**AMERICAN INTERNATIONAL UNIVERSITY- BANGLADESH**

Course: Introduction to Database

Section: H

Course Instructor: Rifat Tasnim Anannya

Project Name: Travel Agency Database Management System

Date of Submission: 11 December 2019

|  |  |
| --- | --- |
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| Name: ATIQULLAH HABIB | ID: 19-40022-1 | Sec: H |

CO1: Solve problems of Relational Algebra to interpret complex engineering problems

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| --- | --- | --- | --- | --- |
| Category | Inadequate (1) | Satisfactory(2) | Good(3-4) | Excellent(5) |
| Syntax |  |  |  |  |
| Correctness |  |  |  |  |
| Standard |  |  |  |  |

CO2: Design ER Diagram to solve complex engineering problems

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Category | Inadequate (1) | Satisfactory(2) | Good(3-4) | Excellent(5) |
| Syntax |  |  |  |  |
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| Standard |  |  |  |  |

CO3: Demonstrate DDL, DML and SQL using Oracle

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
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| Syntax |  |  |  |  |
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| Standard |  |  |  |  |

|  |  |  |
| --- | --- | --- |
| Name: ANINDITA ROY | ID: 19-40001-1 | Sec: H |

CO1: Solve problems of Relational Algebra to interpret complex engineering problems

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|  |  |  |
| --- | --- | --- |
| Name: MD MUSFIQUR RAHMAN | ID: 19-40008-1 | Sec: H |

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CO2: Design ER Diagram to solve complex engineering problems

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| Standard |  |  |  |  |

|  |  |  |
| --- | --- | --- |
| Name: MOHAMMAD NAHIAN BIN EUSUF | ID: 18-39216-3 | Sec: H |

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CO2: Design ER Diagram to solve complex engineering problems

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MENU

TOPIC

1. Introduction
2. ER Diagram
3. Normalization
4. DDL & DML
5. Constraint
6. Sequence
7. Query Question
8. Relational Algebra

**Introduction**

Travel agency is identified by t\_id, and its name, age, address, contact, email, salary must be recorded. And a travel agency has at least one client. Travel agency has many contact and email.

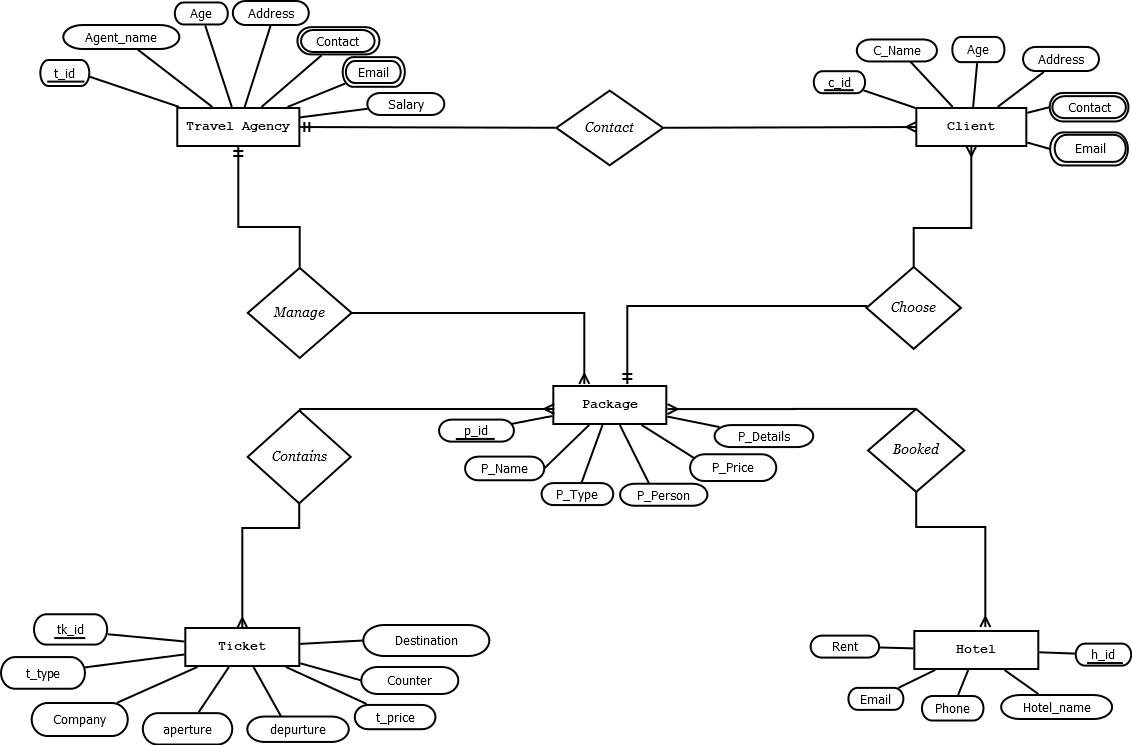
Clients are identified by c\_id. For each client, the name, age, address, contact and email must be recorded. Client has many contact and email.

package is identified by p\_id and name, type, person, price, details must be recorded. Travel agency manages several packages and several clients choose one package for them.

Each Hotel has a h\_id, name, phone, Email, rent. Package is including Hotel.

For ticket tk\_id, type, company, aperture, departure, price, counter and destination must be recorded. And package contains several types of tickets.

**ER Diagram**



**Normalization**

Contact: (T\_id, agent\_name, age, address, contact, email, job, salary, C\_id, c\_name, age, address, contact, email)

1NF → TRAVEL\_AGENCY

CLIENT

2NF → T\_id, agent\_name, age, address, contact, email, job, salary

C\_id, c\_name, age, address, contact, email

3NF → No transitive dependency.

Table list for contact:

1. T\_id, agent\_name, age, address, salary

2. T\_id, contact→ composite primary key

3. T\_id, email→ composite primary key

4. C\_id, c\_name, age, address, T\_id, P\_id

5. C\_id, contact→ composite primary key

6. C\_id, email→ composite primary key

Manage: (T\_id, agent\_name, age, address, contact, email, job, salary, P\_id, p\_name, p\_type, p\_person, p\_price, p\_details)

1NF→ Contact is a multivalued attribute

Email is a multivalued attribute

2NF→ T\_id, agent\_name, age, address, contact, email, job, salary

P\_id, p\_name, p\_type, p\_person, p\_price, p\_details

3NF→ T\_id, agent\_name, age, address, contact, email

P\_id, p\_name

P2\_id, p\_type, p\_person, p\_price, p\_details

Table list from manage:

7. T\_id, agent\_name, age, address, job, salary

8. T\_id, contact→ composite primary key

9. T\_id, email→ composite primary key

10. P\_id, p\_name, P2\_id, T-id

11. P2\_id, p\_type, p\_person, p\_price, p\_details

Choose: (C\_id, c\_name, age, address, contact, email, P\_id, p\_name, p\_type, p\_person, p\_price, p\_details)

1NF→ Contact is a multivalued attribute.

Email is a multivalued attribute.

2NF→ C\_id, c\_name, age, address, contact, email

P\_id, p\_name, p\_type, p\_person, p\_price, p\_details

3NF→ C\_id, C\_name, age, address, contact, email

P\_id, p\_name

Ps\_id, p\_type, p\_person, p\_price, p\_details

Table list from choose:

12. C\_id, C\_name, age, address, P\_id

13. C\_id, contact→ composite primary key

14. C\_id, email→ composite primary key

15. P\_id, p\_name, P2-id

16. P2\_id, p\_type, p\_person, p\_price, p\_details

Contains: (P\_id, p\_name, p\_type, p\_person, p\_price, p\_details, TK\_id, t\_type, company, aperture, departure, t\_price, counter, destination)

1NF→ No multivalued attribute

2NF→ P\_id, p\_name, p\_type, p\_person, p\_price, p\_details

TK\_id, t\_type, company, aperture, departure, t\_price, counter, destination

3NF→ P\_id, p\_name

p2\_id, p\_type, p\_person, p\_price, p\_details

TK\_id, company, aperture, departure, t\_type, t\_price, counter, destination

Table list from contains:

17. P\_id, p\_name, p\_details, P2\_id

18. P2\_id, p\_type, p\_person, p\_price, p\_details

19. TK\_id, company, aperture, departure, t\_type, t\_price, counter, destination

20. N1\_id, P\_id, tk\_id

Booked: (P\_id, p\_name, p\_person, p\_price, p\_details, H\_id, hotel\_name, phone, email, rent)

1NF→ No multivalued attribute.

2NF→ P\_id, p\_name, p\_type, p\_person, p\_price, p\_details

H\_id, hotel\_name, phone, email, rent

3NF→ P\_id, p\_name

P2\_id, P\_type, p\_person, p\_price, p\_details

H\_id, hotel\_name, phone, email, rent

Table list from booked:

21. P\_id, p\_name, P2\_id

22. P2\_id, p\_type, p\_person, p\_price, p\_details

23. H\_id, hotel\_name, phone, email, rent

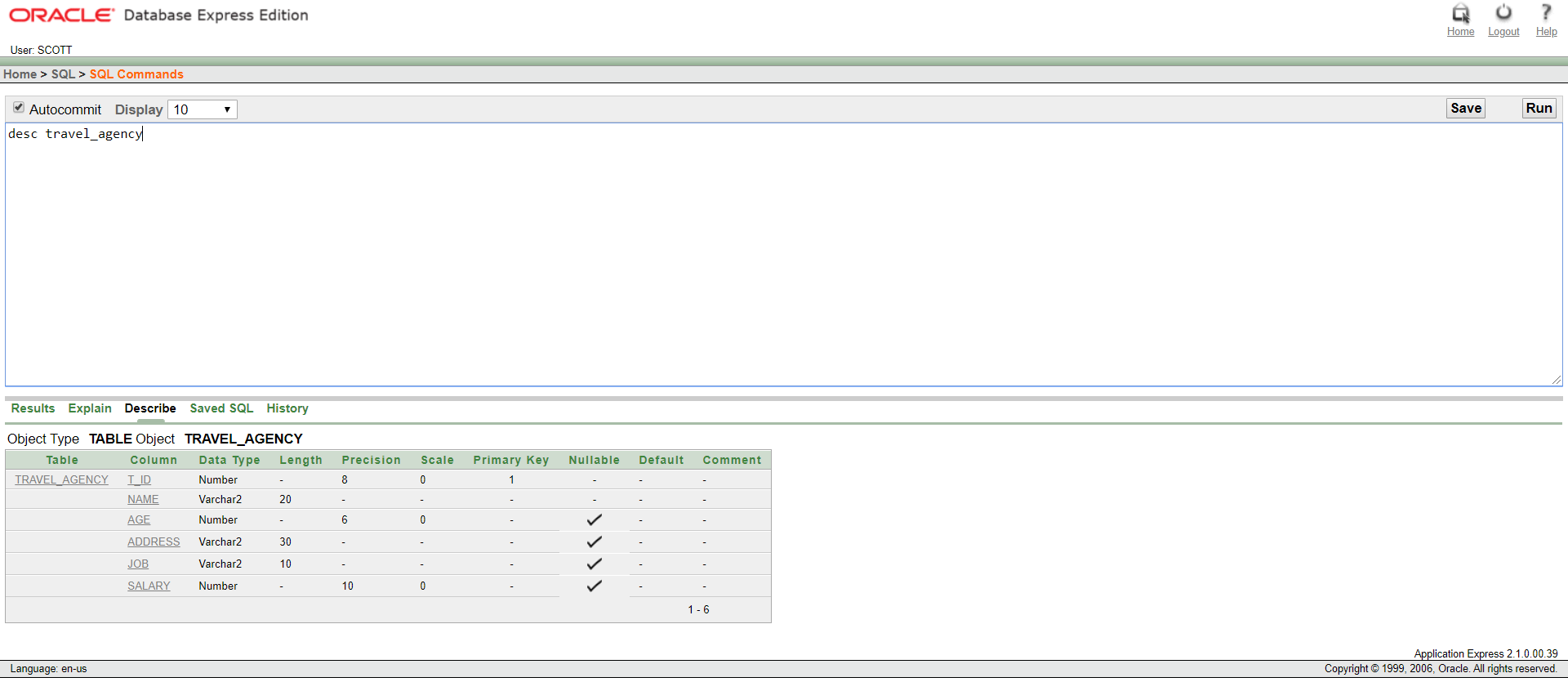
24. N2\_id, P\_id, H\_id

|  |  |  |
| --- | --- | --- |
| Table number | Table name | Column |
| 01 | TRAVEL\_ANGENCY | T-id, agent\_name, age, address, job, salary |
| 02 | TA\_CONTACT | T\_id, contact→ composite primary key |
| 03 | TA\_EMAIL | T\_id, email→ composite primary key |
| 04 | CLIENT | C\_id, c\_name, age, address, T\_id, P\_id |
| 05 | C\_CONTACT | C\_id, contact→ composite primary key |
| 06 | C\_EMAIL | C\_id, email→ composite primary key |
| 07 | PACKAGE | P\_id, p\_name, P2\_id, T\_id |
| 08 | PACKAGE \_2 | P2\_id, P\_type, p\_person, p\_price, p\_details |
| 09 | TICKET | TK\_id,company,aperture,departure,t\_type,t\_price,counter,destination |
| 10 | NEW\_TABLE\_1 | N1\_id, P\_id, TK\_id |
| 11 | HOTEL | H\_id, hotel\_name, phone, email, rent |
| 12 | NEW\_TABLE\_2 | N2\_id, P\_id, H\_id |

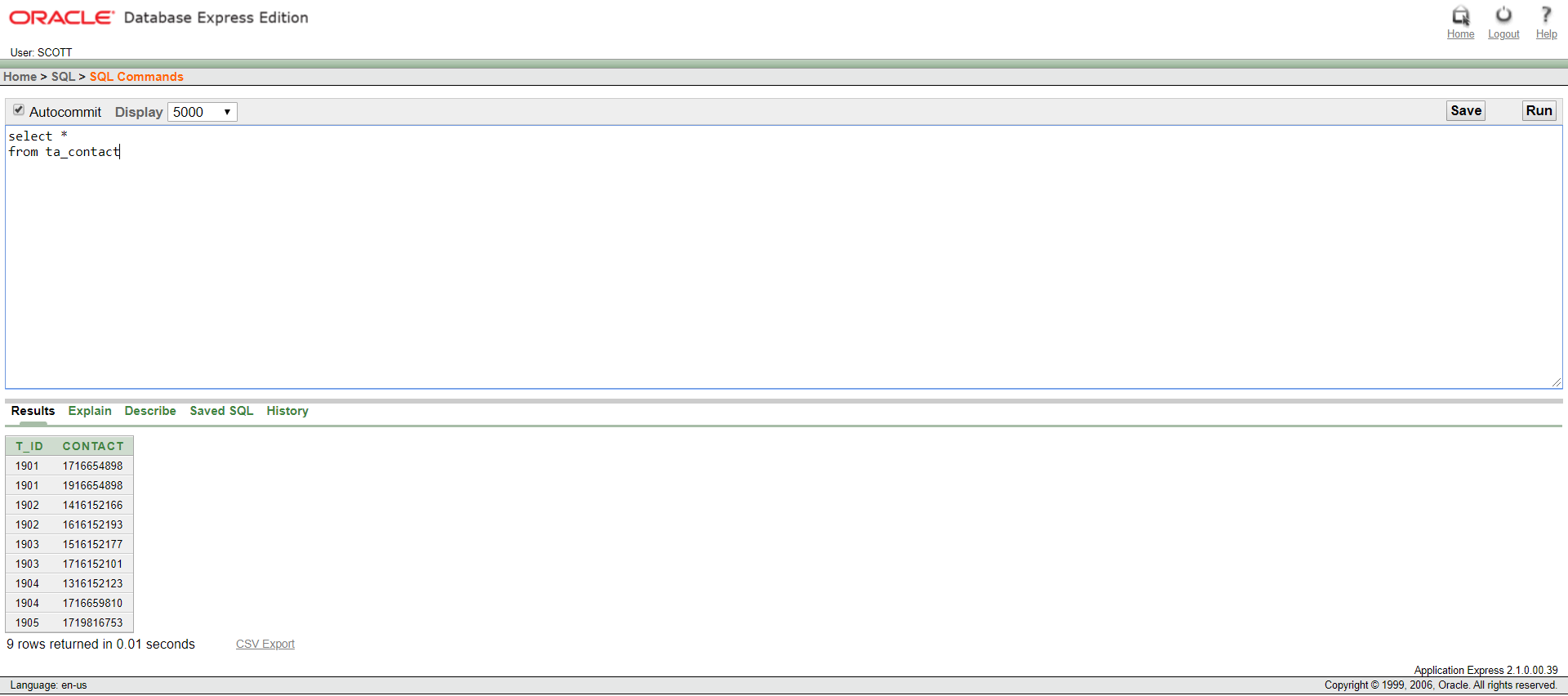
Final table list:

**DDL & DML**

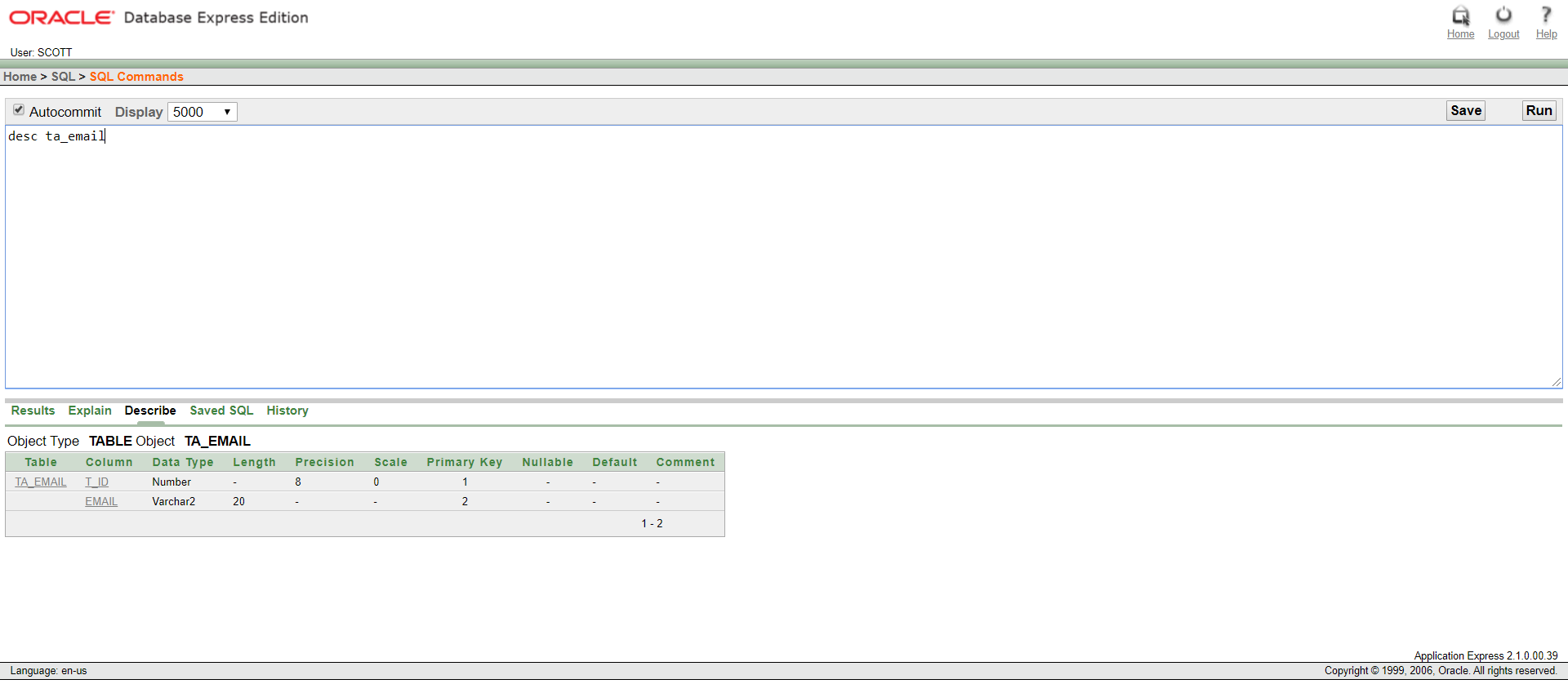
TRAVEL\_AGENCY:



Description of TRAVEL\_AGENCY



Description of TA\_CONTACT



Description of TA\_EMAIL

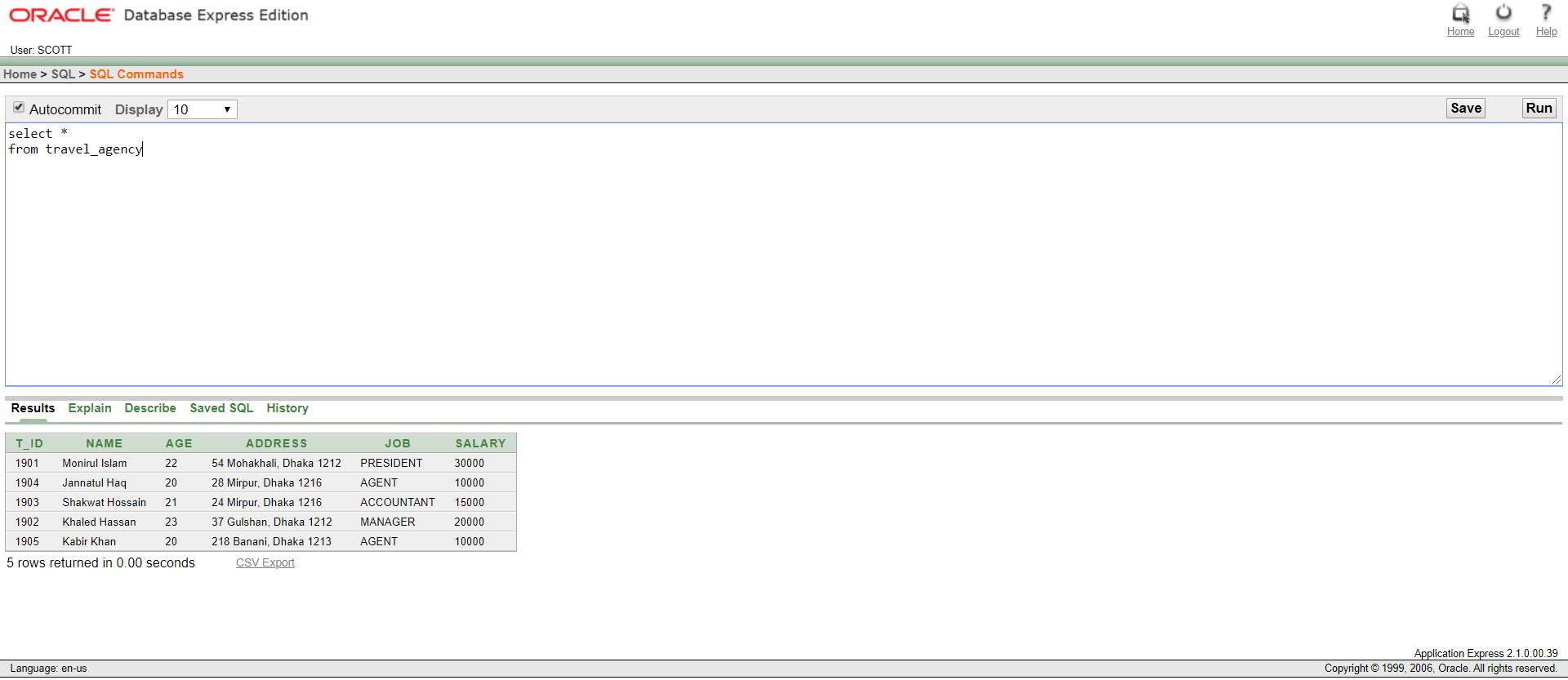


Table: TRAVEL\_AGENCY

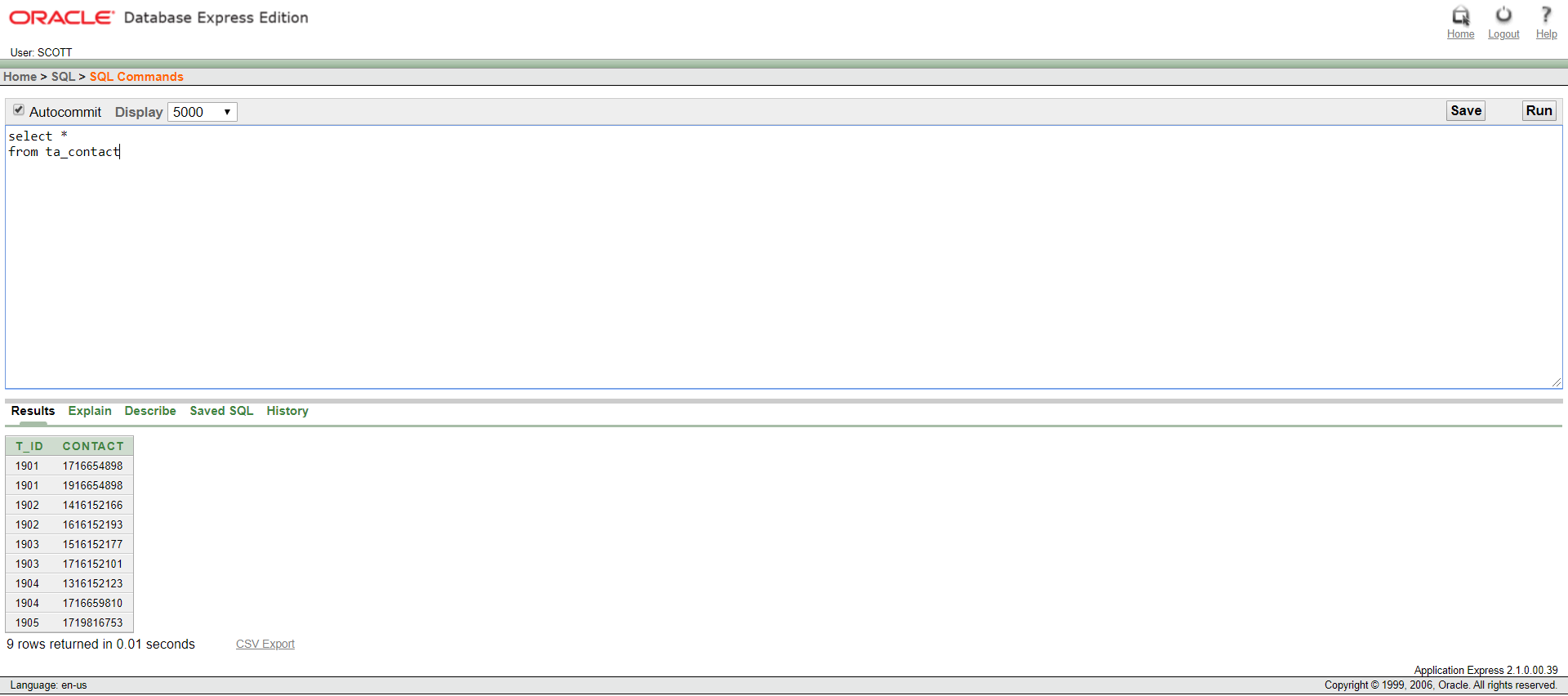


Table: TA\_CONTACT

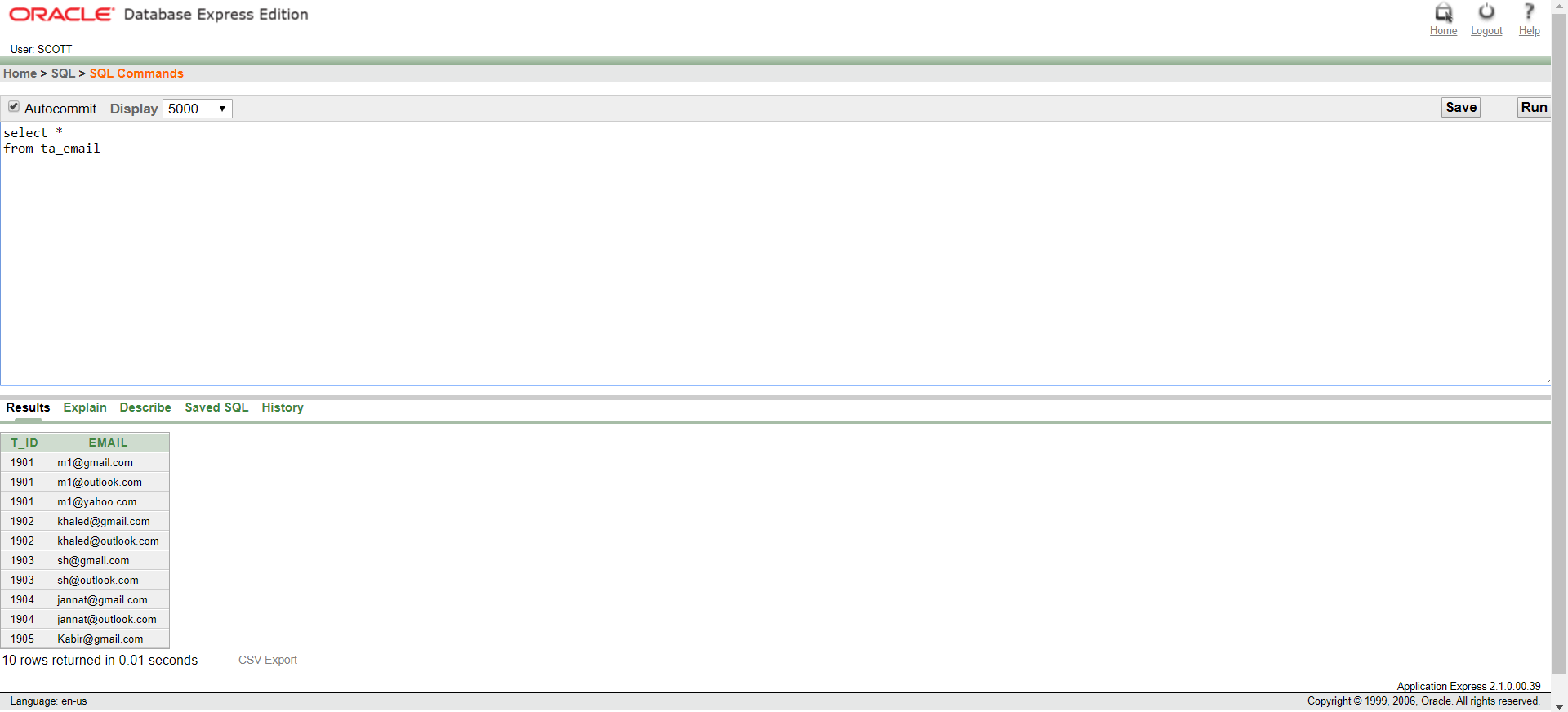
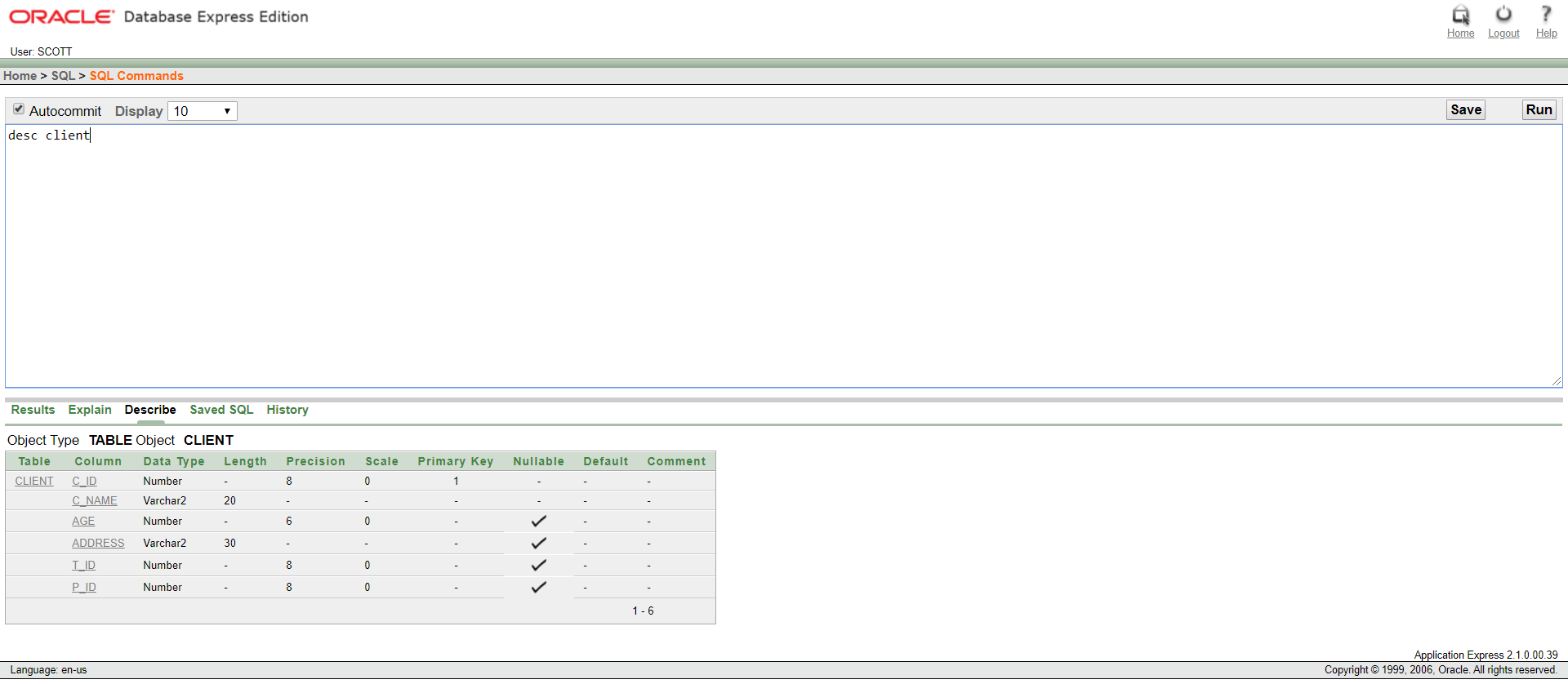
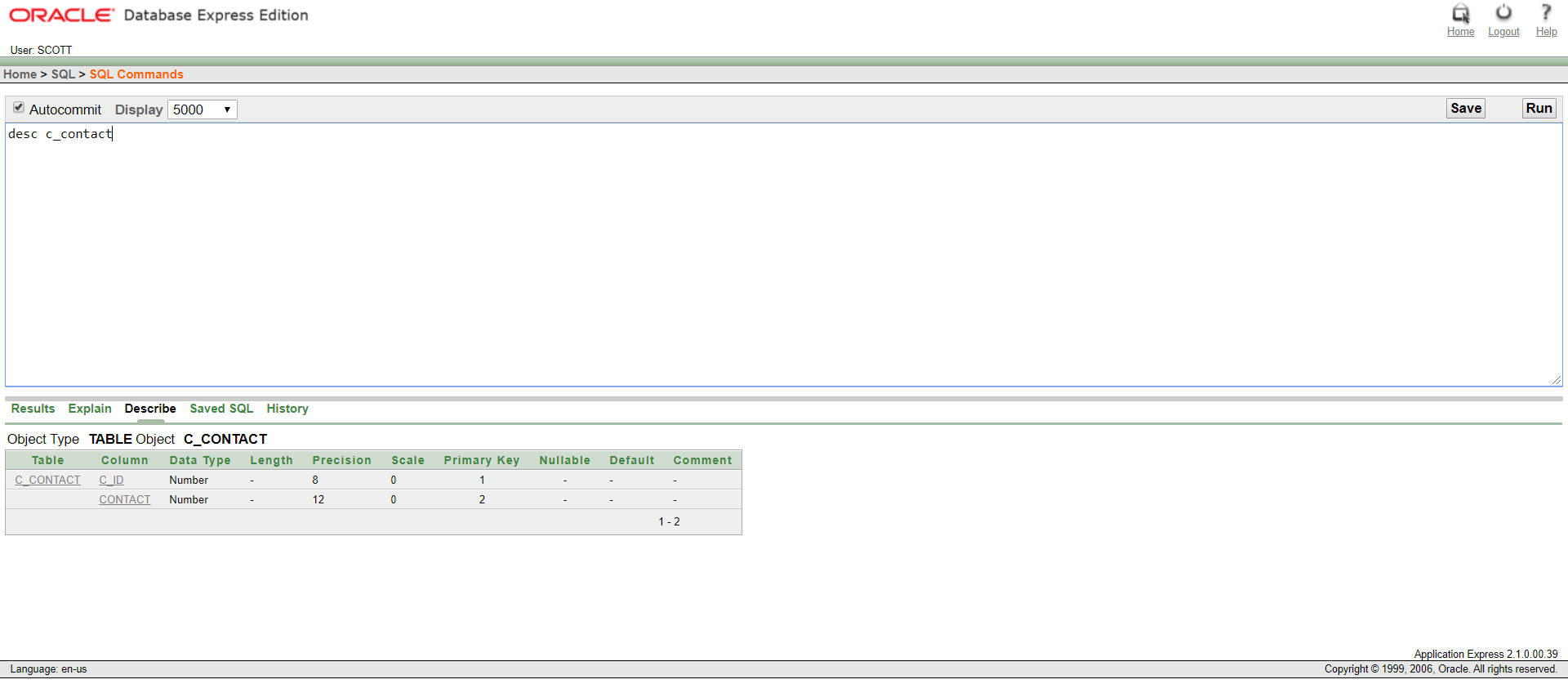


Table: TA\_EMAIL

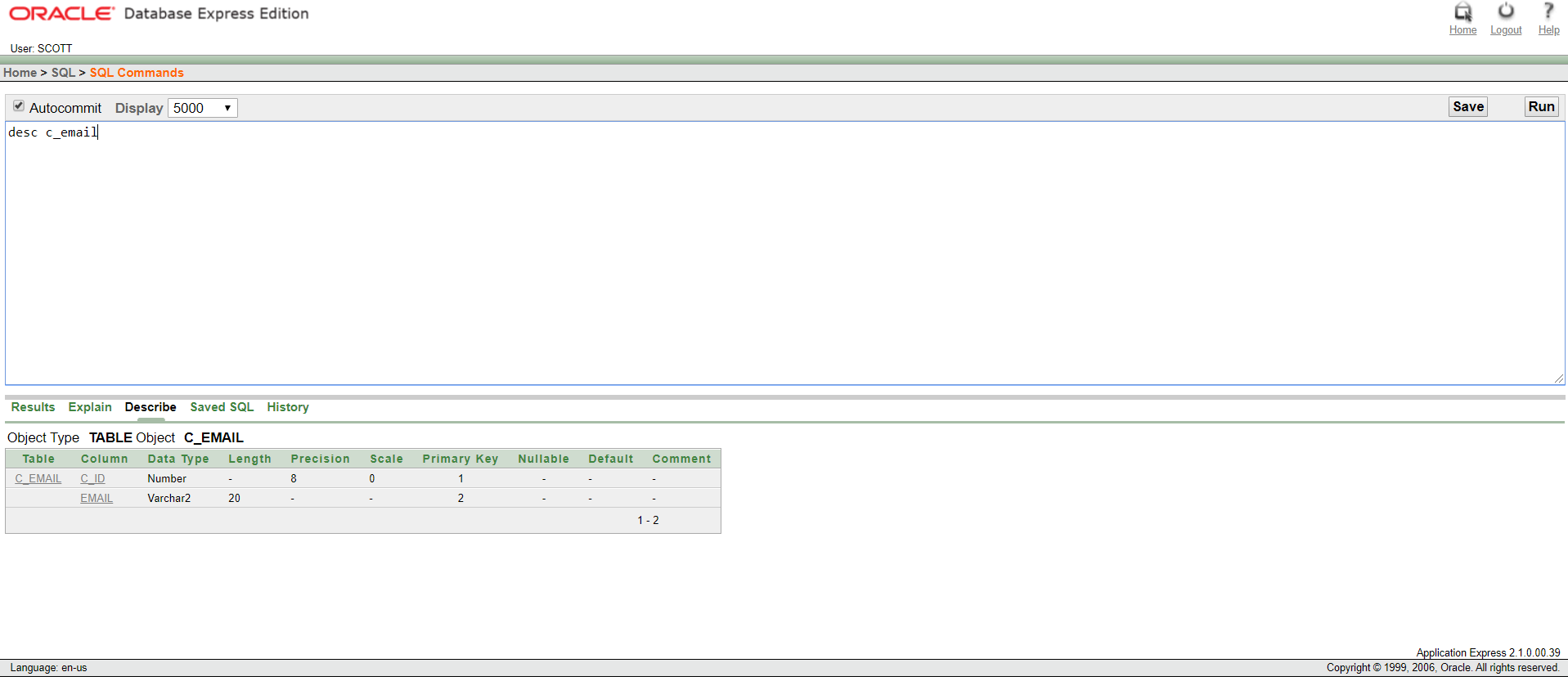
CLIENT:



Description of CLIENT



Description of C\_CONTACT



Description of C\_EMAIL

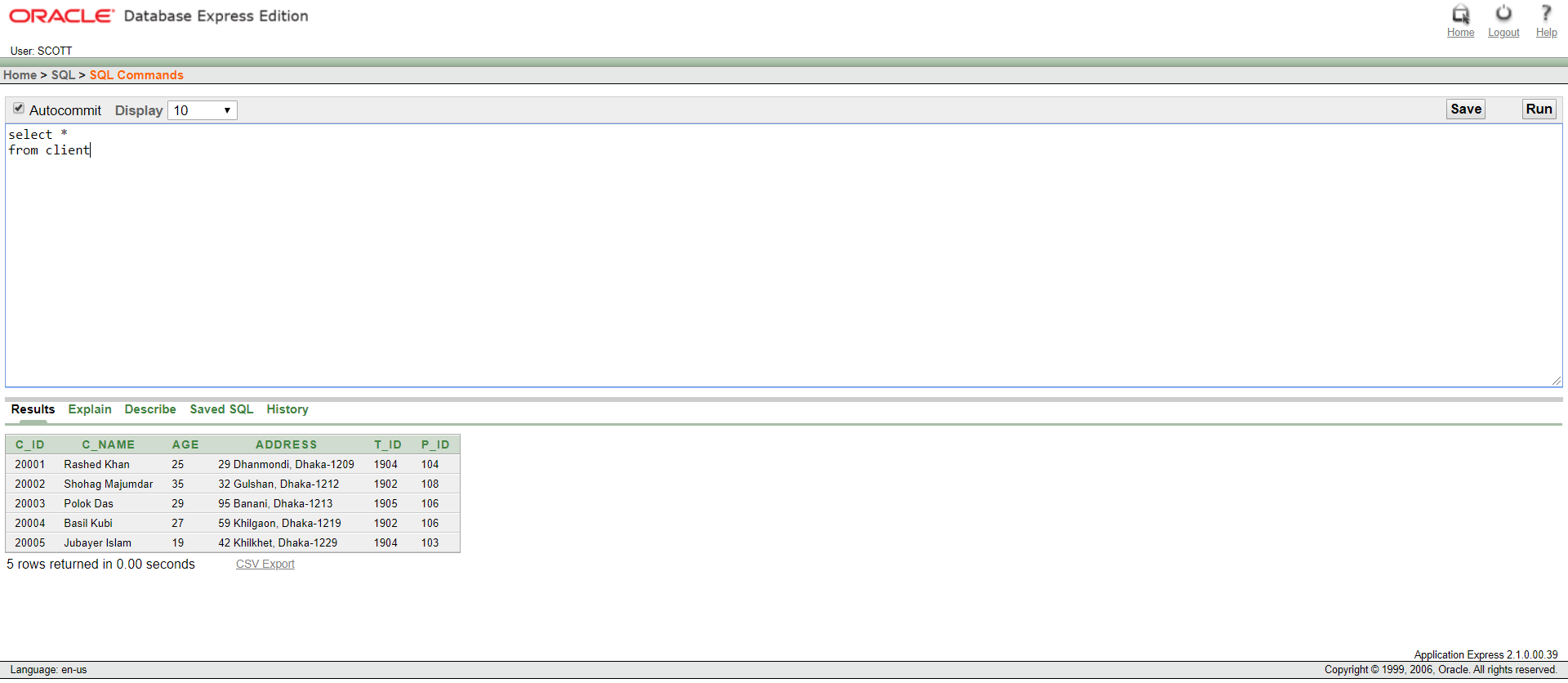


Table: CLIENT

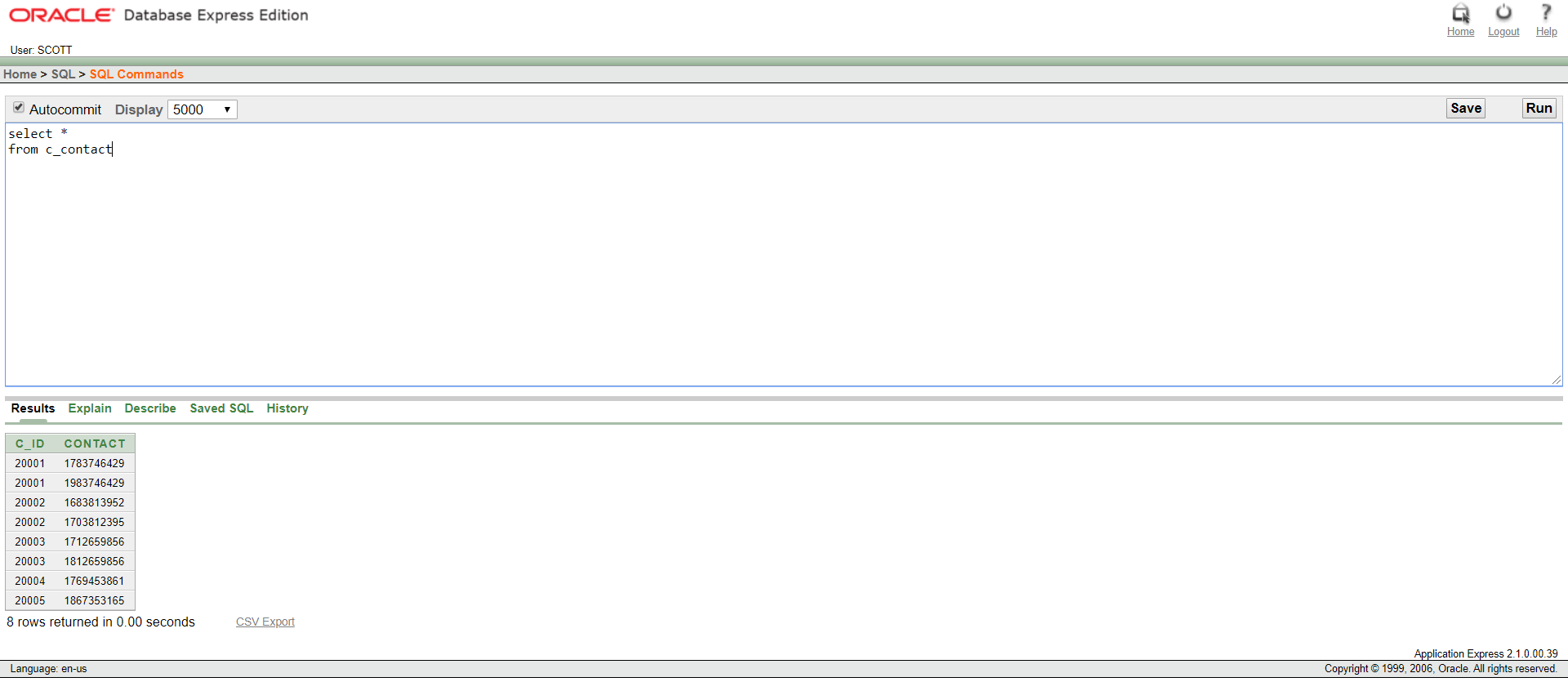


Table: C\_CONTACT

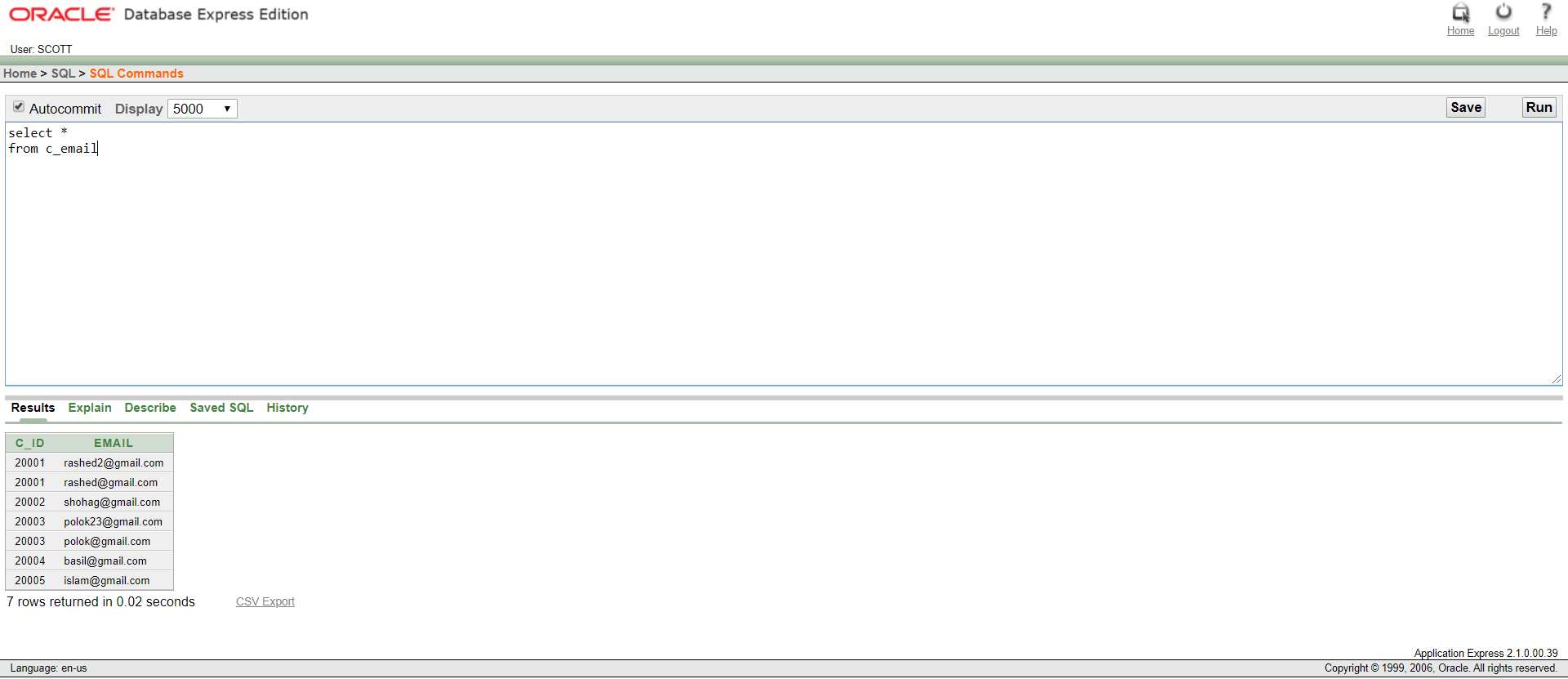
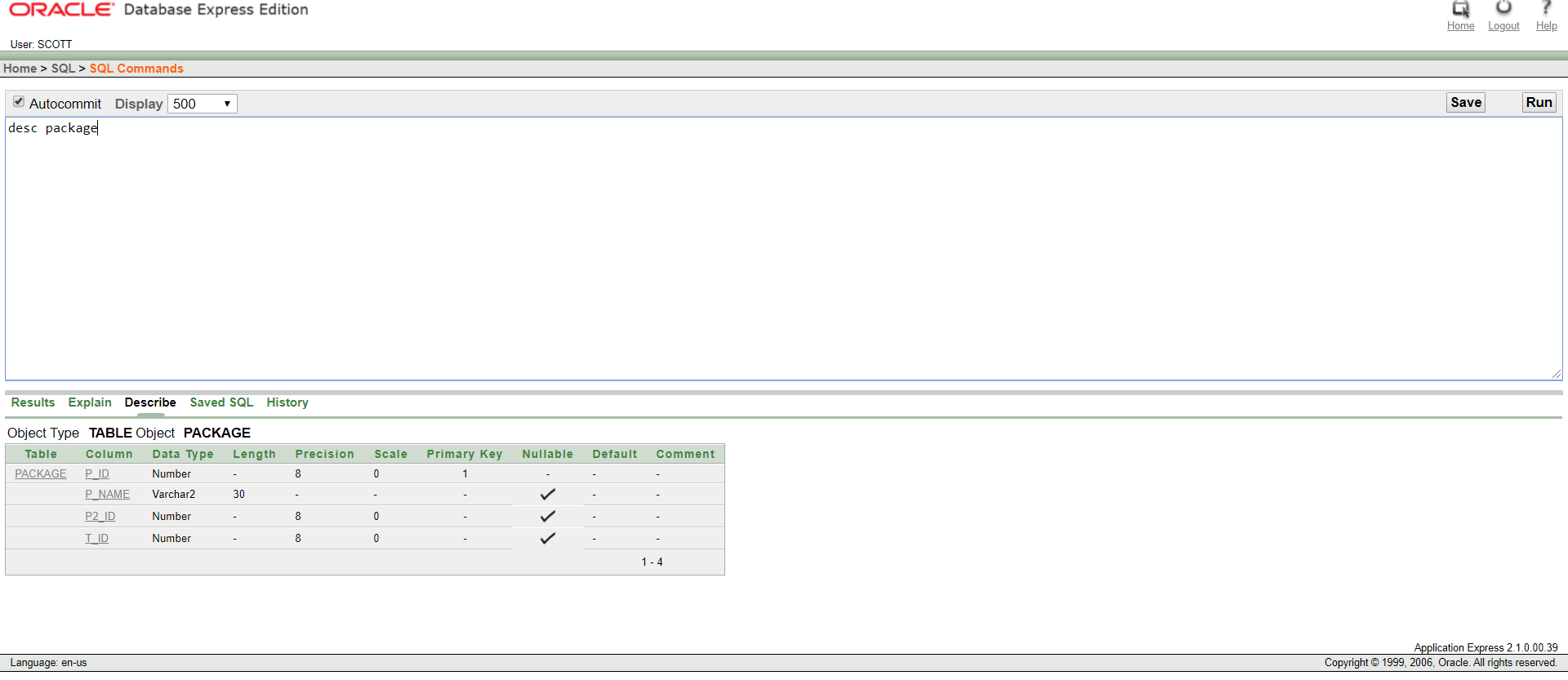


Table: C\_EMAIL

PACKAGE:



Description of PACKAGE

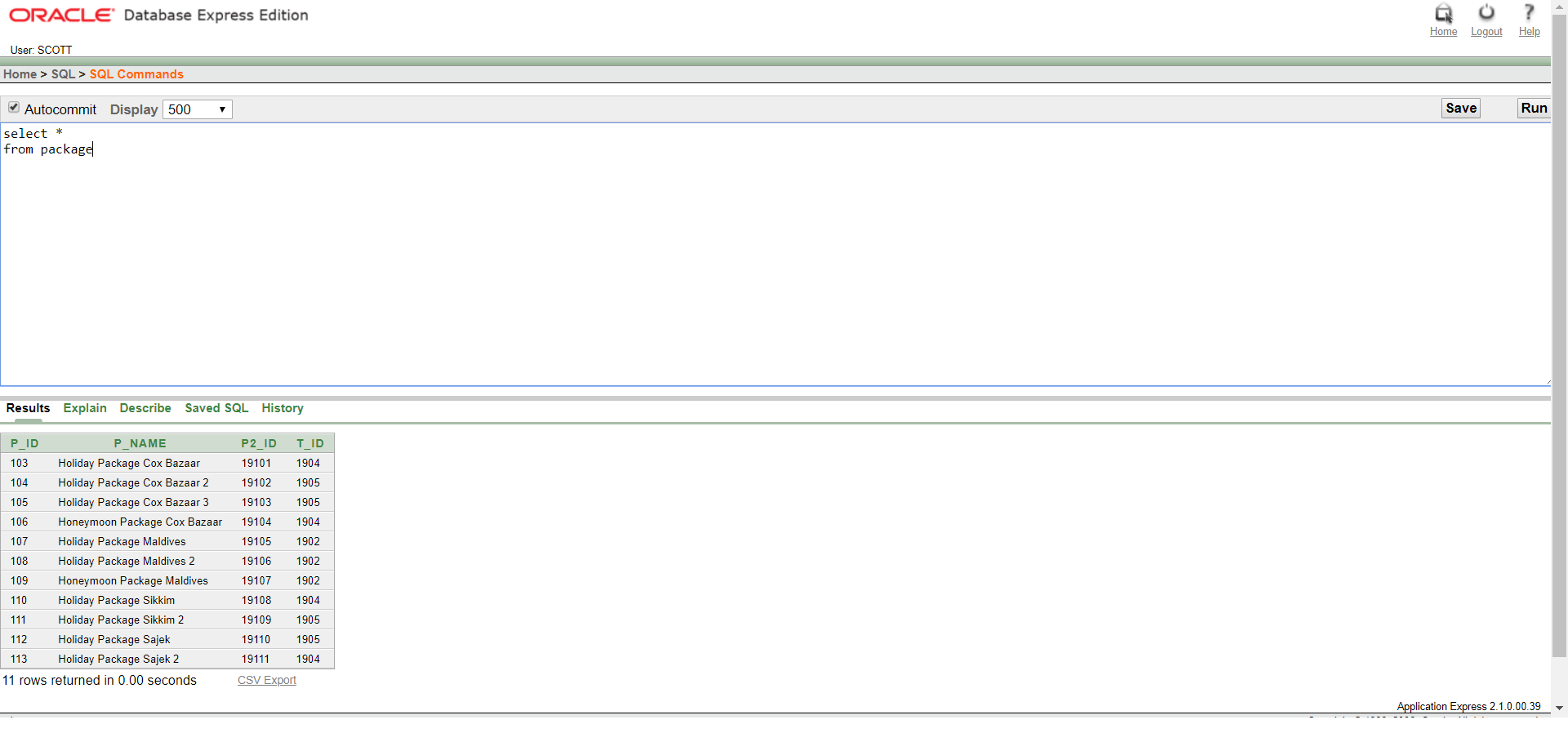
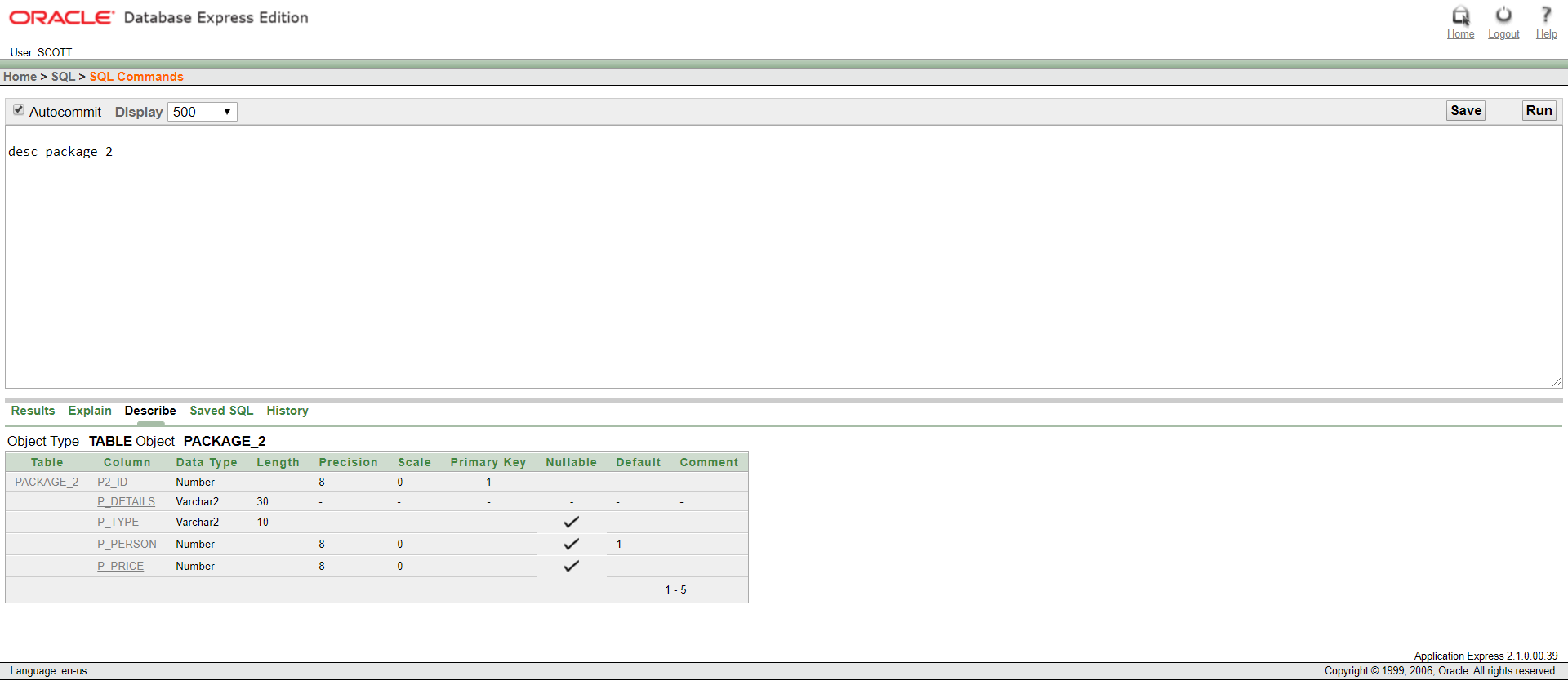


Table: PACKAGE

PACKAGE\_2:



Description of PACKAGE\_2

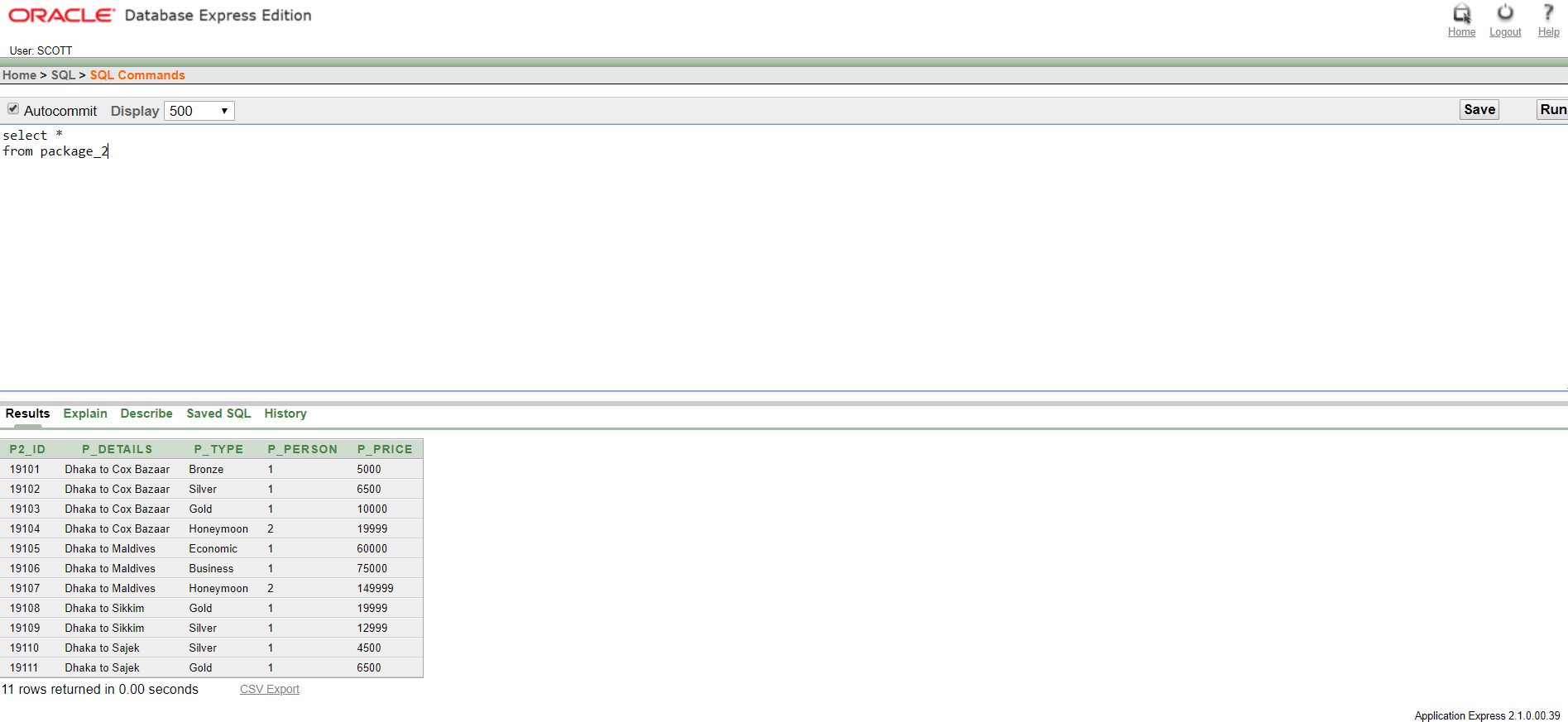
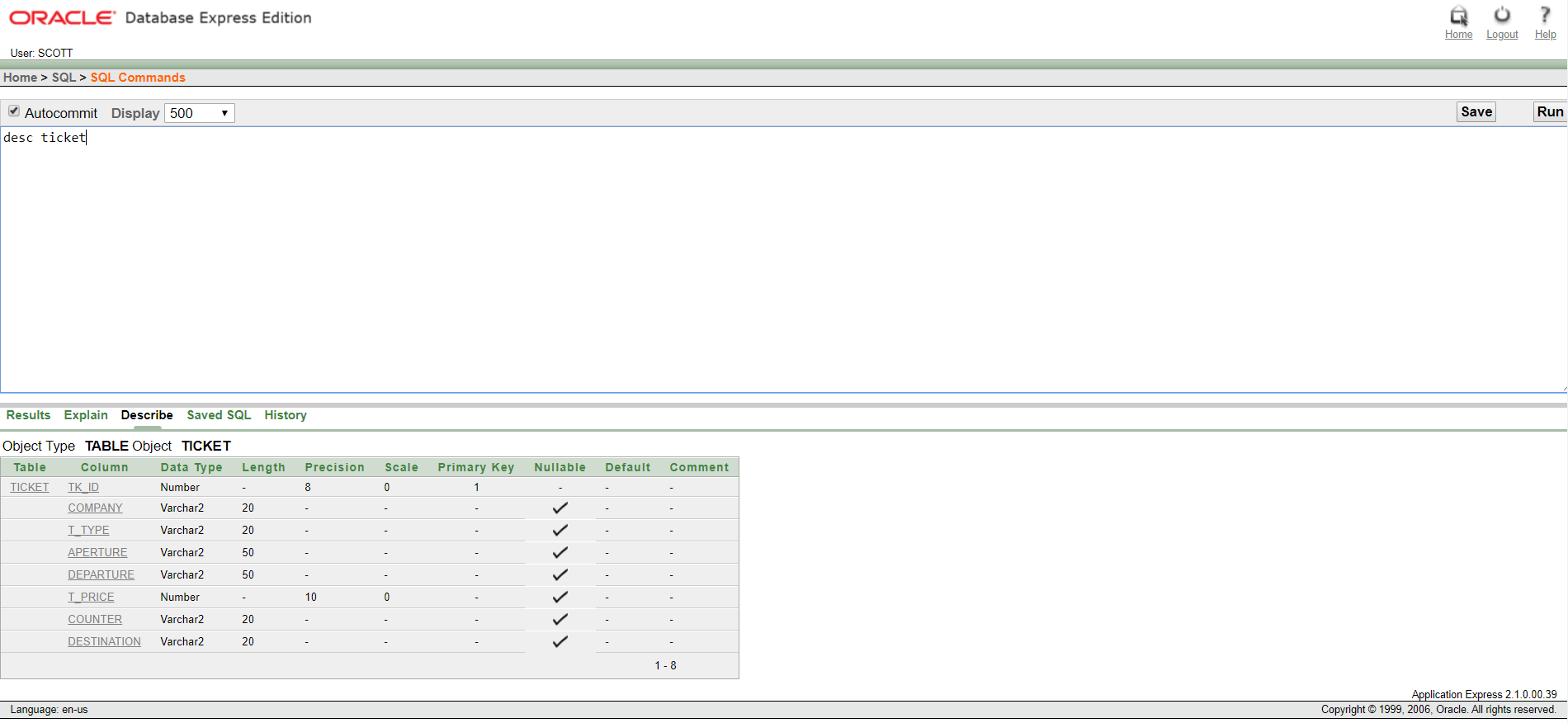


Table: PACKAGE\_2

TICKET:



Description of TICKET

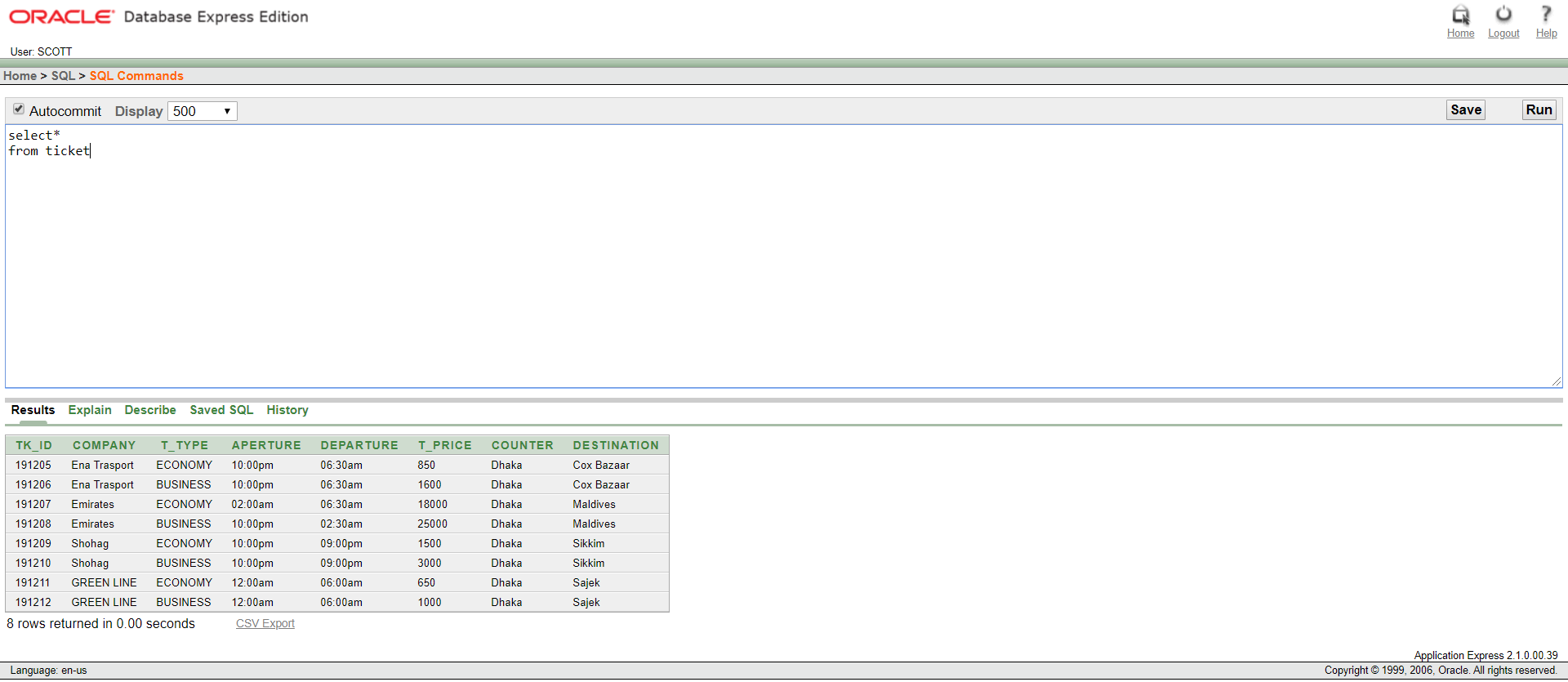
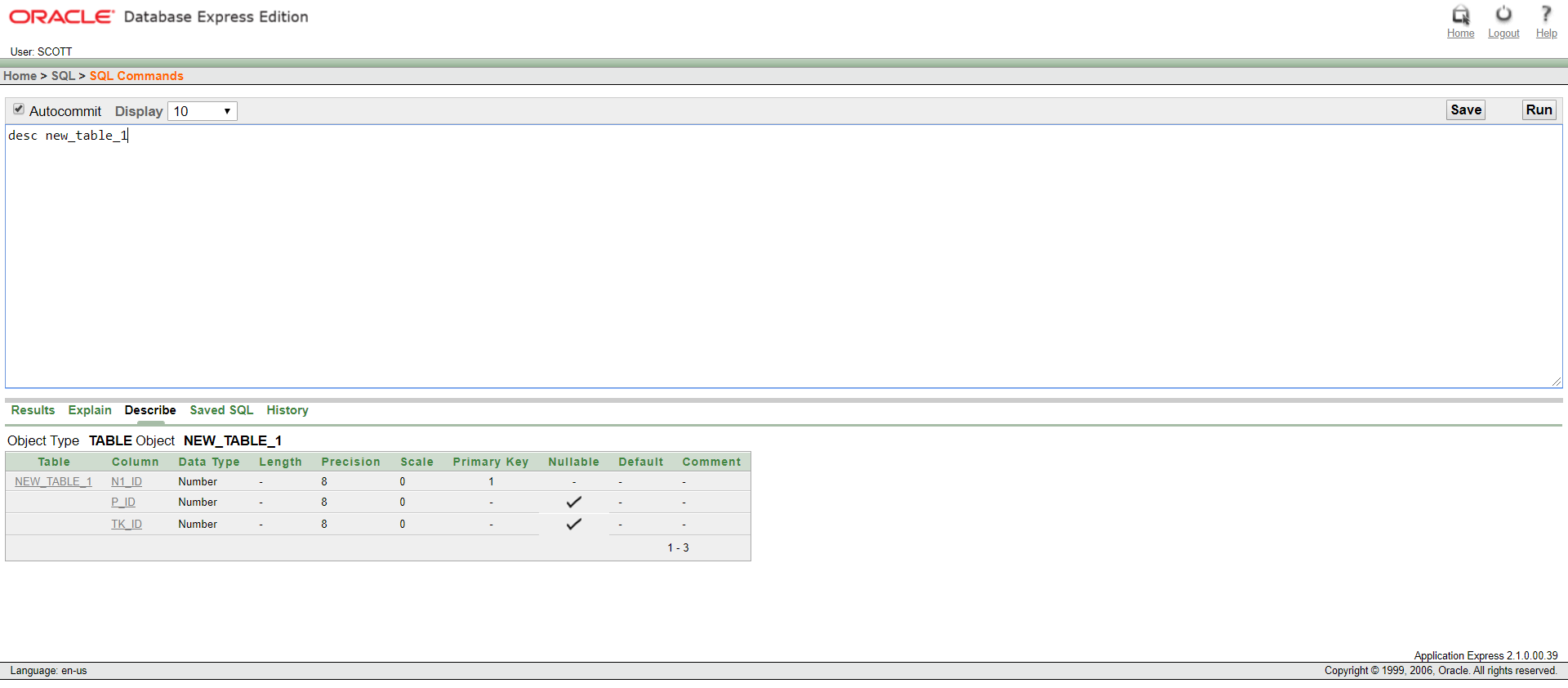


Table: TICKET

NEW\_TABLE\_1:



Description of NEW\_TABLE\_1

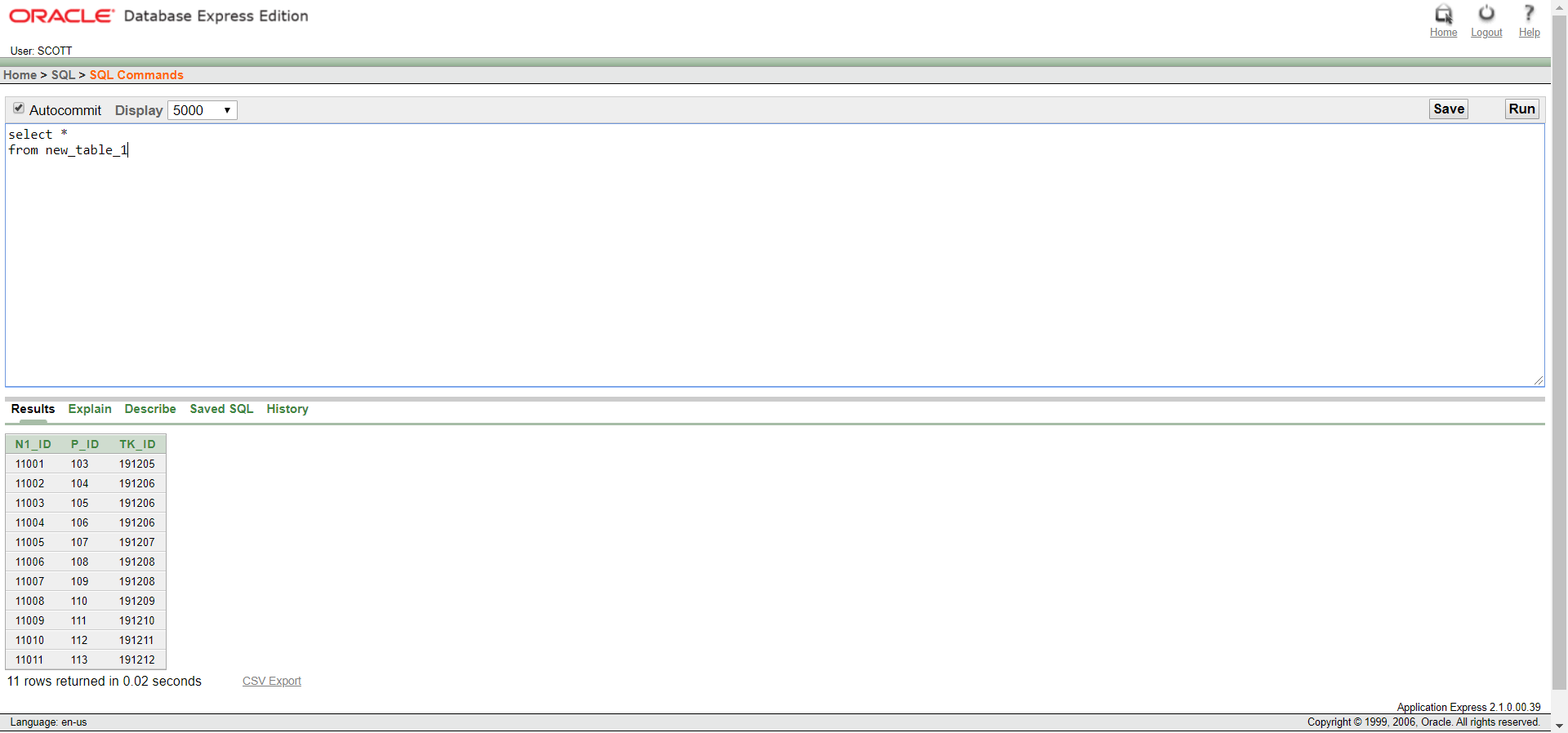
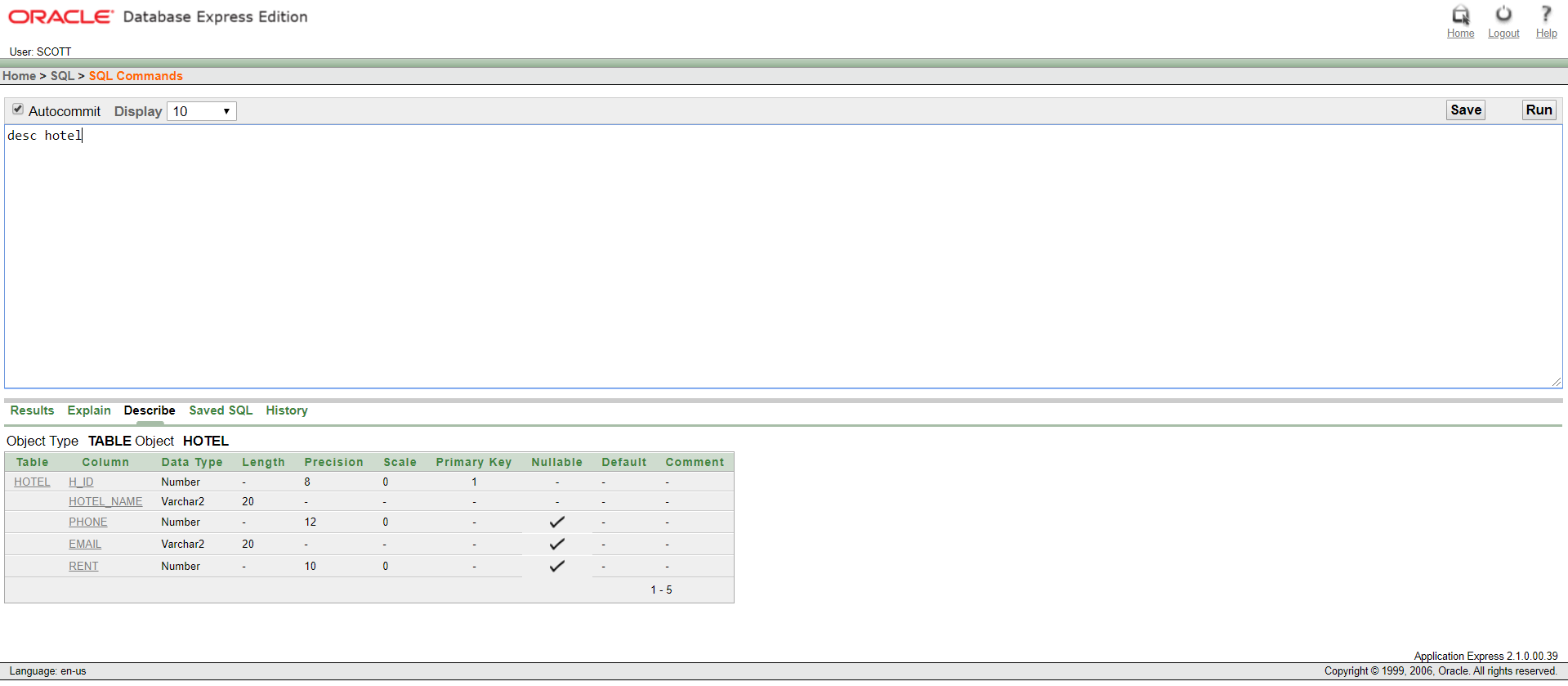


Table: NEW\_TABLE\_1

HOTEL:



Description of HOTEL

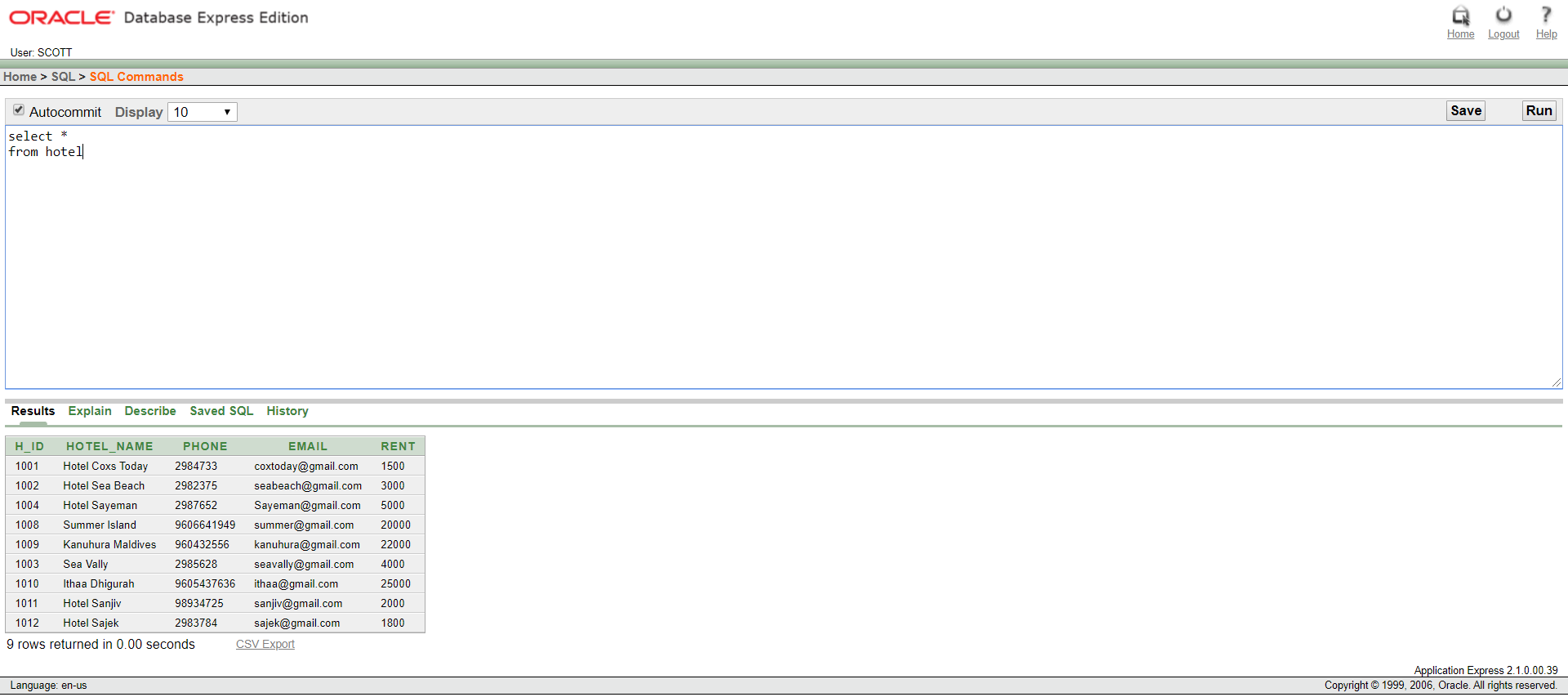
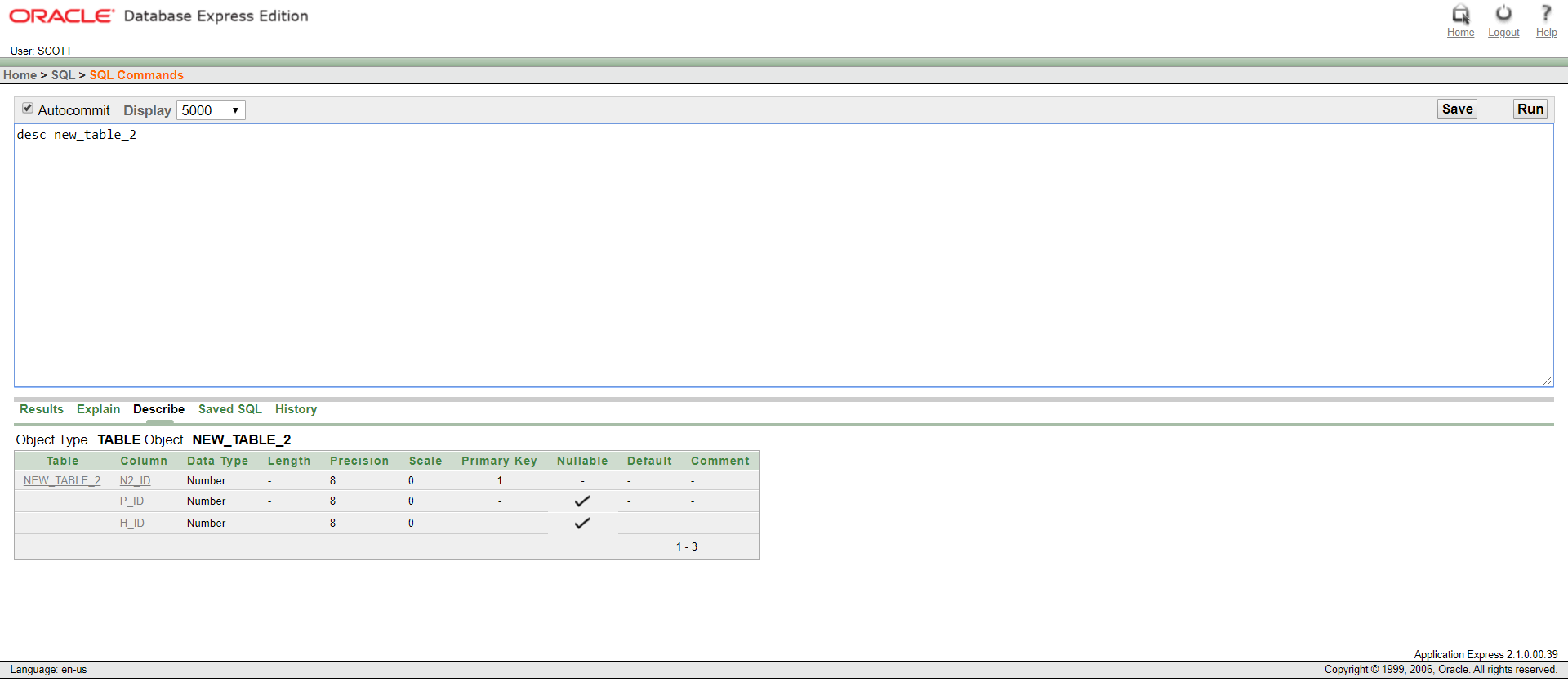


Table: HOTEL

NEW\_TABLE\_2:



