AutoZone
(A National retail and service store)

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Project Proposal Part-2

Group Number: 8
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Introduction:

AutoZone, a national retailer of automotive parts and accessories Company has requirement to store the information of the inventory, employees, insurance, servicing, payment plans, supplier details and customer details. AutoZone also want to store the information about locations, jobs done by the employees and automotive retailer branch details.

Description:

- Each retailer in the AutoZone chain needs to be identified based on the retailer id. It can have the basic information like contact, business hour and each AutoZone retailer can have a manager and the website details related to the that location. Multiple employees can work in the one automotive retailer. Each retailer can have in house inventory and external inventory. Automotive retailer address/location needs to be stored. Each automotive retailer can afford multiple jobs or services.
- Inventory product entity serves as a major component and uniquely identified in this system. It manages the various automotive products. It includes the attributes like name, quantity, price, automotive_retailer_id, automobile_id, address_id. It holds the details of the automotive retailer, automobile data. It establishes the relation with suppliers, automotive retailers, part service, automobile, address and bill.It serves as a central component for efficient inventory management, procurement, and tracking within the system.
- Employee entity holds the data of the employees working in AutoZone. Each employee is uniquely identified with their ID. Along with the ID this entity will also have the attributes first name, last name, date of birth, phone number, email address, annual salary, ssn, address, hire date and the automotive retailer ID. An employee can create many bills for the customers and so the employee entity will form a one-to-many relation with the bill entity. More than one employee can have the same address as there is a chance of 2 employees living in the same location. So, employee will form a many to one relationship with the address entity. Many employees can be part of a job and one employee can be part of many jobs. So, employee entity will form many to many relationships with the job entity. As Many employees work in one location, employee entity will form a many to one relationship with the automotive retailer

entity. Employees may receive multiple paychecks over a period. So, Employee entity will form a one-to-many relationship with employee payroll entity.

- Employee payroll entity has the record of paychecks given to employees. Each pay given to an employee is identified by a unique id. This entity has the attributes hours worked (number of hours worked by employee during the pay cycle), start date (start date of the pay cycle), end date (end date of the pay cycle), pay (amount paid to the employee) and employee id (id of the employee that is used to uniquely identify an employee). The employee payroll entity will form a many to one relationship with the employee as one employee may receive many pays over a period.
- AutoZone can have suppliers to inventory who supply the products that stored or used during the services. An inventory can have multiple suppliers and vice versa. Suppliers' information like contact and address needs to be stored. Suppliers can uniquely identified by their id.
- Address entity serves as a global component within the system, defines location information. It is uniquely identified and includes the attributes like apartment number, street, city, state, country, and ZIP code, all of them are mandatory. This entity forms relationships with other entities in various ways: many employees may have a single address, inventory products are associated with specific addresses, automotive retailers and suppliers have distinct addresses, and multiple customers can be linked to one address.
- Bill entity is crucial for recording financial transactions. It is uniquely defined and includes attributes like date, payment mode, insurance, customer, job, employee, sale type (can be an online or offline), and payment plan. It forms relationships with various entities: multiple bills can be linked to one employee, have many-to-many connections with inventory products, and maintain multiple bills of each association with insurance, customers, and payment plans. Additionally, every job has a specific bill.
- Job entity is essential for managing automotive service tasks. It is uniquely defining and includes attributes like date, description, customers, automotive retailers, VIN numbers, and automobiles. All of which are mandatory. "Job" forms key relationships: It establishes a direct link with billing records, multiple jobs are associated with automobiles and automotive retailers, Customers. Various jobs can be done by different employees. Whereas Single job can be performed using multiple part services. This entity serves as a central hub for tracking and managing automotive service jobs.
- Part service like during the service which are automotive parts we are using to get the job done for a vehicle. It may have the information like job details, name/description of the service and it can have quantity of the parts which are using for that service. Part service can be identified by their id. Part service can have type like is it only service or any parts used to get that service done. In this many parts service can be related to one job and it have information related to the inventory products to know the parts related to the which inventory.
- Customer entity represents individuals in the system and is identified uniquely. It includes essential attributes like first name, last name, birthdate, driver's license, phone, and address. Multiple customers may opt for multiple insurance policies. A Customer can be associated with multiple jobs which has multiple bills. Many customers may have the single address. This entity enables efficient management of customer data, service history, and financial transactions.
- Insurance is like if customer wants to utilize his insurance plan for the payment, we need to store the information of that insurance. It can have policy type, provider and claim percentage. The particular insurance plan can be identified by plan id. A customer can have multiple insurance and vice versa. we would also like to include insurance id in the bill, it will be like one insurance plan can be included in many bills.

- Payment plan like if customer interested in the paying in instalments, he can use this option. This payment plan will have the information like plan name, number of instalments and the interest rate related to the payment plan. Each payment can be identified by plan id and multiple bills can have single payment plan.
- Would like to store the information about automobile. So that when the job is performed we can use the parts related to the specific automobile model. It can have the information like manufacture, name, variant, year of the build and color of the vehicle. Each automobile model can be identified by automobile id. An automobile can have multiple products in the inventory and would like to keep the automobile information in the jobs performed. It will be like multiple jobs can be performed to an automobile.

Along with the above description points we have added few more as part of project proposal part 2:

- Inventory-product-supplier is a relation table. Which has a primary and foreign key as inventory_product_id, supplier_id. It has a single attribute quantity. Multiple suppliers will provide multiple products. In this we maintain the product_id, supplier_id and the product quantity provided by the supplier.

- Bill_inventory_product is a relation table. Which has a primary and foreign key as bill_id, inventory_product_id. It has a single attribute quantity. Multiple products will have the multiple bills. In this we maintain the bill_id, product_id and the product quantity in each generated bill.

- Job_employee is a relation table. Which has the primary and foreign key as job_id and employee_id. There are multiple employees, working for the on the different jobs to maintains the those details this table helps to track the respective details. It's a join of employee and job and the job table.

- Cunstomer_insurance is a relation table. Which has the primary and foreign key as cutomer_id and insurance_id. It has a single attribute status. Many customers can opt for multiple insurances. This table helps to track the insurance opted by the customers and their status.

- In the automotive_retailer a name attribute is newly added. The name identifier helps to track the name of specific automotive_retailer.

<u>Assumptions:</u>

- A product can be available both in store and in warehouse. If the product has automative_retailer_id same as address id, that means the product is in store. And if automative_retailer_id is null, then the inventory is not in store.
- Automobile entity will have the generic information about the model, manufacturer and make of the automobile available in the market.
- A job will be created if a customer wants to get his automobile serviced in the store and the bill will be generated for the job.
- A bill can be generated without a job when a customer purchases products from the store without getting the service done in store where this data is stored in bill_inventory table.
- Employee can receive multiple payments over a period. This is maintained in employee_payroll table.

- Employee can be part of the job and he can generate bill for the job. And employee can sell the products to the customer who is not seeking service (not part of the job) from the retailer.
- Address is global table where the addresses of suppliers, customers, employees, inventory and retailer are stored.
- customer can pay the bill directly or he can opt for payment plan. Customer can select the payment plan form the payment_plan table.
- Job will be created if a customer opts services from the retailer. services are work done by the employees on the automobile to fix issues or install accessories.
- Part_services have the information about the products used in the job. One Job can have multiple products.
- Insurance table has different insurance policies that are available in the market.
- more than one person (customer or employee) can have same address. but no 2 suppliers and retailers can have the same address.
- product id in part service can be null as labor chargers of a job can also be clocked in part service where no inventory will be tagged to that service.
- The total amount of the bill of a customer who opted for a payment plan will be recorded as a transaction in bill table. And the installments are also saved as transactions in the same table.

Along with the above assumptions we have added few more new assumptions as part of project proposal part 2:

- A phone number must consist of 10 digits and should only contain numerical characters, with no special symbols or spaces.
- Each email address must be unique, meaning no two users can share the same email ID.
- In the bill table, the sale type can be categorized as either online or offline.
- The vin_number in the job table must have a fixed length of 17 characters.
- The quantity of one item in a bill cannot exceed 10, as customers are limited to purchasing a maximum of 10 identical items.
- The status of insurance in the customer_insurance table can be either active or inactive.
- Zip codes are required to have a fixed length of 5 characters.
- Employees cannot work for more than 100 hours within a two-week period.
- The mode of payment in the bill table can be either cash or card.

