

With the Partitioning, OLAP and Data Mining options

```
SQL> CREATE TABLE student(rollNo varchar(10),name varchar(20),degree varchar(10),year varchar(10),sex varchar(6),deptNo number(3),advisor varchar(20));
```

Table created.

```
SQL> CREATE TABLE department(deptId varchar(10),name varchar(20),hod varchar(20),phone number(10));
```

Table created.

```
SQL> CREATE TABLE professor(empId varchar(10),name varchar(20),sex varchar(6),startYear number(4),deptNo number(3),phone number(10));
```

Table created.

```
SQL> CREATE TABLE course(courseId varchar(10),cname varchar(10),credits number(3),deptNo number(3));
```

Table created.

```
SQL> CREATE TABLE enrollment(rollNo varchar(10),courseId varchar(10),sem varchar(10),year number(4),grade varchar(5));
```

Table created.

```
SQL> CREATE TABLE teaching(empId varchar(10),courseId varchar(10),sem varchar(10),year number(4),classRoom varchar(5));
```

Table created.

```
SQL> CREATE TABLE preRequisite(preCourseId varchar(10),courseId varchar(10));
```

Table created.

```
SQL> INSERT ALL
```

```
2 INTO student(rollNo, name, degree, year, sex, deptNo, advisor) VALUES('CS21B2026','Abhiram','B.Tech','2','MALE',2,'Dr.Preet')
3 INTO student(rollNo, name, degree, year, sex, deptNo, advisor) VALUES('CS21B2037','Vishnu','B.Tech','2','MALE',2,'Dr.Preet')
4 INTO student(rollNo, name, degree, year, sex, deptNo, advisor) VALUES('CS22B2030','Bannu','B.Tech','1','MALE',1,'Dr.Santhanam')
5 INTO student(rollNo, name, degree, year, sex, deptNo, advisor) VALUES('CS22B2040','Sai','B.Tech','1','MALE',3,'Dr.Ram prasad')
6 INTO student(rollNo, name, degree, year, sex, deptNo, advisor) VALUES('CS20B2019','Siddesh','B.Tech','3','MALE',1,'Dr.Jagaddesh')
7 INTO student(rollNo, name, degree, year, sex, deptNo, advisor) VALUES('CS20B2020','Noni','B.Tech','3','MALE',2,'Dr.Venkatesh')
8 INTO student(rollNo, name, degree, year, sex, deptNo, advisor) VALUES('CS19B2000','Venkat','B.Tech','4','MALE',4,'Dr.Tapasil')
9 SELECT 1 FROM dual;
```

7 rows created.



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SQL> INSERT ALL

```

2      INTO student(rollNo, name, degree, year, sex, deptNo, advisor) VALUES('CS21B2026','Abhiram','B.Tech','2','MALE',2,'Dr.Preet')
3      INTO student(rollNo, name, degree, year, sex, deptNo, advisor) VALUES('CS21B2037','Vishnu','B.Tech','2','MALE',2,'Dr.Preet')
4      INTO student(rollNo, name, degree, year, sex, deptNo, advisor) VALUES('CS22B2030','Bannu','B.Tech','1','MALE',1,'Dr.Santhanam')
5      INTO student(rollNo, name, degree, year, sex, deptNo, advisor) VALUES('CS22B2040','Sai','B.Tech','1','MALE',3,'Dr.Ram prasad')
6      INTO student(rollNo, name, degree, year, sex, deptNo, advisor) VALUES('CS20B2019','Siddesh','B.Tech','3','MALE',1,'Dr.Jagaddesh')
7      INTO student(rollNo, name, degree, year, sex, deptNo, advisor) VALUES('CS20B2020','Noni','B.Tech','3','MALE',2,'Dr.Venkatesh')
8      INTO student(rollNo, name, degree, year, sex, deptNo, advisor) VALUES('CS19B2000','Venkat','B.Tech','4','MALE',4,'Dr.Tapasil')
9  SELECT 1 FROM dual;

```

7 rows created.