Description of NEW\_TABLE\_2

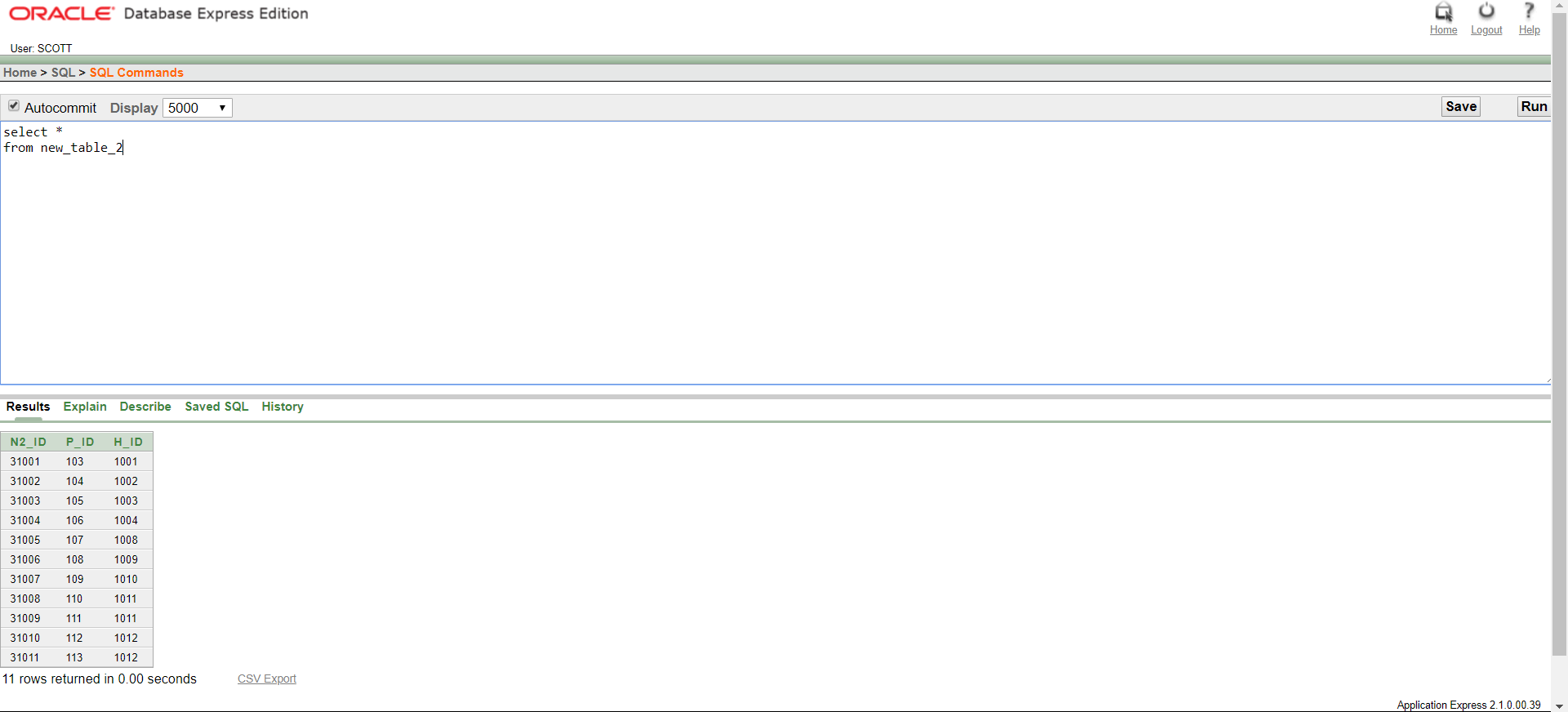
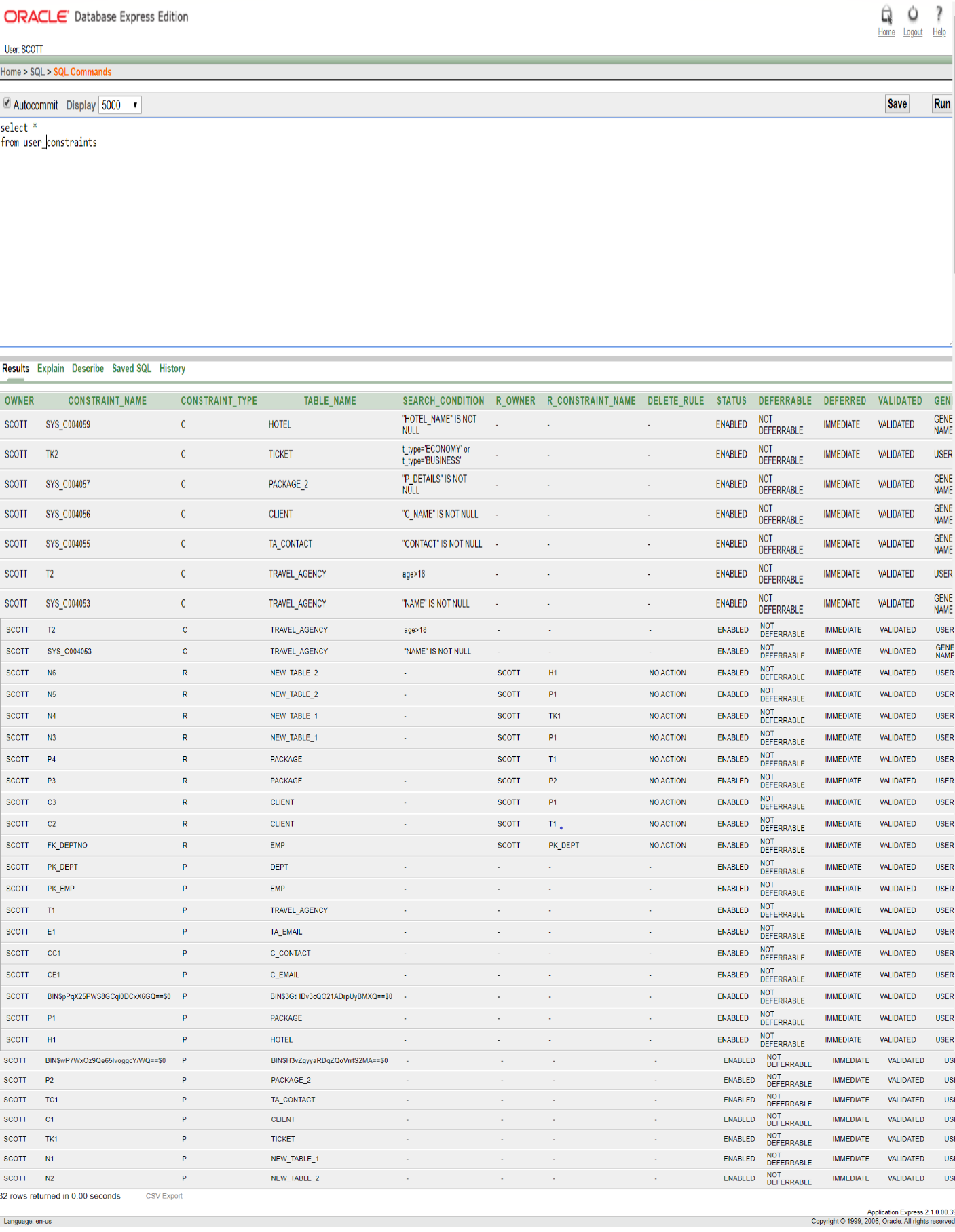
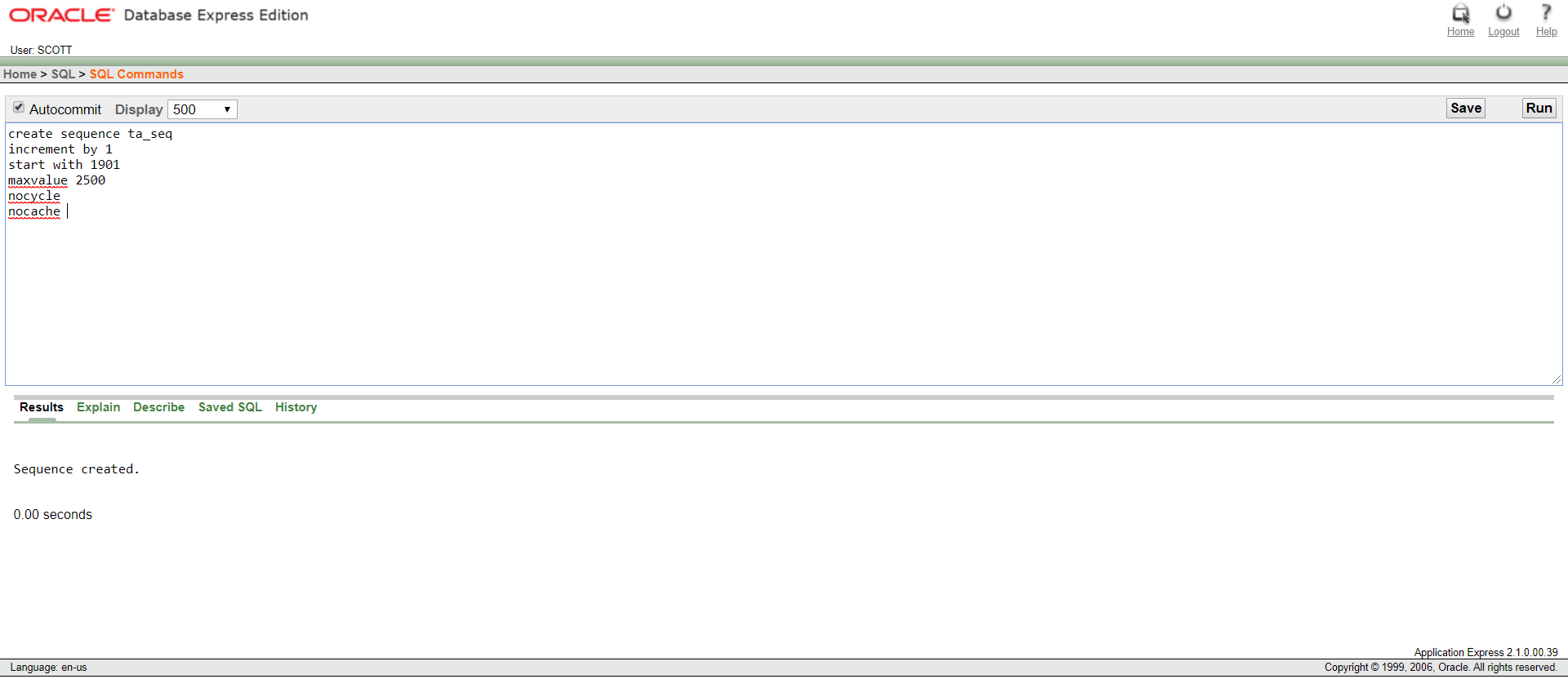