Analysis

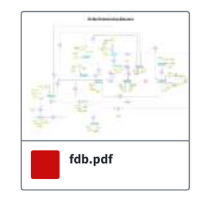
Table	Attributes	Domain Contraints	Contraints	Constraint Name	Relations
automotive_retailer	id	RAW(16)	PRIMARY KEY	NA	automotive_retailer has one to many relationship with employee, automotive_retailer has one to many relationship with inventory_product, automotive_retailer has one to one relationship with address, automotive_retailer has one to many relationship with job
	phone	VARCHAR2(20)	UNIQUE,	invalid_automotive_retailer_phone	
	name	VARCHAR2(30)	NOT NULL	NA	
	email	VARCHAR2(255)	UNIQUE,	invalid_automotive_retailer_email	
	website	VARCHAR2(255)	NOT NULL, UNIQUE	NA	
	business_hours	VARCHAR2(20)	NOT NULL	NA	
	manager_id	RAW(16)	NOT NULL, FOREIGN KEY (manager_id) REFERENCES employee(id)	NA	
	address_id	RAW(16)	NOT NULL, FOREIGN KEY (address_id) REFERENCES address(id)	NA	
inventory_product	id	RAW(16)	PRIMARY KEY	NA	inventory_product has many to many relationship with supplier, inventory_product has many to one realationship with automotive_retailer, inventory_product has many to many relationship with bill, inventory_product has one to many relationship with part_service, inventory_product has many to one relationship with automobile, inventory_product has many to one relationship with address
	name	VARCHAR2(100)	NOT NULL	NA	
	quantity	INTEGER	NOT NULL	NA	
	price	INTEGER	NOT NULL	NA	
	automotive_retailer_id	RAW(16)	NOT NULL, FOREIGN KEY (automotive_retailer_id) REFERENCES automotive_retailer(id)	NA	
	automobile_id	RAW(16)	FOREIGN KEY (automobile_id)	NA	
	address_id	RAW(16)	NOT NULL, FOREIGN KEY (address_id) REFERENCES address(id)	NA	
automobile	id	RAW(16)	PRIMARY KEY	NA	automobile has one to many relationship with inventory_product, automobile has one to many relationship with job
	manufacturer	VARCHAR2(100)	NOT NULL	NA	
	name	VARCHAR2(100)	NOT NULL	NA	
	variant	VARCHAR2(100)	NOT NULL	NA	
	year	VARCHAR2(10)	NOT NULL	NA	
	color	VARCHAR2(100)	NOT NULL	NA	
supplier	id	RAW(16)	PRIMARY KEY	NA	supplier has many to many relationship with inventory_product, supplier has one to one relationship with address
	name	VARCHAR2(100)	NOT NULL	NA	
	phone	VARCHAR2(20)	UNIQUE,	invalid_supplier_phone	
	address_id	RAW(16)	NOT NULL, FOREIGN KEY (address_id) REFERENCES address(id)	NA	
	id	RAW(16)	PRIMARY KEY	NA	
	first_name	VARCHAR2(100)	NOT NULL	NA	
	last_name	VARCHAR2(100)	NOT NULL	NA	
	dob	TIMESTAMP	NOT NULL	NA	
	phone	VARCHAR2(20)	UNIQUE,	invalid_employee_phone	

Employee	email	VARCHAR2(255)	UNIQUE,	invalid_employee_email	employee has one to many relationship with employee_payroll, employee has many to one relationship with automotive_retailer, employee has one to many relationship with bill, employee has many to one relationship with address, employee has many to many relationship with job
	annual_salary	INTEGER	NOT NULL	NA	
	ssn	CHAR(9)	NOT NULL, UNIQUE	NA	
	automotive_retailer_id	RAW(16)	NOT NULL, FOREIGN KEY (automotive_retailer_id) REFERENCES automotive_retailer(id)	NA	
	address_id	RAW(16)	NOT NULL, FOREIGN KEY (address_id) REFERENCES address(id)	NA	
	hire_date	TIMESTAMP	NOT NULL	NA	
employee_payroll	id	RAW(16)	PRIMARY KEY	NA	employee_payroll has many to one relationship with employee
	hours_worked	NUMBER	NOT NULL, CONSTRAINT chk_hours_worked CHECK (hours_worked <= 100)	NA	
	start_date	TIMESTAMP	NOT NULL	NA	
	end_date	TIMESTAMP	NOT NULL	NA	
	pay	NUMBER	NOT NULL	NA	
	employee_id	RAW(16)	NOT NULL, FOREIGN KEY (employee_id) REFERENCES employee(id)	NA	
address	id	RAW(16)	PRIMARY KEY	NA	address has one to many relationship with employee, address has one to many relationship with inventory_product, address has one to one relationship with automotive_retailer, address has one to one relationship with supplier, address has one to many relationship with customer
	apartment_no	NUMBER	NOT NULL	NA	
	street	VARCHAR2(100)	NOT NULL	NA	
	city	VARCHAR2(100)	NOT NULL	NA	
	state	VARCHAR2(2)	NOT NULL	NA	
	country	VARCHAR2(50)	NOT NULL	NA	
	zip	CHAR(5)	NOT NULL, CHECK (LENGTH(zip) = 5	NA	
	id	RAW(16)	PRIMARY KEY	NA	bill has many to one relationship with employee, bill has many to many relationship with inventory_product, bill has many to one relationship with insurance
	bill_date	TIMESTAMP	NOT NULL	NA	
	mode_of_payment	CHAR(4)	NOT NULL, CHECK (mode_of_payment IN ('CARD', 'CASH'))	invalid_mode_of_payment	
	insurance_id	RAW(16)	NOT NULL, FOREIGN KEY (insurance_id) REFERENCES insurance(id)	NA	
	customer_id	RAW(16)	NOT NULL, FOREIGN KEY (customer_id) REFERENCES customer(id)	NA	
	job_id	RAW(16)	NOT NULL, FOREIGN KEY (job_id) REFERENCES job(id)	NA	

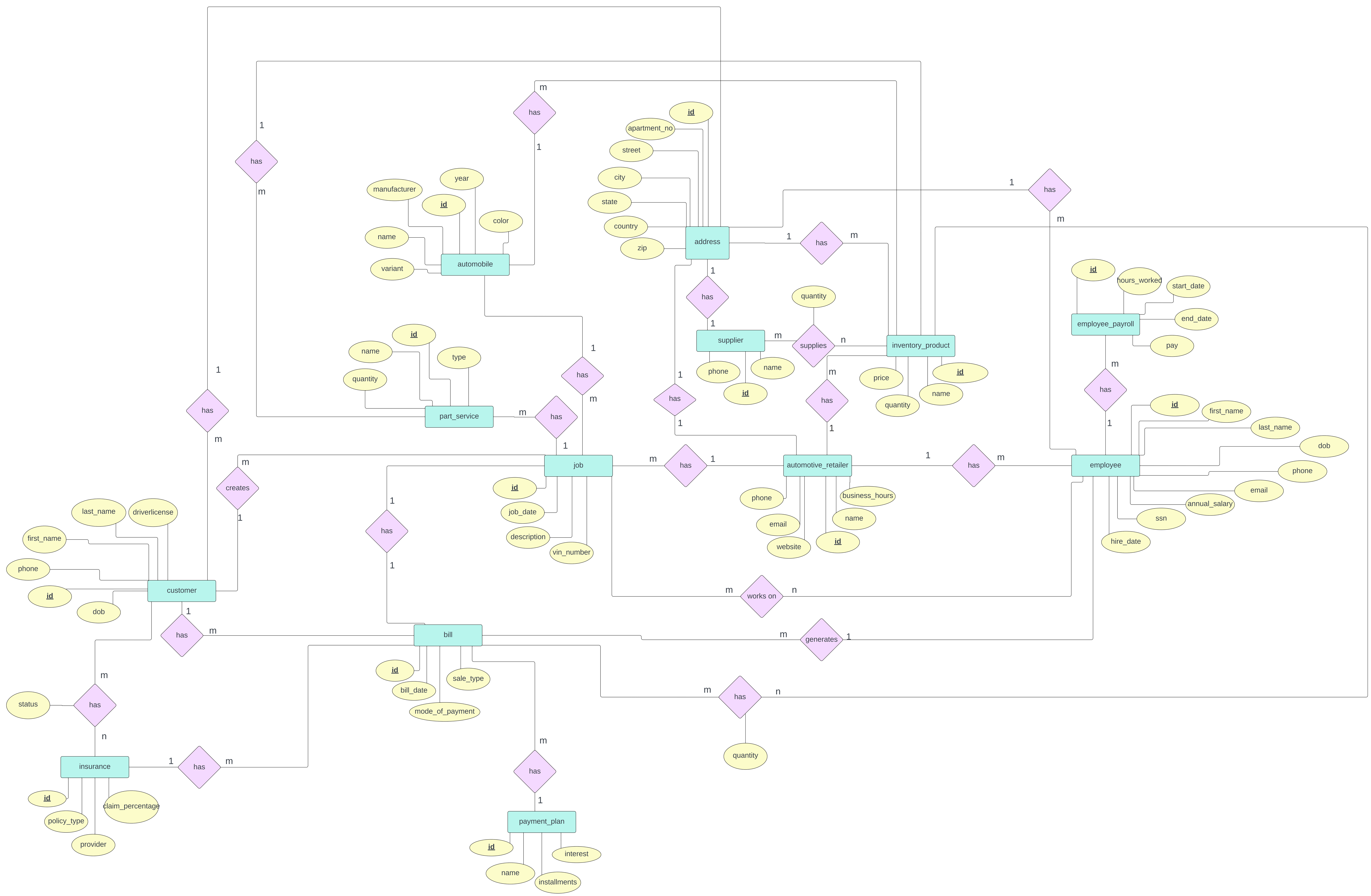
bill	employee_id	RAW(16)	NOT NULL, FOREIGN KEY (employee_id) REFERENCES employee(id)	NA	bill has many to one relationship with insurance, bill has many to one relationship with customer, bill has one to one relationship with job, bill has many to one relationship with payment_plan
	sale_type	CHAR(7)	NOT NULL, CHECK (mode_of_payment IN ('ONLINE', 'OFFLINE'))	invalid_sale_type	
	payment_plan_id	RAW(16)	NOT NULL, FOREIGN KEY (payment_plan_id) REFERENCES payment_plan(id), CONSTRAINT CHK_ModeOfPayment CHECK (ModeOfPayment IN ('cash', 'credit'))	NA	
job	id	RAW(16)	PRIMARY KEY	NA	job has one to one realtionship with bill, job has many to one realtionship with automobile, job has many to one realtionship with automotive_retailer, job has many to many relationship with employee, job has one to many realtionship with part_service, job has many to one realtionship with customer
	job_date	TIMESTAMP	NOT NULL	NA	
	description	VARCHAR2(255)	NOT NULL	NA	
	customer_id	RAW(16)	NOT NULL, FOREIGN KEY (customer_id) REFERENCES customer(id)	NA	
	automotive_retailer_id	RAW(16)	NOT NULL, FOREIGN KEY (automotive_retailer_id) REFERENCES automotive_retailer(id)	NA	
	vin_number	VARCHAR2(100)	NOT NULL, CHECK (LENGTH(vin_number) = 17)	NA	
	automobile_id	RAW(16)	NOT NULL, FOREIGN KEY (automobile_id) REFERENCES automobile(id)	NA	
part_service	id	RAW(16)	PRIMARY KEY	NA	part_service has many to one relationship with job, part_service has many to one relationship with inventary_product
	name	VARCHAR2(100)	NOT NULL	NA	
	quantity	INTEGER	NOT NULL	NA	
	job_id	RAW(16)	NOT NULL, FOREIGN KEY (job_id) REFERENCES job(id)	NA	
	inventory_product_id	RAW(16)	NOT NULL, FOREIGN KEY (inventory_product_id) REFERENCES inventory_product(id)	NA	
	type	CHAR(7)	NOT NULL, CHECK (mode_of_payment IN ('SERVICE', 'PART'))	invalid_part_service_type	
payment_plan	id	RAW(16)	PRIMARY KEY	NA	payment_plan has one to many relationship with bill
	name	VARCHAR2(100)	NOT NULL	NA	
	installments	INTEGER	NOT NULL	NA	
	interest	INTEGER	NOT NULL	NA	

