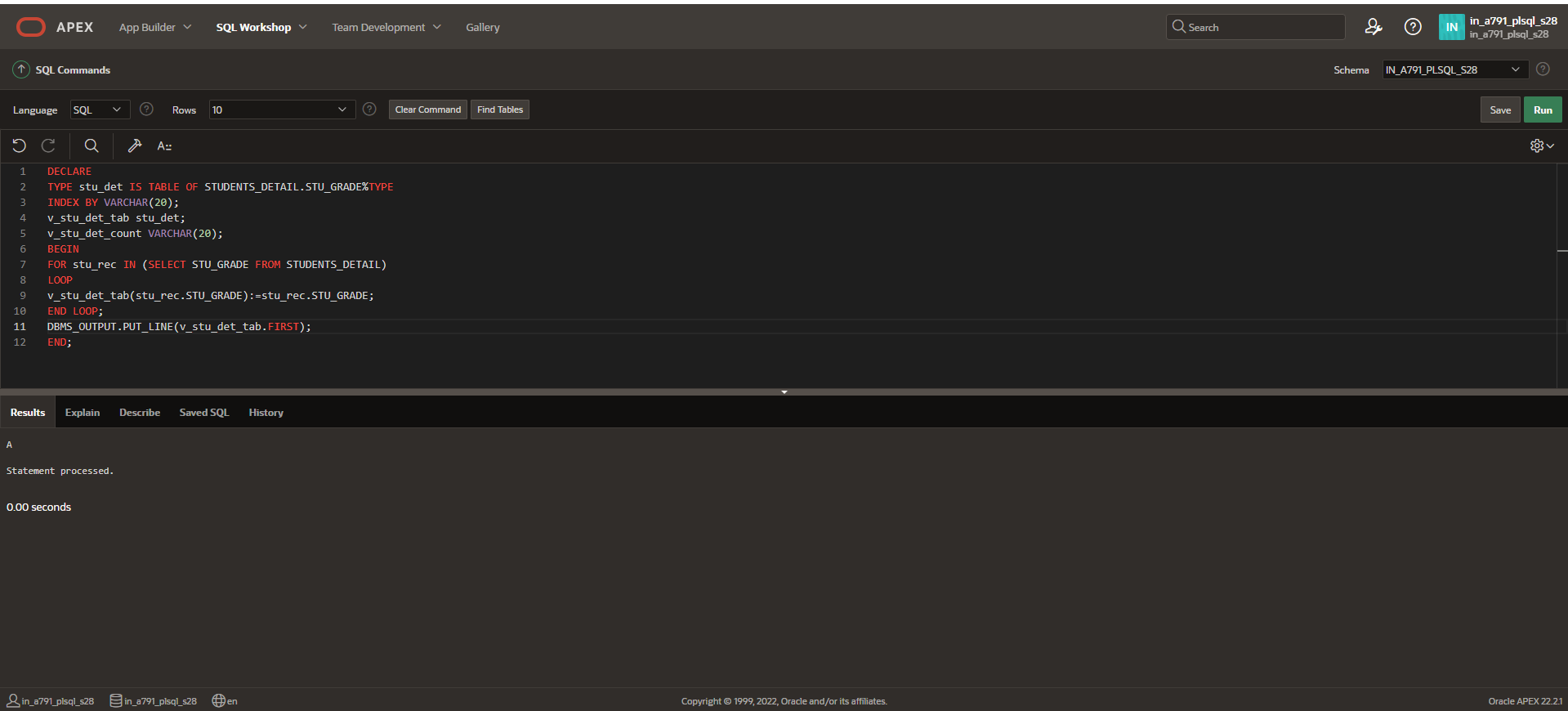
**LOOP**

**v\_stu\_det\_tab(stu\_rec.STU\_GRADE):=stu\_rec.STU\_GRADE;**

**END LOOP;**

**DBMS\_OUTPUT.PUT\_LINE(v\_stu\_det\_tab.FIRST);**

**END;**

****

**INDEX BY TABLE OF RECORDS IN LAST**

**DECLARE**

**TYPE stu\_det IS TABLE OF STUDENTS\_DETAIL.STU\_GRADE%TYPE**

**INDEX BY VARCHAR(20);**