SQL> INSERT ALL

```

2      INTO department(deptId, name, hod, phone) VALUES('1','CSE','Masilamani',9876543210)
3      INTO department(deptId, name, hod, phone) VALUES('2','CSAI','Ram prasad',1234567890)
4      INTO department(deptId, name, hod, phone) VALUES('3','ECE','Santhanam',9996663330)
5      INTO department(deptId, name, hod, phone) VALUES('4','MECH','Thimmaraju',0333666999)
6      INTO department(deptId, name, hod, phone) VALUES('5','SM','Varadharaju',1111122222)
7      INTO department(deptId, name, hod, phone) VALUES('6','SPANISH','Sergio',9898989898)
8      INTO department(deptId, name, hod, phone) VALUES('7','IT','Vishnu',7777777777)
9  SELECT 1 FROM dual;

```

7 rows created.

SQL> INSERT ALL

```

2      INTO professor(empId, name, sex, startYear, deptNo, phone) VALUES('01','Jagadeesh','MALE',2019,1,1212121212)
3      INTO professor(empId, name, sex, startYear, deptNo, phone) VALUES('02','Masilamani','MALE',2011,2,8989898989)
4      INTO professor(empId, name, sex, startYear, deptNo, phone) VALUES('03','Ram Prasad','MALE',2015,3,9999999999)
5      INTO professor(empId, name, sex, startYear, deptNo, phone) VALUES('04','Bingi','MALE',2013,4,2122128212)
6      INTO professor(empId, name, sex, startYear, deptNo, phone) VALUES('05','Sergio','MALE',2013,5,1234567890)
7      INTO professor(empId, name, sex, startYear, deptNo, phone) VALUES('06','Vishnu','MALE',2020,6,6969696969)
8      INTO professor(empId, name, sex, startYear, deptNo, phone) VALUES('07','Santhanam','MALE',2012,7,9876543210)
9  SELECT 1 FROM dual;

```

7 rows created.

SQL> INSERT ALL

```

2      INTO course(courseId, cname, credits, deptNo) VALUES('CS2008','DBMS',4,1)
3      INTO course(courseId, cname, credits, deptNo) VALUES('CS2003','DSD',4,2)
4      INTO course(courseId, cname, credits, deptNo) VALUES('MA2000','OTML','MALE',4,3)

```



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```
SQL> INSERT ALL
2      INTO course(courseId, cname, credits, deptNo) VALUES('CS2008','DBMS',4,1)
3      INTO course(courseId, cname, credits, deptNo) VALUES('CS2003','DSD',4,2)
4      INTO course(courseId, cname, credits, deptNo) VALUES('MA2000','OTML','MALE',4,3)
5      INTO course(courseId, cname, credits, deptNo) VALUES('AI2007','AI','MALE',4,4)
6      INTO course(courseId, cname, credits, deptNo) VALUES('ML2006','DS','MALE',4,5)
7      INTO course(courseId, cname, credits, deptNo) VALUES('SP2001','SPANISH','MALE',4,6)
8      INTO course(courseId, cname, credits, deptNo) VALUES('IT2004','ITALIAN','MALE',4,7)
9  SELECT 1 FROM dual;
      INTO course(courseId, cname, credits, deptNo) VALUES('MA2000','OTML','MALE',4,3)
      *
```

ERROR at line 4:
ORA-00913: too many values

```
SQL> INSERT ALL
2      INTO enrollment(rollNo, courseId, sem, year, grade) VALUES('CS21B2026','CS2008','2ND',2021,'S')
3      INTO enrollment(rollNo, courseId, sem, year, grade) VALUES('CS21B2026','CS2003','2ND',2021,'A')
4      INTO enrollment(rollNo, courseId, sem, year, grade) VALUES('CS21B2026','MA2000','2ND',2021,'B')
5      INTO enrollment(rollNo, courseId, sem, year, grade) VALUES('CS21B2026','AI2007','2ND',2021,'A')
6      INTO enrollment(rollNo, courseId, sem, year, grade) VALUES('CS21B2026','ML2006','2ND',2021,'B')
7      INTO enrollment(rollNo, courseId, sem, year, grade) VALUES('CS21B2026','SP2001','2ND',2021,'S')
8      INTO enrollment(rollNo, courseId, sem, year, grade) VALUES('CS21B2026','IT2004','2ND',2021,'S')
9  SELECT 1 FROM dual;
```

7 rows created.