customer	id	RAW(16)	PRIMARY KEY	NA	customer has many to many relationship with insurance, customer has one to many relationship with job, customer has many to one relationship with address, customer has one to many relationship with bills
	first_name	VARCHAR2(100)	NOT NULL	NA	
	last_name	VARCHAR2(100)	NOT NULL	NA	
	dob	TIMESTAMP	NOT NULL	NA	
	driverlicense	VARCHAR2(50)	UNIQUE, NOT NULL	NA	
	phone	VARCHAR2(20)	NOT NULL, UNIQUE, CHECK (REGEXP_LIKE (phone, '^\ (\d{3}\) \d{3}-\d {4}$'))	invalid_customer_phone	
	address_id	RAW(16)	NOT NULL, FOREIGN KEY (address_id) REFERENCES address(id)	NA	
insurance	id	RAW(16)	PRIMARY KEY	NA	insurance has many to many relationship with customer, insurance has one to many relationship with bill
	policy_type	VARCHAR2(100)	NOT NULL	NA	
	provider	VARCHAR2(100)	NOT NULL	NA	
	claim_percentage	INTEGER	NOT NULL	NA	
inventory_product_supplier	inventory_product_id	RAW(16)	PRIMARY KEY, NOT NULL, FOREIGN KEY (inventory_product_id) REFERENCES inventory_product(id)"	NA	NA
	supplier_id	RAW(16)	PRIMARY KEY, NOT NULL, FOREIGN KEY (supplier_id) REFERENCES supplier(id)	NA	
	quantity	INTEGER	NOT NULL	NA	
bill_inventory_product	bill_id	RAW(16)	PRIMARY KEY, NOT NULL, FOREIGN KEY (bill_id) REFERENCES bill(id)"	NA	NA
	inventory_product_id	RAW(16)	PRIMARY KEY, NOT NULL, FOREIGN KEY (inventory_product_id) REFERENCES inventory_product(id)"	NA	
	quantity	INTEGER	NOT NULL, CHECK (quantity <= 10)	NA	
job_employee	job_id	RAW(16)	PRIMARY KEY, NOT NULL, FOREIGN KEY (job_id) REFERENCES job(id)"	NA	NA

	employee_id	RAW(16)	PRIMARY KEY, NOT NULL, FOREIGN KEY (employee_id) REFERENCES employee(id)"	NA	NA
customer_insurance	customer_id	RAW(16)	PRIMARY KEY, NOT NULL, FOREIGN KEY (customer_id) REFERENCES customer(id)"	NA	NA
	insurance_id	RAW(16)	PRIMARY KEY, NOT NULL, FOREIGN KEY (insurance_id) REFERENCES insurance(id)"	NA	
	status	CHAR(8)	NOT NULL, CHECK (status IN ('active', 'inactive'))	NA	



Entity Relationship Diagram



ERD Transformations –

1. automotive_retailer(**id,** name, phone, email, website, business_hours, manager_id , address_id)
2. inventory_product (**id**, name, quantity, price, automotive_retailer_id , automobile_id, address_id)
3. automobile (**id**, manufracturer, name, variant, year, color)
4. supplier(**id**, name, phone, address_id)
5. employee(**id**, first_name, last_name, dob, phone, email, annual_salary, ssn, hire_date, automotive_retailer_id, address_id)
6. employee_payroll (**id**, hours_worked, start_date, end_date, pay, employee_id)
7. address (**id**, apartment_no, street, city, state, country, zip)
8. bill (**id**, bill_date, mode_of_payment, sale_type, insurance_id , customer_id , job_id, employee_id, payment_plan_id)
9. part_service (**id**, name, quantity, type, job_id , inventory_product_id)
10. payment_plan (**id**, name, installments, interest)
11. customer (**id**, first_name, last_name, dob, driverlicense, phone, address_id)
12. insurance(**id**, policy_type, provider, claim_percentage)
13. job(**id**, job_date, description, vin_number, customer_id , automotive_retailer_id, automobile_id)
14. inventory_product_supplier(**inventory_product_id** ,**supplier_id**, qunatity)
15. bill_inventory_product(**bill_id**,**inventory_product_id** , quantity)
16. job_employee(**job_id** ,**employee_id**)

17. customer_insurance(**customer_id**, **insurance_id**, status)

Created Common Database and Granting access to Users:

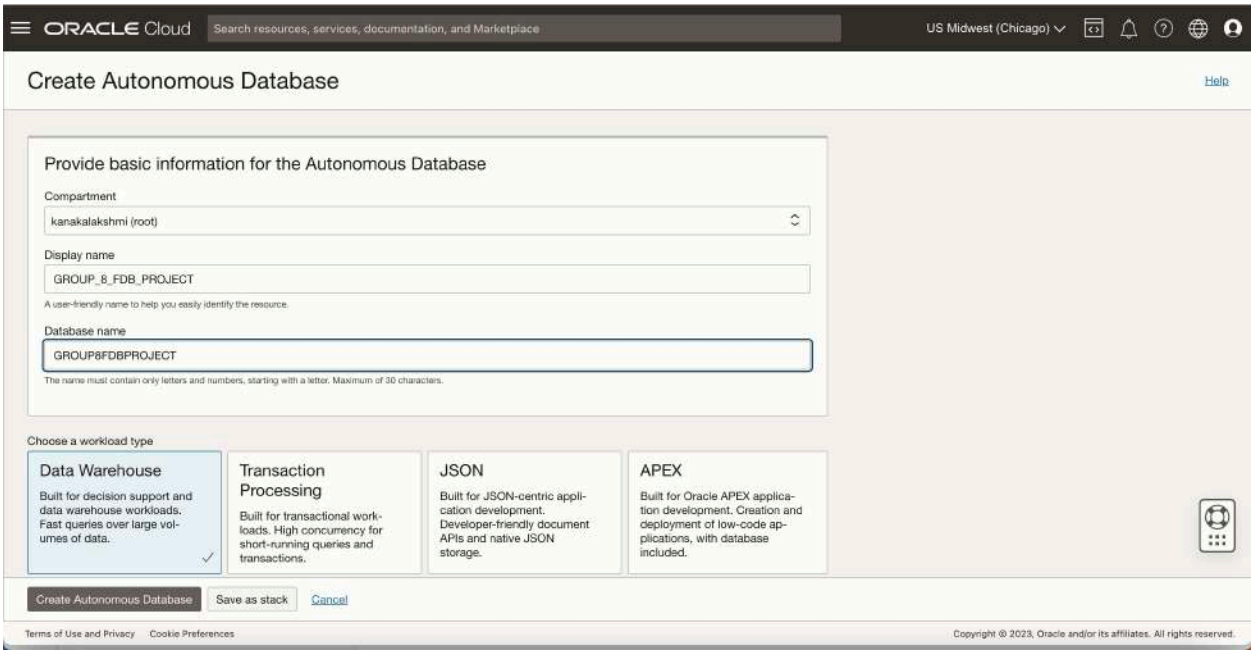


Figure-1: Creating DB

To create the common database, we need to provide some basic information such as Display name, Database name and workload type as Data warehouse.