Table: NEW\_TABLE 2

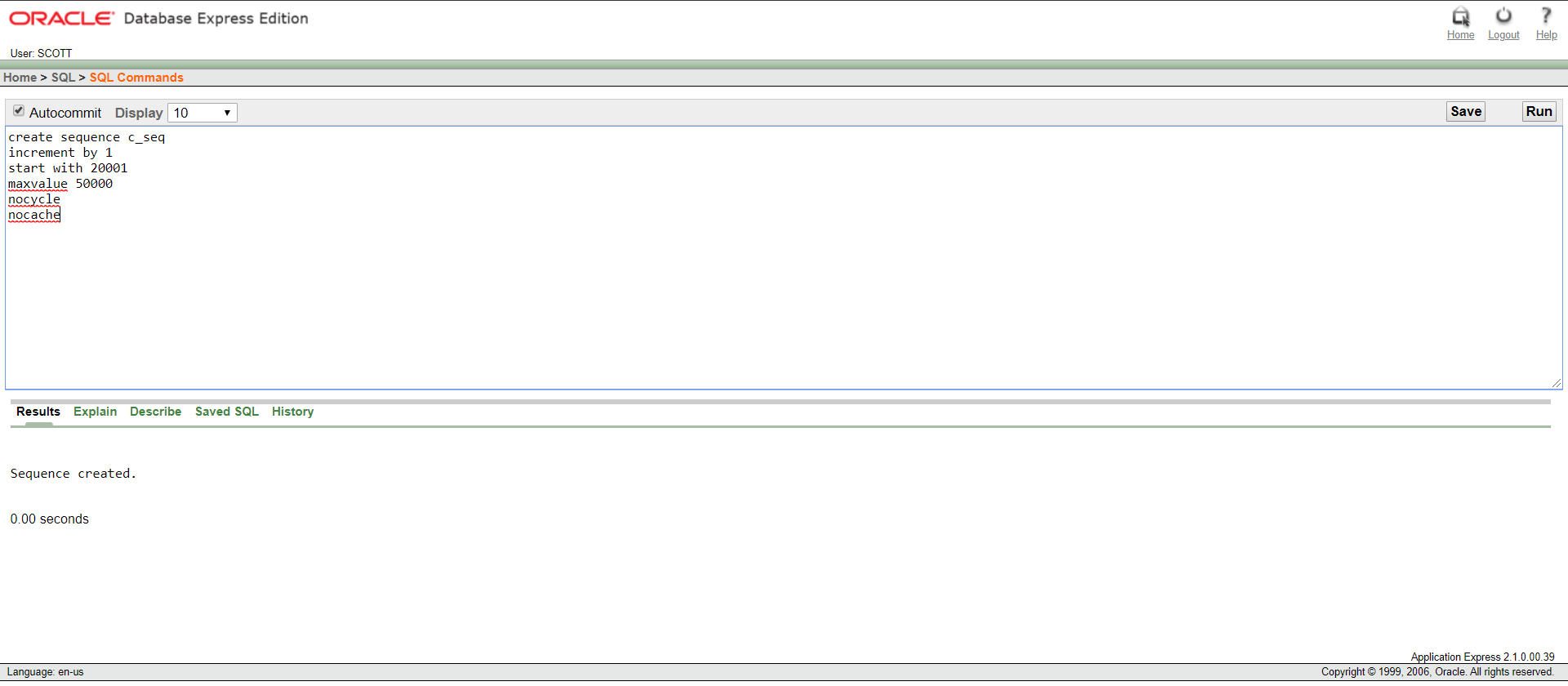
**Constraints**



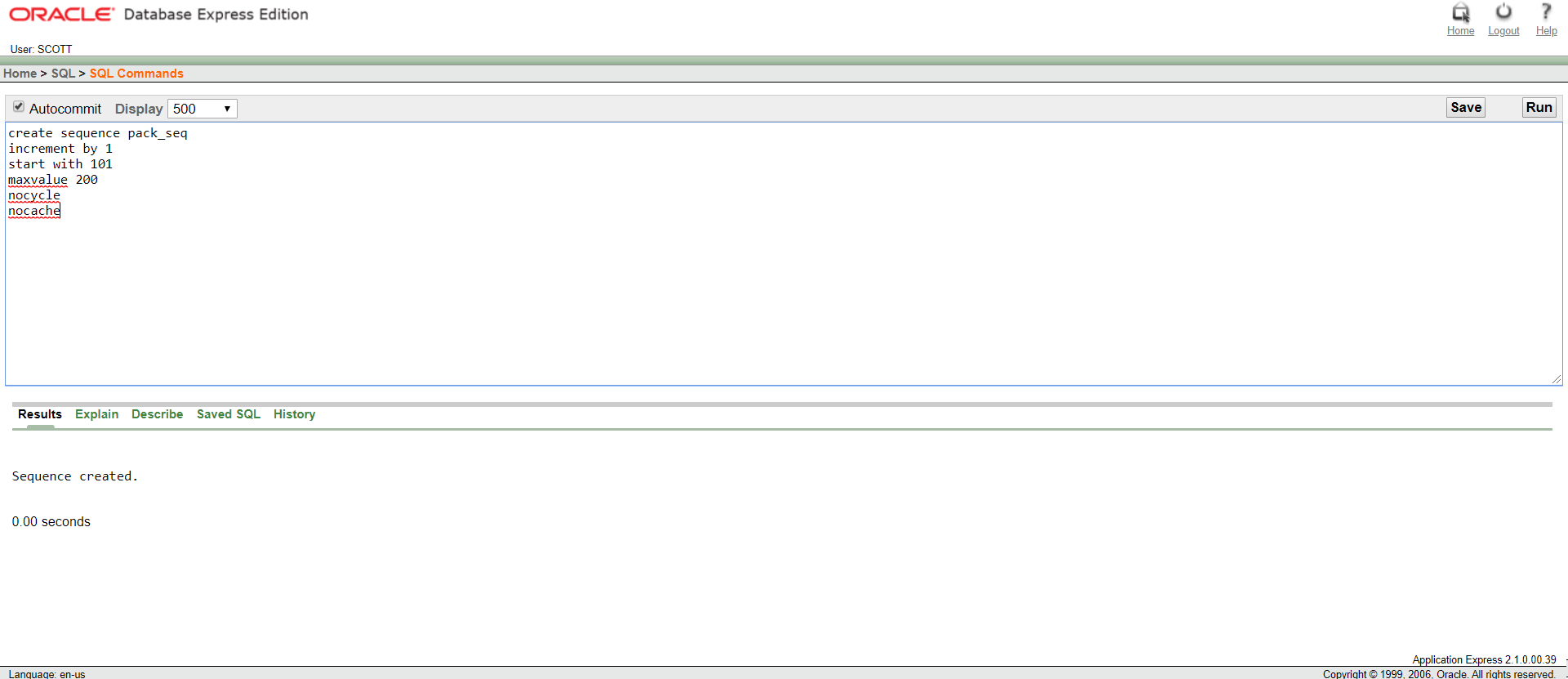
**SEQUENECE**



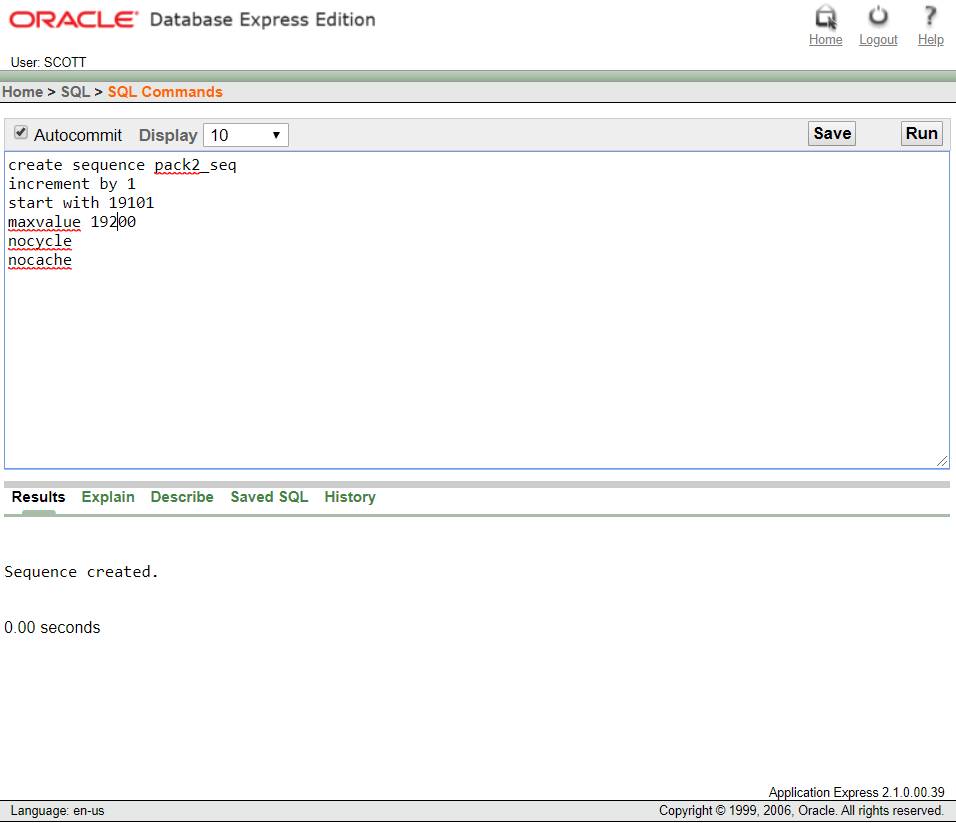
Sequence for TRAVEL\_AGENCY



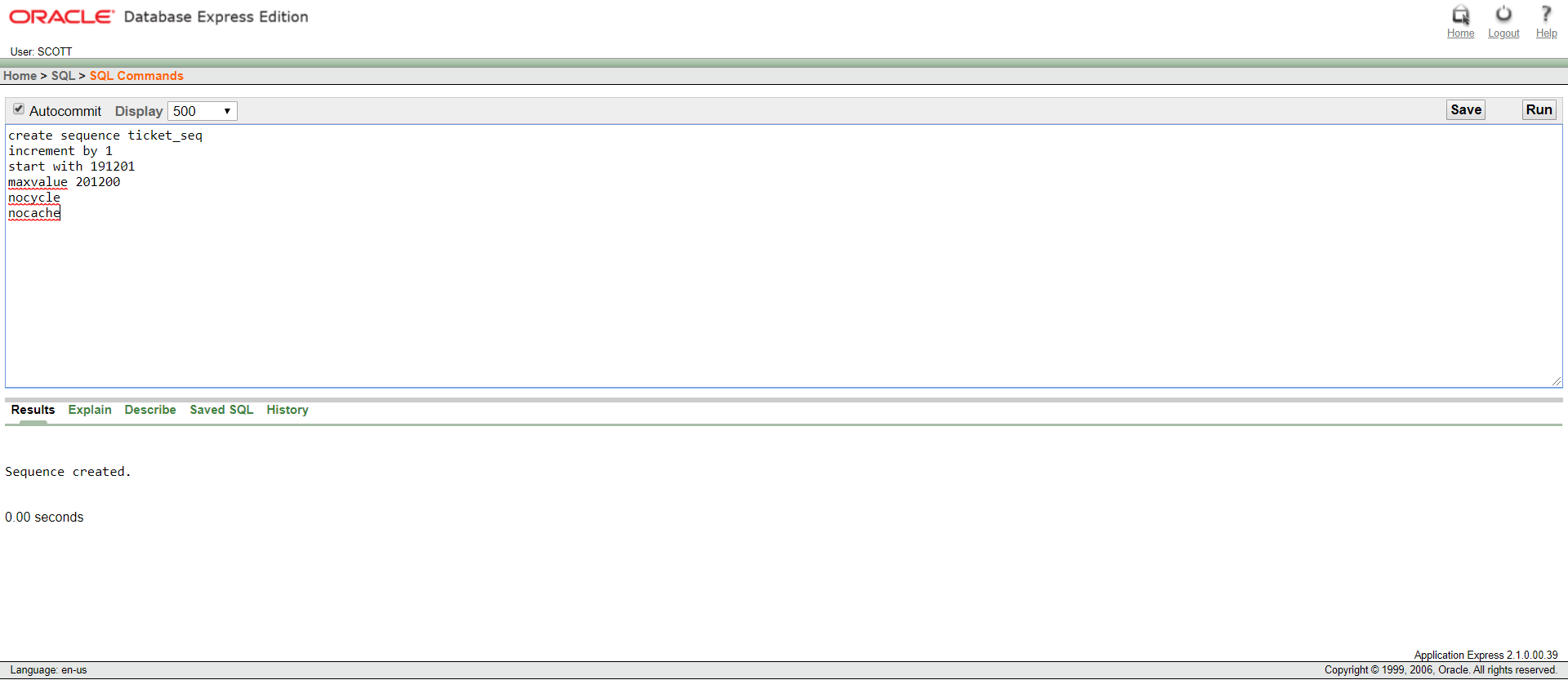
Sequence for CLIENT



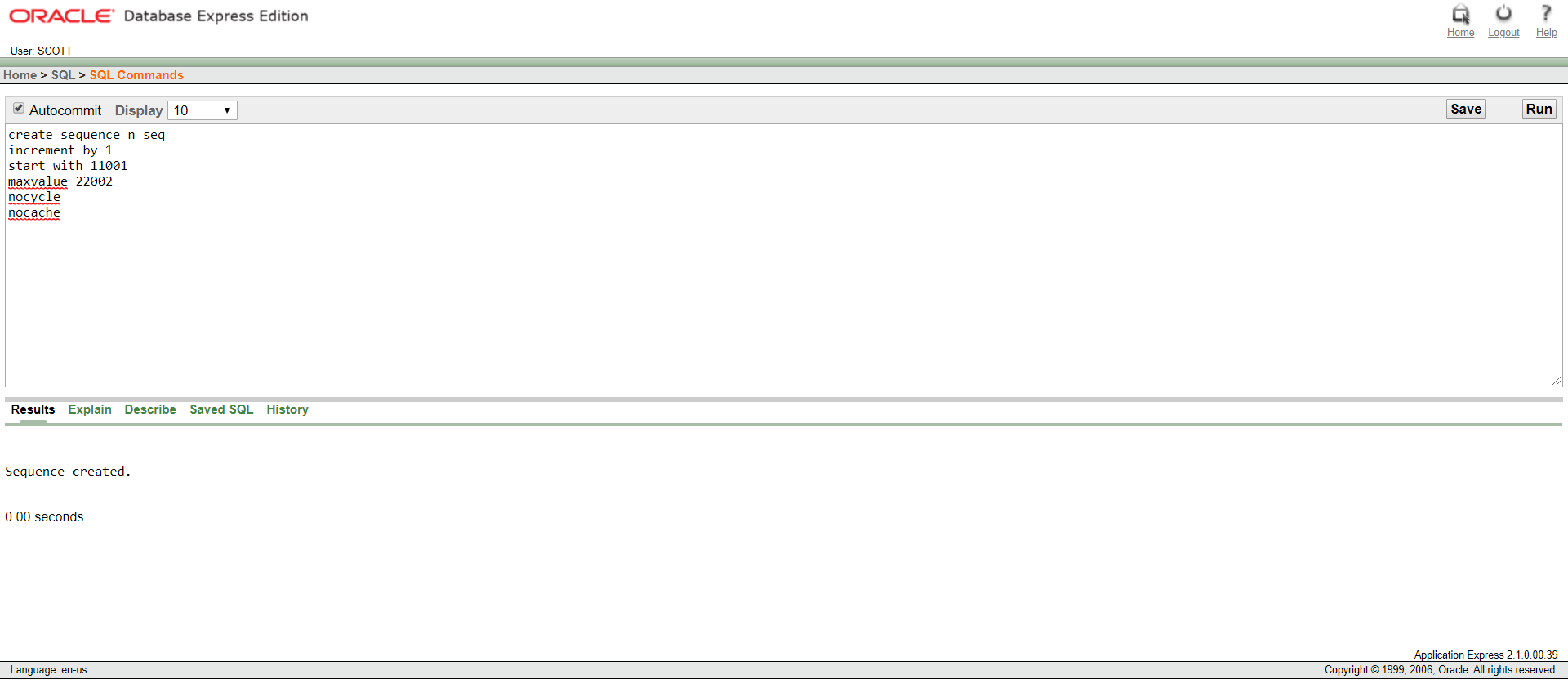
Sequence for PACKAGE



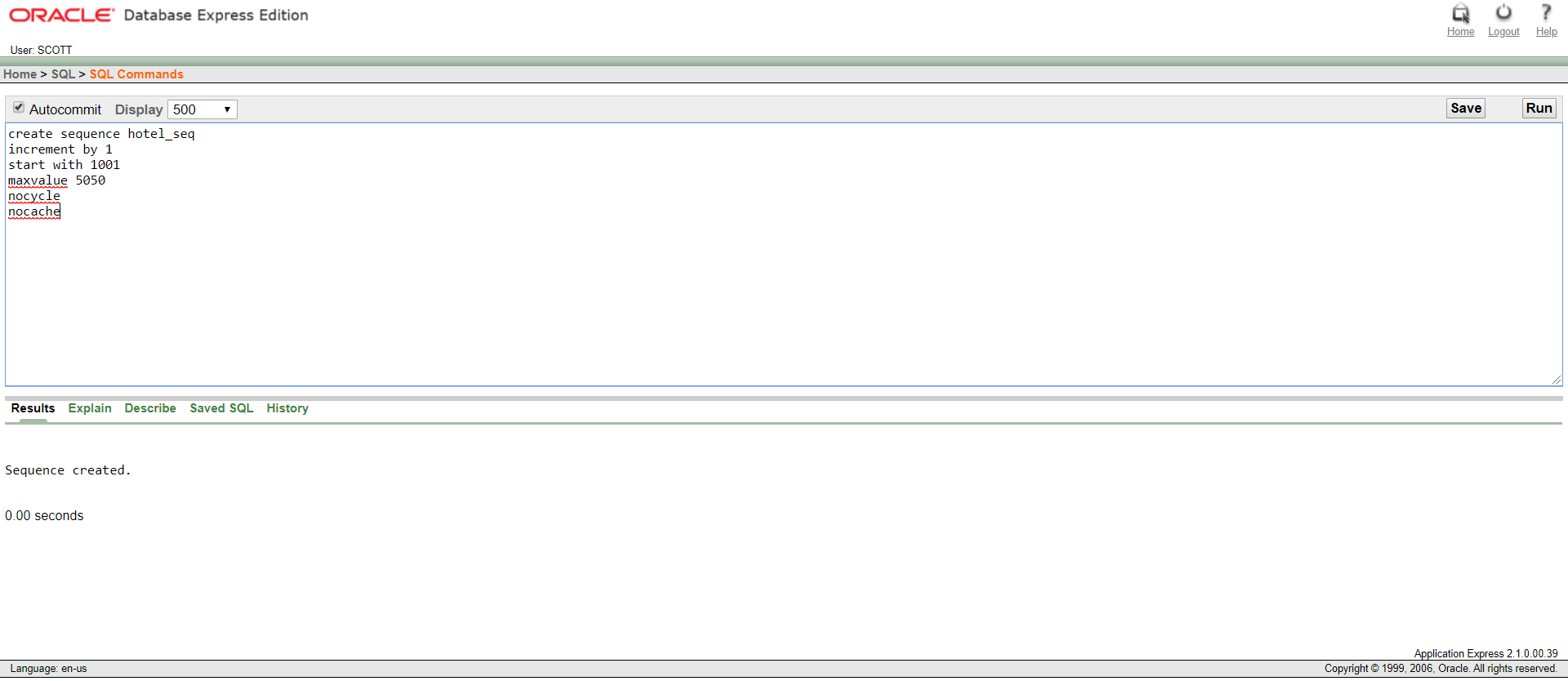
Sequence for PACKAGE\_2



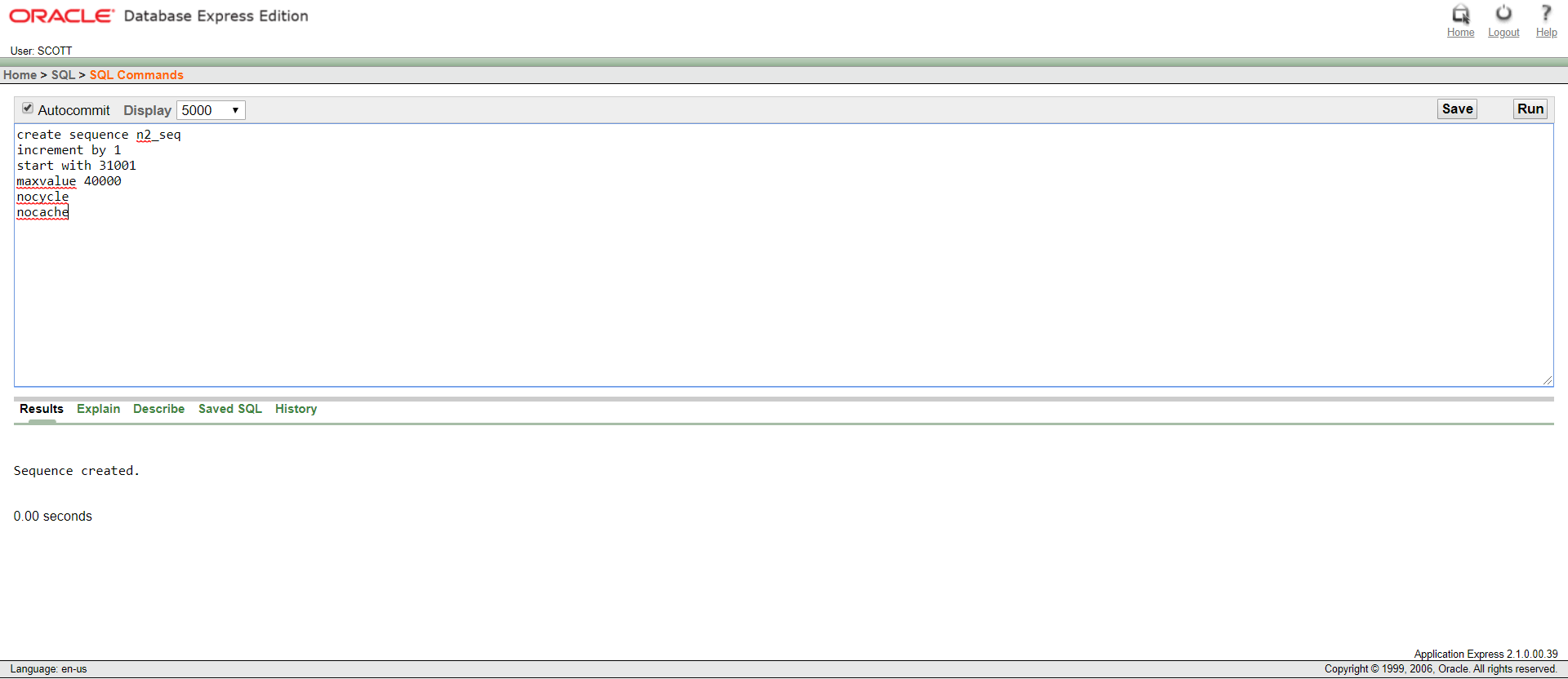
Sequence for TICKET



Sequence for NEW\_TABLE\_1



Sequence for HOTEL



Sequence for NEW\_TABLE\_2

**Query Questions**

1. Find all the information of the clients whose C\_id is 20003 and package type is gold.
2. Find the package name which include H\_id 1010.
3. Display the package details where the package type is silver but the price is greater than 5000.
4. Create a view called B\_ticket based on the company, t\_type, aperture, t\_price and destination where the type of ticket is business and no one is allowed to change anything but can see the table.
5. Create a sequence for hotel that the hotel id that start with 1001 and goes like 1001,1002,1003……….to 5050.
6. Alter the sequence where the sequence will go like 1001,1004,1008,1012,1016……….to 5060.Save 10 sequences.
7. Find the name of the 2nd highest salary from travel agency.
8. Display the clients name who stays in h\_id 1004.
9. Display c\_name, address and p\_name from client and package in one table.
10. Find the all information of travel agency where client name is ‘Polok Das’.

**Relational Algebra**

1. Find all the information of the clients whose C\_id is 20003 and package type is gold.

Πc\_name [Ϭp\_type=” gold” (Ϭpackage.P2\_id=package\_2.P2\_id(package×package\_2))

2. Find the package name which include H\_id 1010.

Πp\_name[ϬH\_id=1010[Ϭnew\_table\_2.H\_id=hotel.H\_id(package×hotel)]

3. Display the package details where the package type is silver but the price is greater than 5000.

Πp\_details[Ϭp\_type=”silver” and p\_price>5000(package\_2)]

8. Display the clients name who stays in h\_id 1004.

Πc\_name[ϬH\_id=1004[Ϭnew\_table\_2.H\_id=hotel.H\_id(new\_table\_2×hotel)]

10. Find the all information of travel agency where client name is ‘Polok Das’.

Ϭc\_name=” Polok Das” (travel agency)