```
SQL> INSERT ALL
2      INTO teaching(empId, courseId, sem, year, classRoom) VALUES('01','CS2008','2ND',2023,'H12')
3      INTO teaching(empId, courseId, sem, year, classRoom) VALUES('02','CS2003','2ND',2023,'H12')
4      INTO teaching(empId, courseId, sem, year, classRoom) VALUES('03','MA2000','2ND',2023,'H11')
5      INTO teaching(empId, courseId, sem, year, classRoom) VALUES('04','AI2007','2ND',2023,'H05')
6      INTO teaching(empId, courseId, sem, year, classRoom) VALUES('05','ML2006','2ND',2023,'H25')
7      INTO teaching(empId, courseId, sem, year, classRoom) VALUES('06','SP2001','2ND',2023,'H06')
8      INTO teaching(empId, courseId, sem, year, classRoom) VALUES('01','IT2004','2ND',2023,'H07')
9  SELECT 1 FROM dual;
```

7 rows created.

```
SQL> INSERT ALL
2      INTO preRequisite(preCourseId, courseId) VALUES('11','CS1')
3      INTO preRequisite(preCourseId, courseId) VALUES('12','CS2')
```




```
SQL> SET LINESIZE 300;
SQL> SELECT * FROM student;
```

ROLLNO	NAME	DEGREE	YEAR	SEX	DEPTNO	ADVISOR
CS21B2026	Abhiram	B.Tech	2	MALE	2	Dr.Preet
CS21B2037	Vishnu	B.Tech	2	MALE	2	Dr.Preet
CS22B2030	Bannu	B.Tech	1	MALE	1	Dr.Santhanam
CS22B2040	Sai	B.Tech	1	MALE	3	Dr.Ram prasad
CS20B2019	Siddesh	B.Tech	3	MALE	1	Dr.Jagaddesh
CS20B2020	Noni	B.Tech	3	MALE	2	Dr.Venkatesh
CS19B2000	Venkat	B.Tech	4	MALE	4	Dr.Tapasil

7 rows selected.

```
SQL> SELECT * FROM department;
```

DEPTID	NAME	HOD	PHONE
1	CSE	Masilamani	9876543210
2	CSAI	Ram prasad	1234567890
3	ECE	Santhanam	9996663330
4	MECH	Thimmaraju	333666999
5	SM	Varadharaju	1111122222
6	SPANISH	Sergio	9898989898
7	IT	Vishnu	7777777777

7 rows selected.