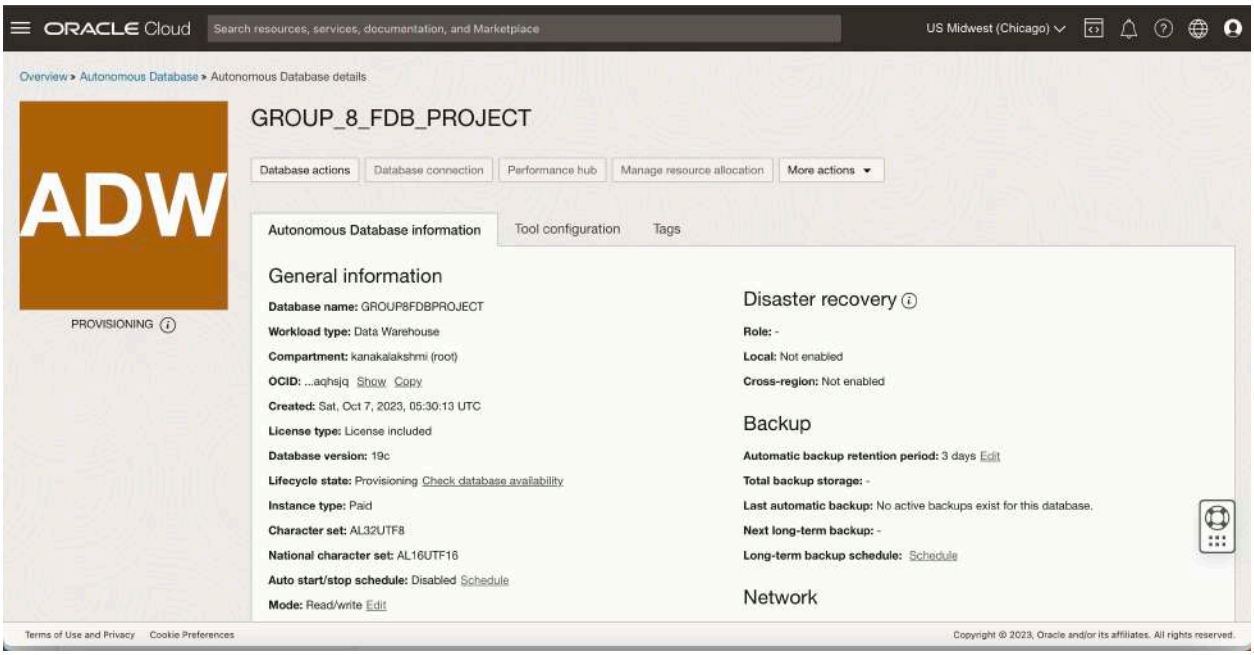


Figure-2: DB provisioning

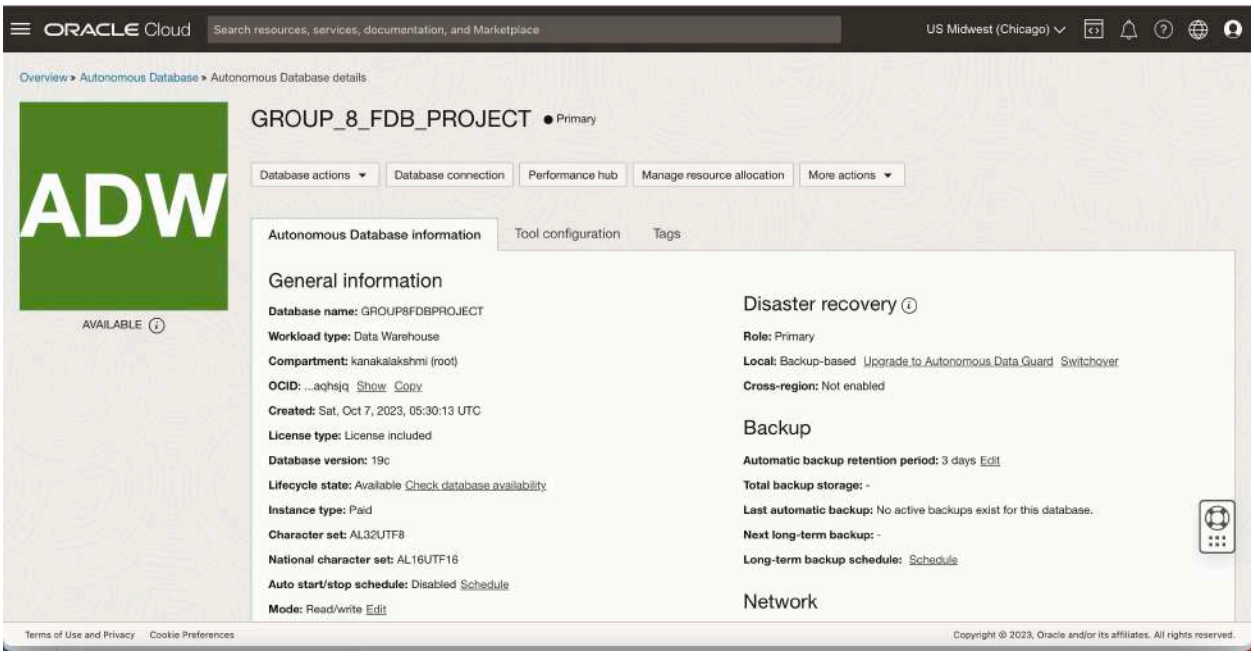


Figure-3: DB Provisioned

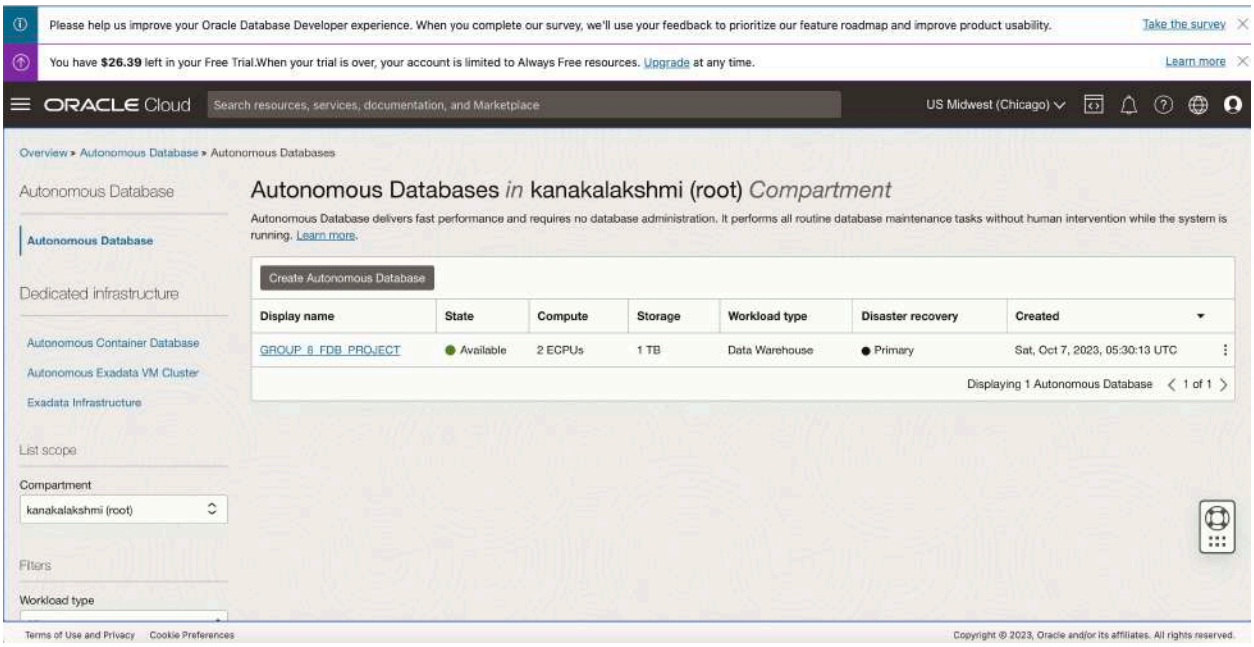


Figure-4: DB Dashboard

Once after creating the Common DB, we can see the complete details here.

Creating Users from admin:

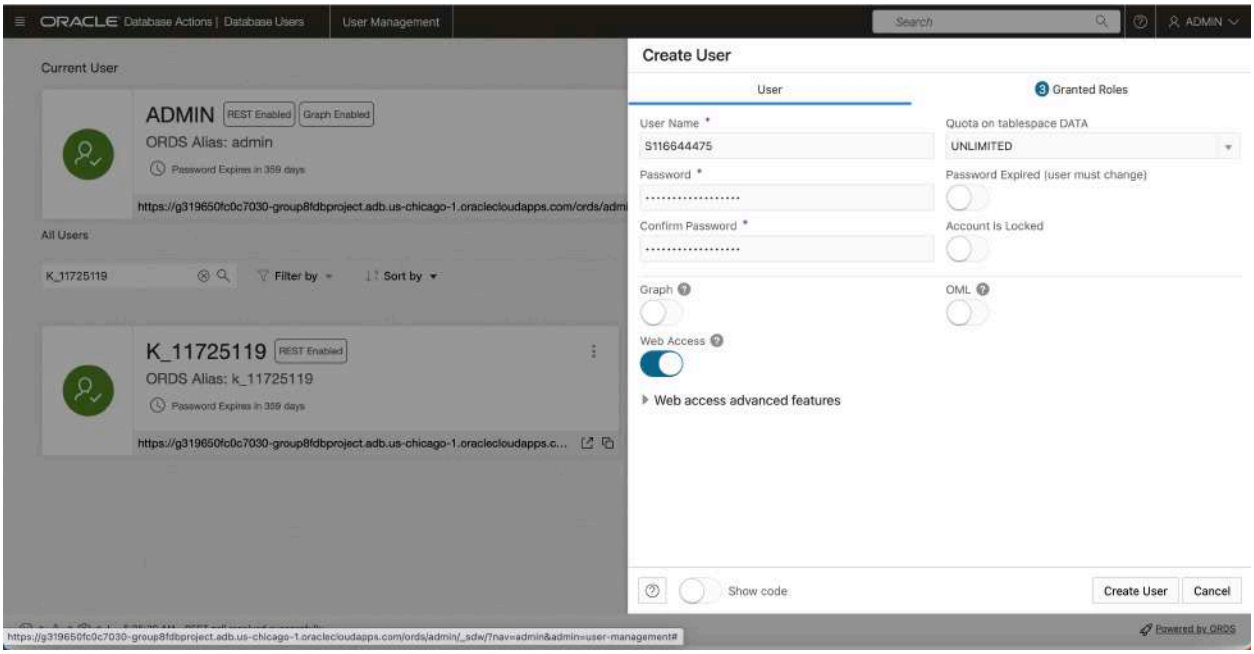


Figure-5: created S116644475 user.