**v\_stu\_det\_tab stu\_det;**

**v\_stu\_det\_count VARCHAR(20);**

**BEGIN**

**FOR stu\_rec IN (SELECT STU\_GRADE FROM STUDENTS\_DETAIL)**

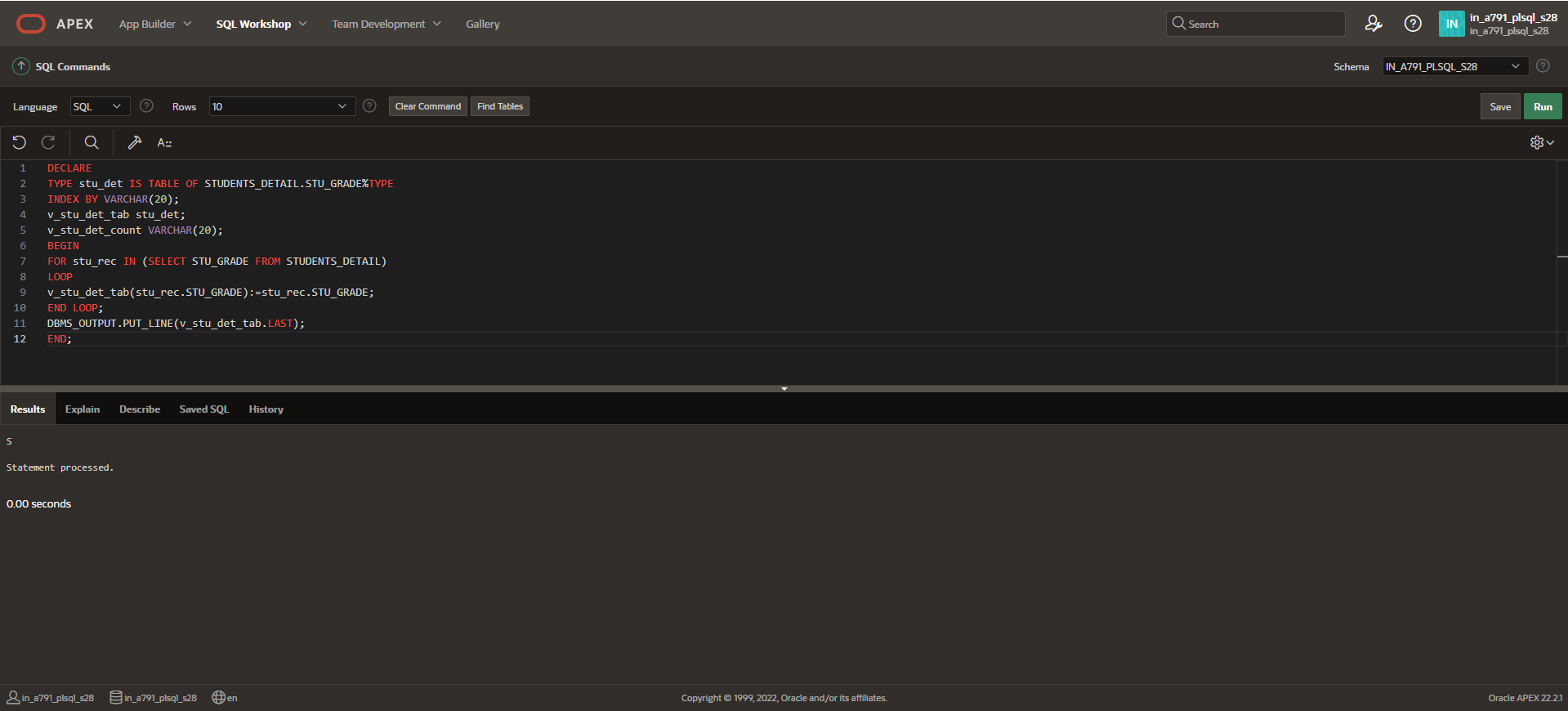
**LOOP**

**v\_stu\_det\_tab(stu\_rec.STU\_GRADE):=stu\_rec.STU\_GRADE;**

**END LOOP;**

**DBMS\_OUTPUT.PUT\_LINE(v\_stu\_det\_tab.LAST);**

**END;**

****