```
SQL> SELECT * FROM professor;
```

EMPID	NAME	SEX	STARTYEAR	DEPTNO	PHONE
01	Jagadeesh	MALE	2019	1	1212121212
02	Masilamani	MALE	2011	2	8989898989
03	Ram Prasad	MALE	2015	3	9999999999
04	Bingi	MALE	2013	4	2122128212
05	Sergio	MALE	2013	5	1234567890
06	Vishnu	MALE	2020	6	6969696969
07	Santhanam	MALE	2012	7	9876543210

SQL> SELECT * FROM professor;

EMPID	NAME	SEX	STARTYEAR	DEPTNO	PHONE
01	Jagadeesh	MALE	2019	1	1212121212
02	Masilamani	MALE	2011	2	8989898989
03	Ram Prasad	MALE	2015	3	9999999999
04	Bingi	MALE	2013	4	2122128212
05	Sergio	MALE	2013	5	1234567890
06	Vishnu	MALE	2020	6	6969696969
07	Santhanam	MALE	2012	7	9876543210

7 rows selected.

SQL> SELECT * FROM course;

no rows selected

SQL> SELECT * FROM enrollment;

ROLLNO	COURSEID	SEM	YEAR	GRADE
CS21B2026	CS2008	2ND	2021	S
CS21B2026	CS2003	2ND	2021	A
CS21B2026	MA2000	2ND	2021	B
CS21B2026	AI2007	2ND	2021	A
CS21B2026	ML2006	2ND	2021	B
CS21B2026	SP2001	2ND	2021	S
CS21B2026	IT2004	2ND	2021	S

7 rows selected.

SQL> SELECT * FROM teaching;

EMPID	COURSEID	SEM	YEAR	CLASS
01	CS2008	2ND	2023	H12
02	CS2003	2ND	2023	H12
03	MA2000	2ND	2023	H11
04	AI2007	2ND	2023	H05



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EMPID	COURSEID	SEM	YEAR	CLASS
01	CS2008	2ND	2023	H12
02	CS2003	2ND	2023	H12
03	MA2000	2ND	2023	H11
04	AI2007	2ND	2023	H05
05	ML2006	2ND	2023	H25
06	SP2001	2ND	2023	H06
01	IT2004	2ND	2023	H07

7 rows selected.

SQL> SELECT * FROM preRequisite;

PRECOURSEI	COURSEID
11	CS1
12	CS2
13	CS3
14	CS4
15	CS5
16	CS6
17	CS7

7 rows selected.

SQL> DELETE FROM student WHERE year='3' OR year='4';

3 rows deleted.

SQL> SELECT * FROM student;

ROLLNO	NAME	DEGREE	YEAR	SEX	DEPTNO	ADVISOR
CS21B2026	Abhiram	B.Tech	2	MALE	2	Dr.Preet
CS21B2037	Vishnu	B.Tech	2	MALE	2	Dr.Preet
CS22B2030	Bannu	B.Tech	1	MALE	1	Dr.Santhanam
CS22B2040	Sai	B.Tech	1	MALE	3	Dr.Ram prasad

SQL> ALTER TABLE student ADD(email-id varchar(50));
 ALTER TABLE student ADD(email-id varchar(50))

ROLLNO	NAME	DEGREE	YEAR	SEX	DEPTNO	ADVISOR
CS21B2026	Abhiram	B.Tech	2	MALE	2	Dr.Preet
CS21B2037	Vishnu	B.Tech	2	MALE	2	Dr.Preet
CS22B2030	Bannu	B.Tech	1	MALE	1	Dr.Santhanam
CS22B2040	Sai	B.Tech	1	MALE	3	Dr.Ram prasad

SQL> SELECT * FROM professor;

EMPID	NAME	SEX	STARTYEAR	DEPTNO	PHONE
01	Jagadeesh	MALE	2019	1	1212121212
02	Masilamani	MALE	2011	2	8989898989
03	Ram Prasad	MALE	2015	3	9999999999
04	Bingi	MALE	2013	4	2122128212
05	Sergio	MALE	2013	5	1234567890
06	Vishnu	MALE	2020	6	6969696969
07	Santhanam	MALE	2012	7	9876543210

7 rows selected.

SQL> ALTER TABLE professor ADD(email-id varchar(50));
ALTER TABLE professor ADD(email-id varchar(50))
*

ERROR at line 1:
ORA-00902: invalid datatype

SQL> UPDATE professor SET email-id ='jagadeesh@iiitdm.ac.in' WHERE name ='jagadeesh';
UPDATE professor SET email-id ='jagadeesh@iiitdm.ac.in' WHERE name ='jagadeesh'
*

ERROR at line 1:
ORA-00927: missing equal sign

SQL> UPDATE professor SET email-id ='masilamani@iiitdm.ac.in' WHERE name ='masilamani';
ORA-00927: missing equal sign

ERROR at line 1:
ORA-00927: missing equal sign

SQL> SELECT * FROM professor
2 ;

EMPID	NAME	SEX	STARTYEAR	DEPTNO	PHONE