In the same way remaining users were created. Here are the details of all the users:

ADMIN – Kanakalakshmi Murikipudi

V_11642773 – Vishnu Suidreddy - https://g319650fc0c7030-group8fdbproject.adb.us-chicago-1.oraclecloudapps.com/ords/v_11642773/_sdw/

SR_11667743 – Srinivas - https://g319650fc0c7030-group8fdbproject.adb.us-chicago-1.oraclecloudapps.com/ords/sr_11667743/_sdw/

S116644475 – Sindhu - https://g319650fc0c7030-group8fdbproject.adb.us-chicago-1.oraclecloudapps.com/ords/s116644475/_sdw/

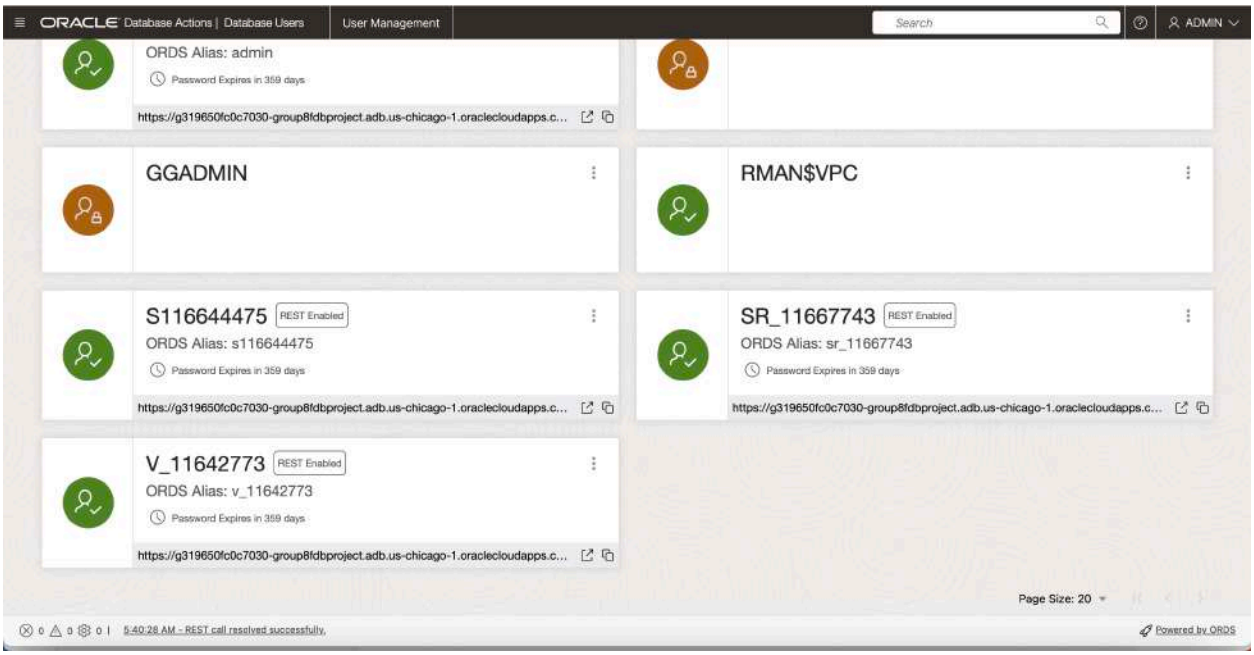


Figure-6: Displayed all the created users.

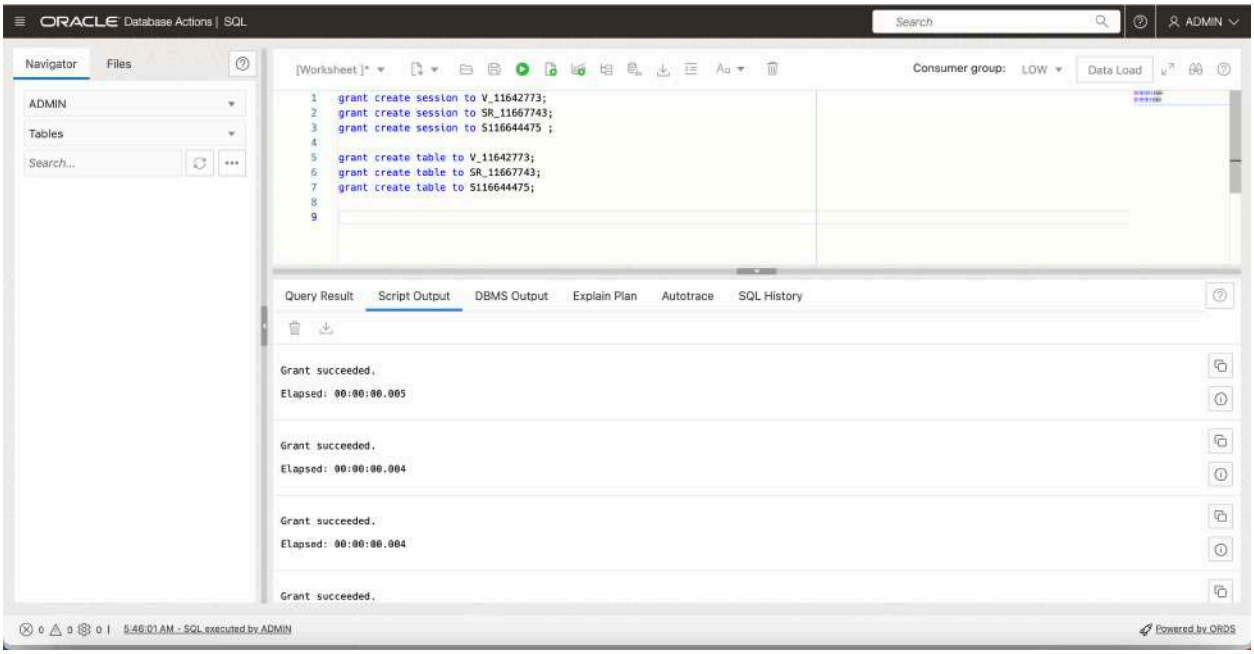


Figure-7: Granted access to create the session and create the tables to all the users.

Name	Cloud Accounts	Table Names
Naga Venkata Kanakalakshmi	ADMIN	automobile, supplier, automotive_retailer, inventory_product, inventory_product_supplier
Vishnu Vardhan Reddy Sudireddy	V_11642773	Employee, employee_payroll, job, job_employee
Srinivas Sankula	SR_11667743	address, part_service, bill, bill_inventory_product
Sai Sindhu Rudraraju	S116644475	payment_plan, insurance, customer, customer_insurance

Below are the reference screenshots attached for table creations and insertions with respect to user in a sequence.

Creation and Insertion of Data in Tables:

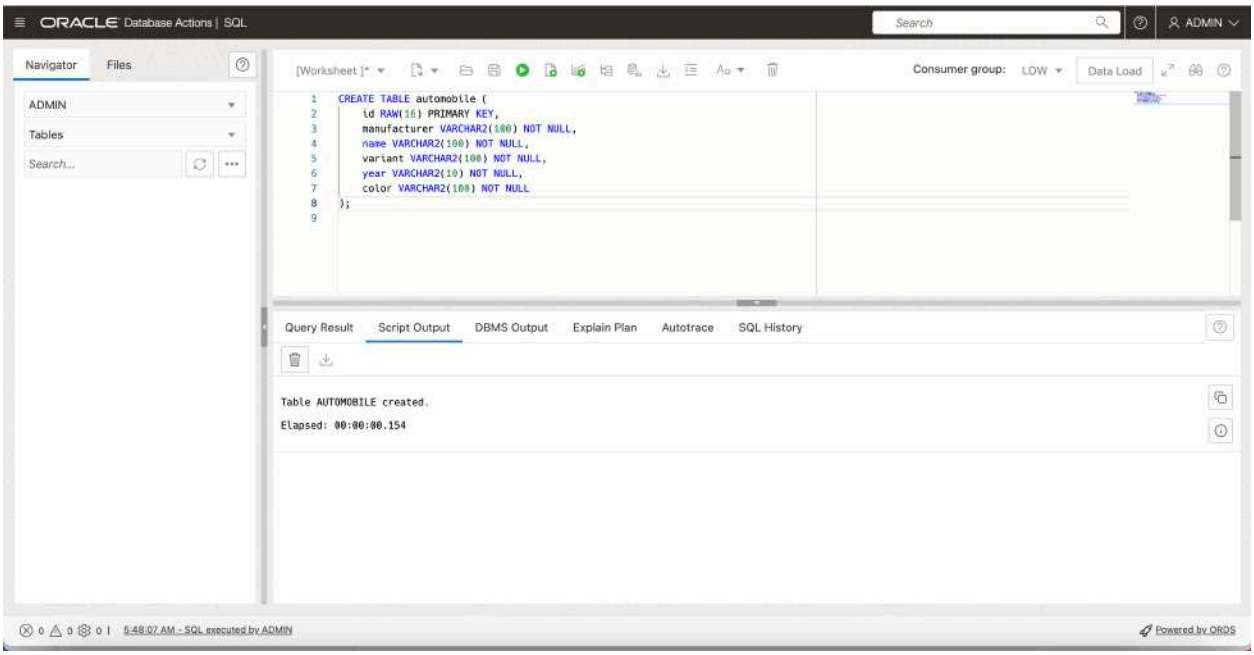


Figure-1: Created Automobile table.