01	Jagadeesh	MALE	2019	1	1212121212
02	Masilamani	MALE	2011	2	8989898989
03	Ram Prasad	MALE	2015	3	9999999999
04	Bingi	MALE	2013	4	2122128212
05	Sergio	MALE	2013	5	1234567890
06	Vishnu	MALE	2020	6	6969696969
07	Santhanam	MALE	2012	7	9876543210

7 rows selected.

SQL> ALTER TABLE student ADD(emailid varchar(50));

Table altered.

SQL> UPDATE student SET emailid = 'CS21B2026@iiitdm.ac.in' WHERE rollNo='CS21B2026';

1 row updated.

SQL> UPDATE student SET emailid = 'CS21B2037@iiitdm.ac.in' WHERE rollNo='CS21B2037';

1 row updated.

SQL> UPDATE student SET emailid = 'CS22B2030@iiitdm.ac.in' WHERE rollNo='CS22B2030';

1 row updated.

SQL> UPDATE student SET emailid = 'CS22B2040@iiitdm.ac.in' WHERE rollNo='CS22B2040';

ORA-00927: missing equal sign

1 row updated.

SQL> SELECT * FROM student;

ROLLNO	NAME	DEGREE	YEAR	SEX	DEPTNO	ADVISOR	EMAILID
CS21B2026	Abhiram	B.Tech	2	MALE	2	Dr.Preet	CS21B2026@iiitdm.ac.in
CS21B2037	Vishnu	B.Tech	2	MALE	2	Dr.Preet	CS21B2037@iiitdm.ac.in
CS22B2030	Bannu	B.Tech	1	MALE	1	Dr.Santhanam	CS22B2030@iiitdm.ac.in
CS22B2040	Sai	B.Tech	1	MALE	3	Dr.Ram prasad	CS22B2040@iiitdm.ac.in

SQL> SELECT * FROM professor;

EMPID	NAME	SEX	STARTYEAR	DEPTNO	PHONE
01	Jagadeesh	MALE	2019	1	1212121212
02	Masilamani	MALE	2011	2	8989898989
03	Ram Prasad	MALE	2015	3	9999999999
04	Bingi	MALE	2013	4	2122128212
05	Sergio	MALE	2013	5	1234567890
06	Vishnu	MALE	2020	6	6969696969
07	Santhanam	MALE	2012	7	9876543210

7 rows selected.

SQL> ALTER TABLE professor ADD(emailid varchar(50));

Table altered.

SQL> UPDATE professor SET emailid ='jagadeesh@iiitdm.ac.in' WHERE name ='jagadeesh';

0 rows updated.

SQL> UPDATE professor SET emailid ='masilamani@iiitdm.ac.in' WHERE name ='masilamani';

0 rows updated.

ORA-00927: missing equal sign

SQL> SELECT * FROM professor;

EMPID	NAME	SEX	STARTYEAR	DEPTNO	PHONE	EMAILID
01	Jagadeesh	MALE	2019	1	1212121212	
02	Masilamani	MALE	2011	2	8989898989	
03	Ram Prasad	MALE	2015	3	9999999999	
04	Bingi	MALE	2013	4	2122128212	
05	Sergio	MALE	2013	5	1234567890	
06	Vishnu	MALE	2020	6	6969696969	
07	Santhanam	MALE	2012	7	9876543210	

7 rows selected.

SQL> ALTER TABLE student ADD(emailid varchar(50));

ALTER TABLE student ADD(emailid varchar(50))

*

ERROR at line 1:

ORA-01430: column being added already exists in table

SQL> UPDATE student SET emailid ='CS21B2026@iiitdm.ac.in' WHERE rollNo='CS21B2026';

1 row updated.

SQL> UPDATE student SET emailid ='CS21B2037@iiitdm.ac.in' WHERE rollNo='CS21B2037';

1 row updated.

SQL> UPDATE student SET emailid ='CS22B2030@iiitdm.ac.in' WHERE rollNo='CS22B2030';

1 row updated.

SQL> UPDATE student SET emailid ='CS22B2040@iiitdm.ac.in' WHERE rollNo='CS22B2040';

1 row updated.

ORA-00927: missing equal sign

1 row updated.

SQL> SELECT * FROM student;

ROLLNO	NAME	DEGREE	YEAR	SEX	DEPTNO	ADVISOR	EMAILID
CS21B2026	Abhiram	B.Tech	2	MALE	2	Dr.Preet	CS21B2026@iiitdm.ac.in
CS21B2037	Vishnu	B.Tech	2	MALE	2	Dr.Preet	CS21B2037@iiitdm.ac.in
CS22B2030	Bannu	B.Tech	1	MALE	1	Dr.Santhanam	CS22B2030@iiitdm.ac.in
CS22B2040	Sai	B.Tech	1	MALE	3	Dr.Ram prasad	CS22B2040@iiitdm.ac.in

SQL> SELECT * FROM professor;

EMPID	NAME	SEX	STARTYEAR	DEPTNO	PHONE	EMAILID
01	Jagadeesh	MALE	2019	1	1212121212	
02	Masilamani	MALE	2011	2	8989898989	
03	Ram Prasad	MALE	2015	3	9999999999	
04	Bingi	MALE	2013	4	2122128212	
05	Sergio	MALE	2013	5	1234567890	
06	Vishnu	MALE	2020	6	6969696969	
07	Santhanam	MALE	2012	7	9876543210	

7 rows selected.

SQL> ALTER TABLE professor ADD(emailid varchar(50));

ALTER TABLE professor ADD(emailid varchar(50))

*

ERROR at line 1:

ORA-01430: column being added already exists in table

SQL> UPDATE professor SET emailid ='jagadeesh@iiitdm.ac.in' WHERE name ='Jagadeesh';

1 row updated.

SQL> UPDATE professor SET emailid ='masilamani@iiitdm.ac.in' WHERE name ='Masilamani';

ORA-00927: missing equal sign

1 row updated.

SQL> SELECT * FROM professor;

EMPID	NAME	SEX	STARTYEAR	DEPTNO	PHONE	EMAILID
01	Jagadeesh	MALE	2019	1	1212121212	jagadeesh@iiitdm.ac.in
02	Masilamani	MALE	2011	2	8989898989	masilamani@iiitdm.ac.in
03	Ram Prasad	MALE	2015	3	9999999999	ramprasad@iiitdm.ac.in
04	Bingi	MALE	2013	4	2122128212	bingi@iiitdm.ac.in
05	Sergio	MALE	2013	5	1234567890	sergio@iiitdm.ac.in
06	Vishnu	MALE	2020	6	6969696969	vishnu@iiitdm.ac.in
07	Santhanam	MALE	2012	7	9876543210	santhanam@iiitdm.ac.in

7 rows selected.

SQL>

ORA-00927: missing equal sign

SQL> UPDATE department SET hod = 'Jagadeesh',phone=9090909090 WHERE deptId='1';

1 row updated.

SQL> UPDATE department SET hod = 'Nachiketa',phone=9999988888 WHERE deptId='2';

1 row updated.

SQL> UPDATE department SET hod = 'Tapasil',phone=9090909090 WHERE deptId='3';

1 row updated.

SQL> UPDATE department SET hod = 'Gurunathan',phone=9090909090 WHERE deptId='4';

1 row updated.

SQL> SELECT * FROM department;

DEPTID	NAME	HOD	PHONE
1	CSE	Jagadeesh	9090909090
2	CSAI	Nachiketa	9999988888
3	ECE	Tapasil	9090909090
4	MECH	Gurunathan	9090909090
5	SM	Varadharaju	1111122222
6	SPANISH	Sergio	9898989898
7	IT	Vishnu	7777777777

7 rows selected.

SQL> UPDATE professor SET phone =9848756409 WHERE name = 'Bingi';

1 row updated.

SQL> UPDATE professor SET phone =9912347569 WHERE name = 'Sergio';

SQL> UPDATE department SET hod = 'Gurunathan',phone=9090909090 WHERE deptId='4';

SQL> SELECT * FROM department;

DEPTID	NAME	HOD	PHONE
1	CSE	Jagadeesh	9090909090
2	CSAI	Nachiketa	9999988888
3	ECE	Tapasil	9090909090
4	MECH	Gurunathan	9090909090
5	SM	Varadharaju	1111122222
6	SPANISH	Sergio	9898989898
7	IT	Vishnu	7777777777

7 rows selected.

SQL> UPDATE professor SET phone =9848756409 WHERE name ='Bingi';

1 row updated.

SQL> UPDATE professor SET phone =9912347569 WHERE name ='Sergio';

1 row updated.

SQL> SELECT * FROM professor;

EMPID	NAME	SEX	STARTYEAR	DEPTNO	PHONE	EMAILID
01	Jagadeesh	MALE	2019	1	1212121212	jagadeesh@iiitdm.ac.in
02	Masilamani	MALE	2011	2	8989898989	masilamani@iiitdm.ac.in
03	Ram Prasad	MALE	2015	3	9999999999	ramprasad@iiitdm.ac.in
04	Bingi	MALE	2013	4	9848756409	bingi@iiitdm.ac.in
05	Sergio	MALE	2013	5	9912347569	sergio@iiitdm.ac.in
06	Vishnu	MALE	2020	6	6969696969	vishnu@iiitdm.ac.in
07	Santhanam	MALE	2012	7	9876543210	santhanam@iiitdm.ac.in

7 rows selected.

7 rows selected.



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