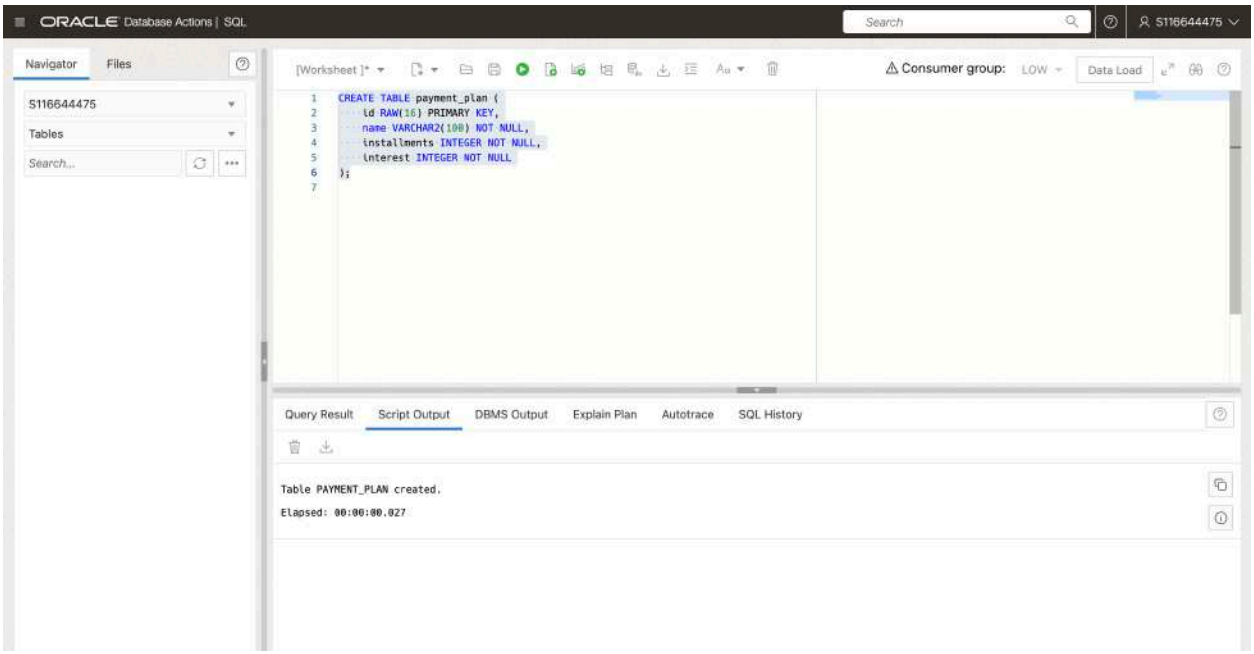


Figure-2: Created Payment plan table.

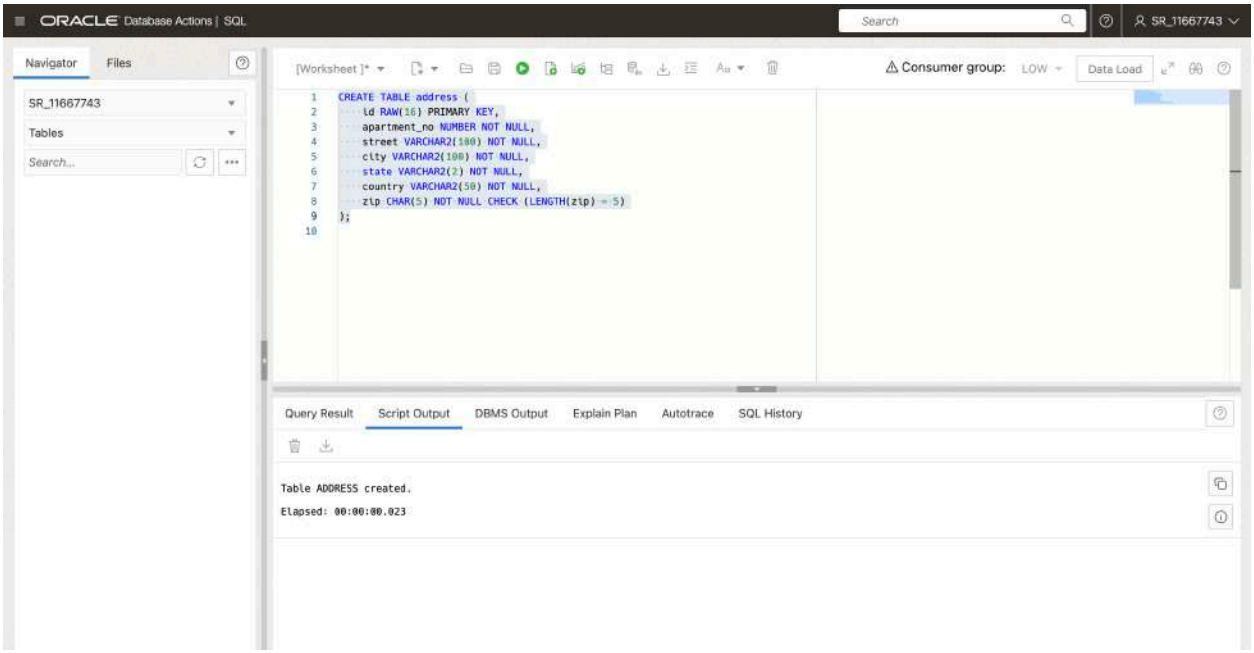


Figure-3: Created Address table

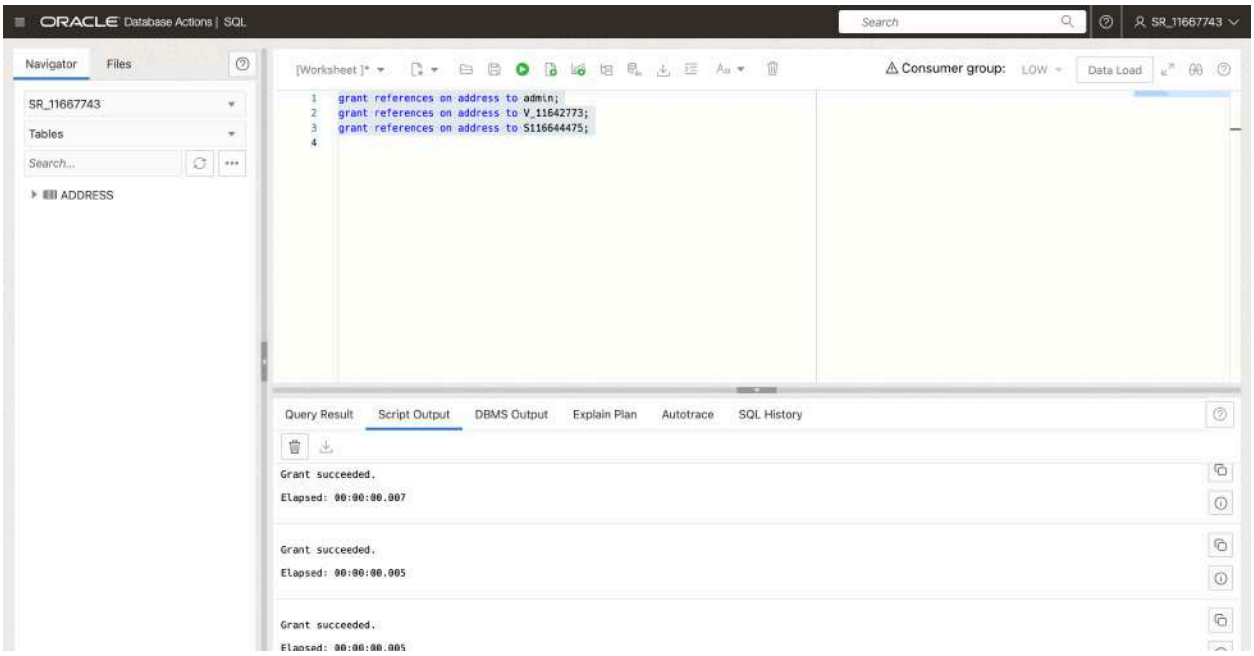


Figure-4: Granted Address References to remaining users from SR_11667743.

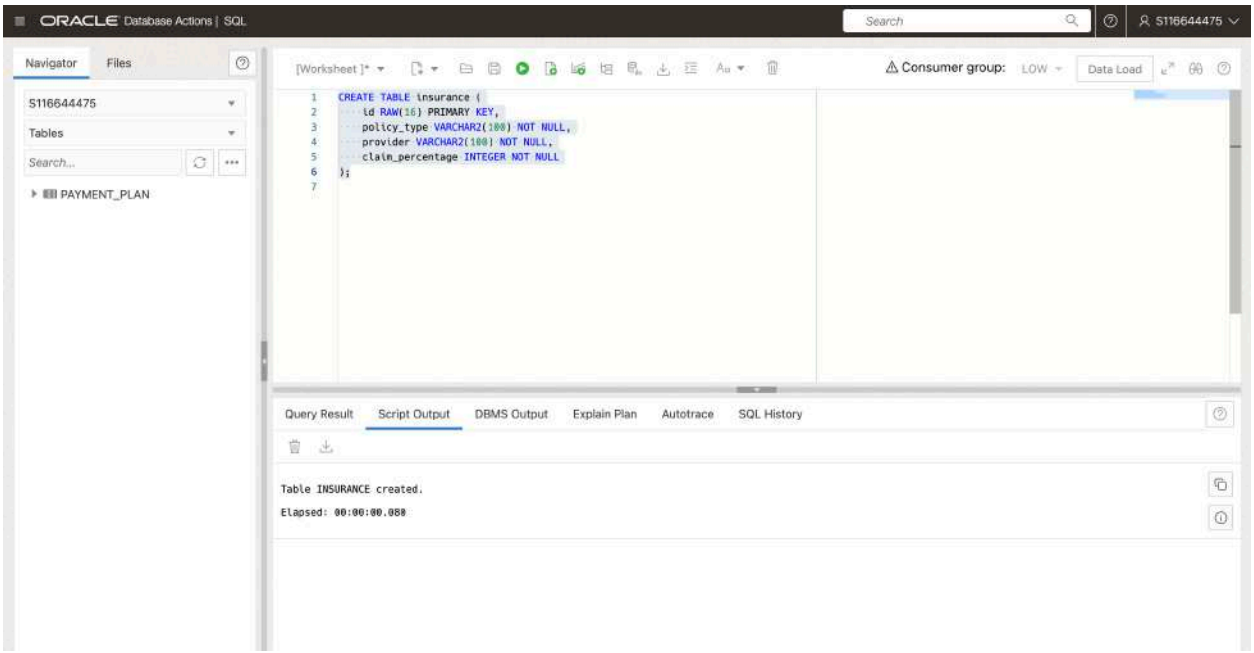


Figure-5: Created Insurance table.

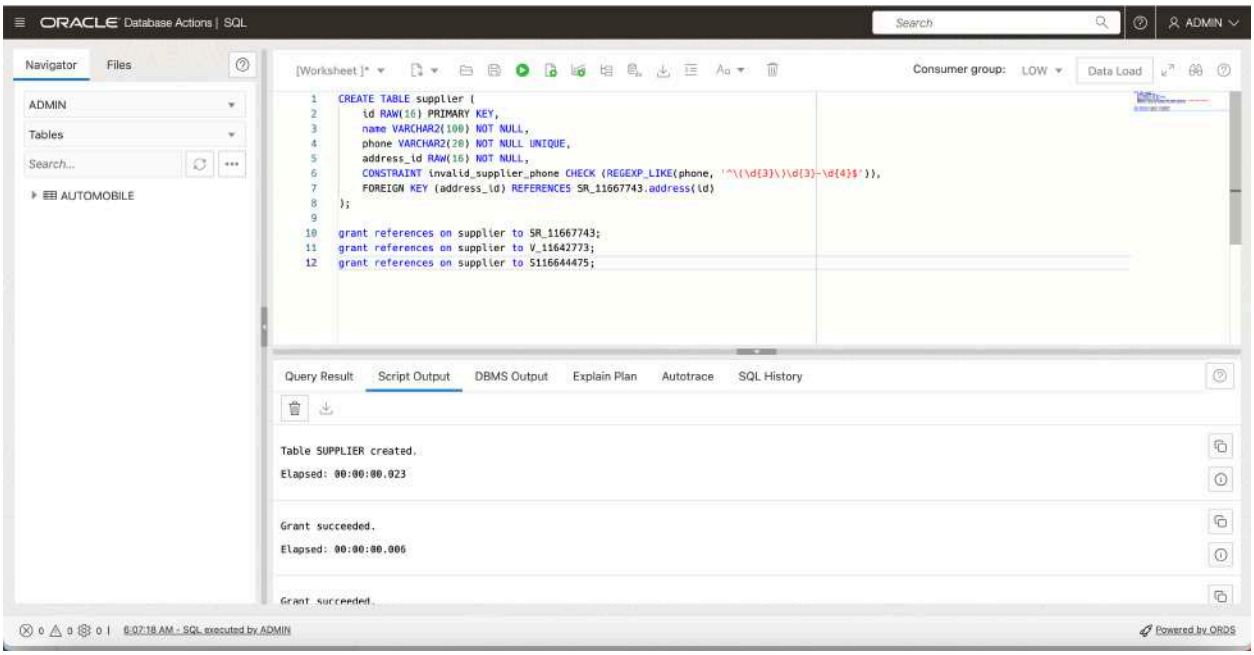


Figure-6: Created Supplier table and provided grant access to remaining users.

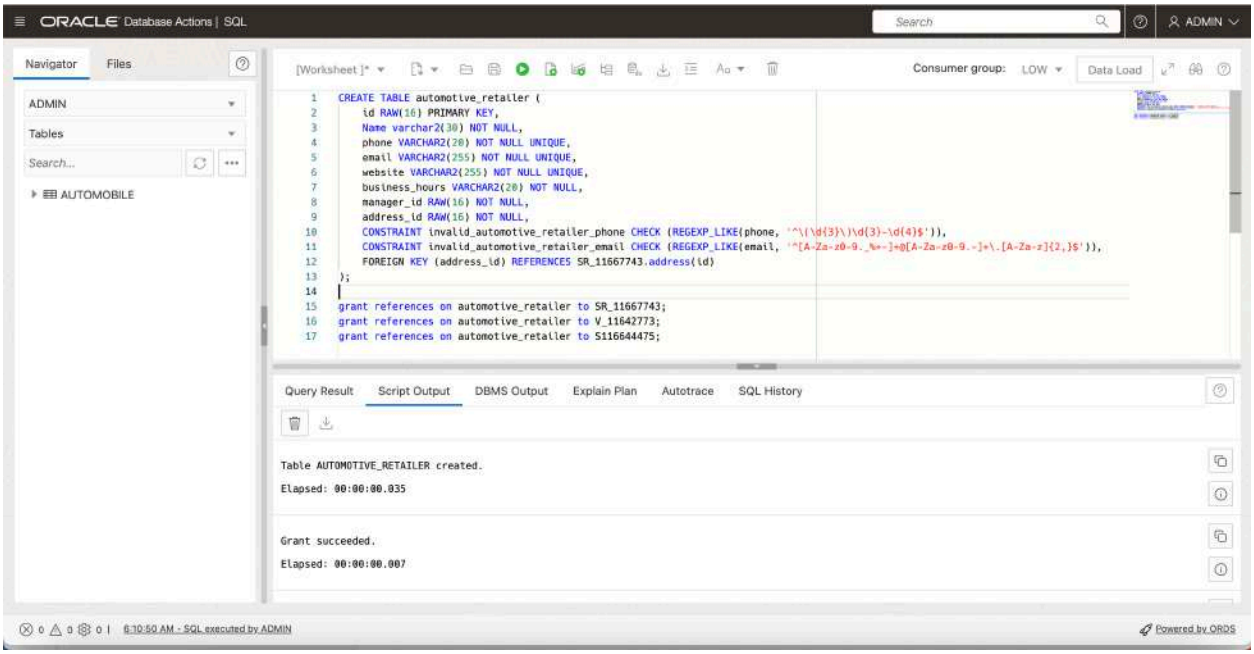


Figure-7: Created Automotive Retailer table and provided grant access to remaining users.

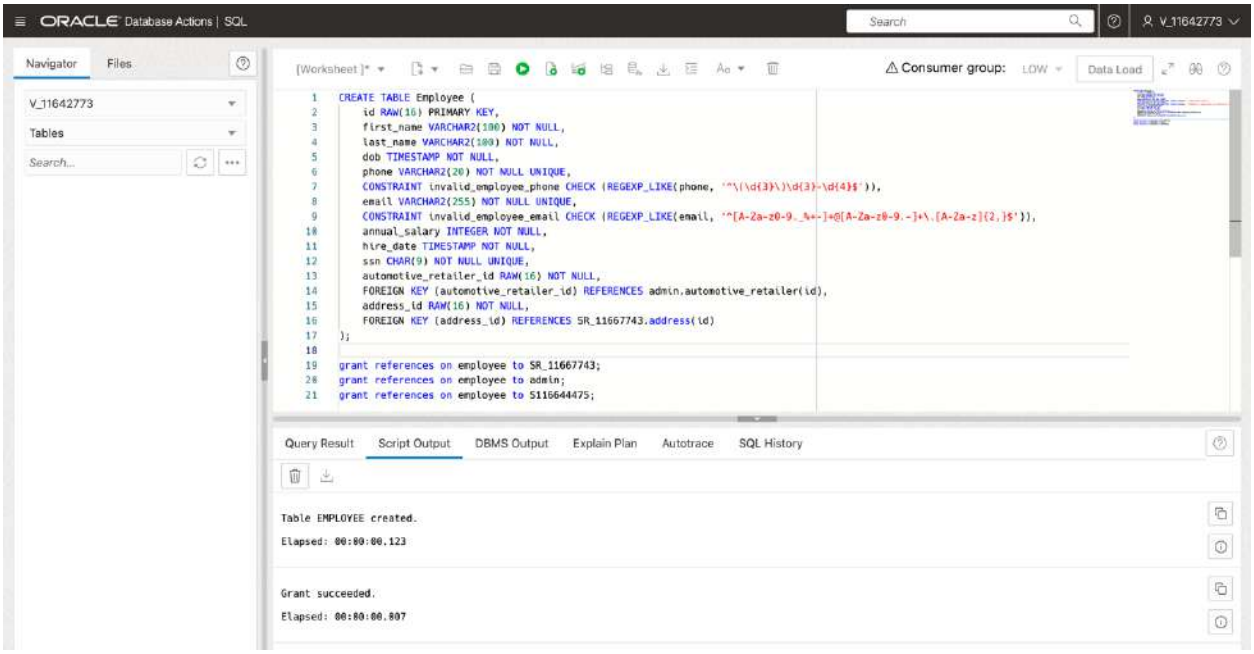


Figure-8: Created Employee table and provided grant access to remaining users.

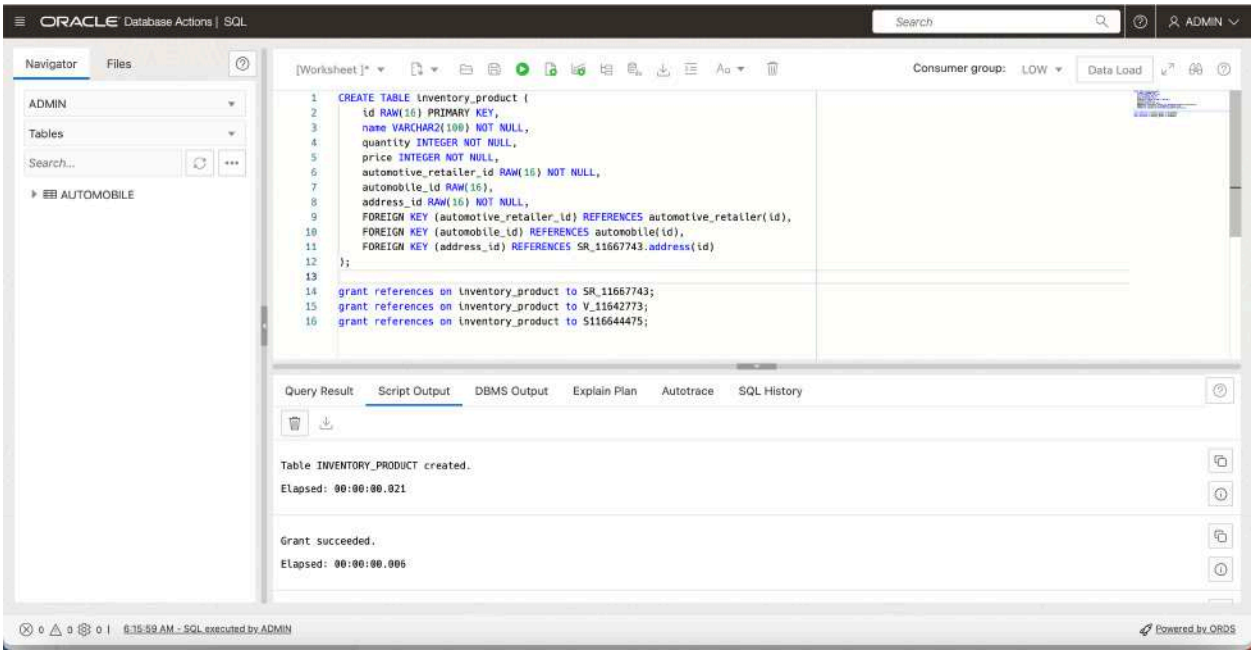


Figure-9: Created Inventory Product table and provided grant access to remaining users.

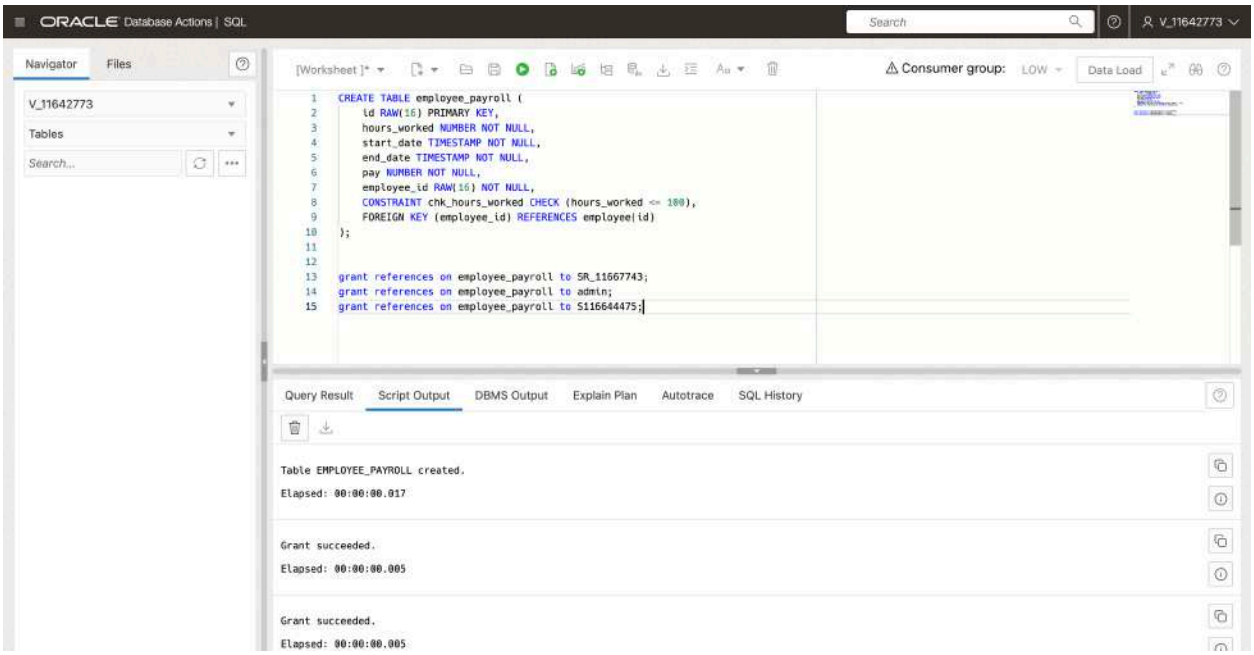


Figure-10: provided Employee Payroll table and created grant access to remaining users.

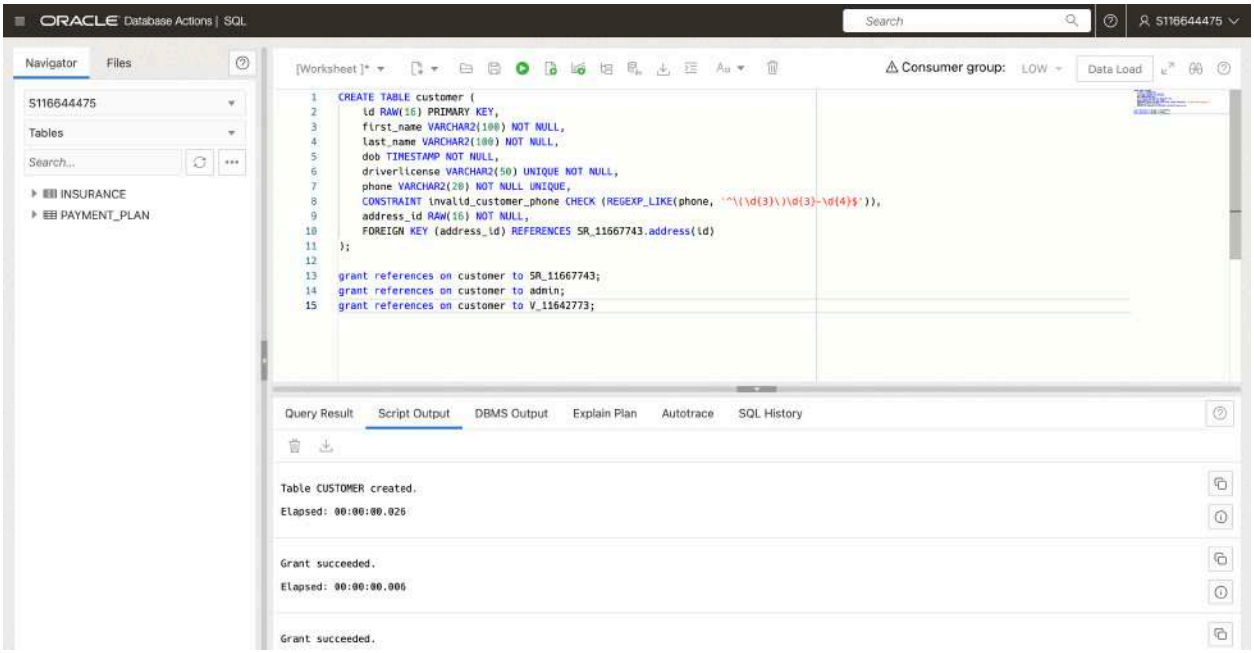


Figure-11: Created Customer table and provided grant access to remaining users.

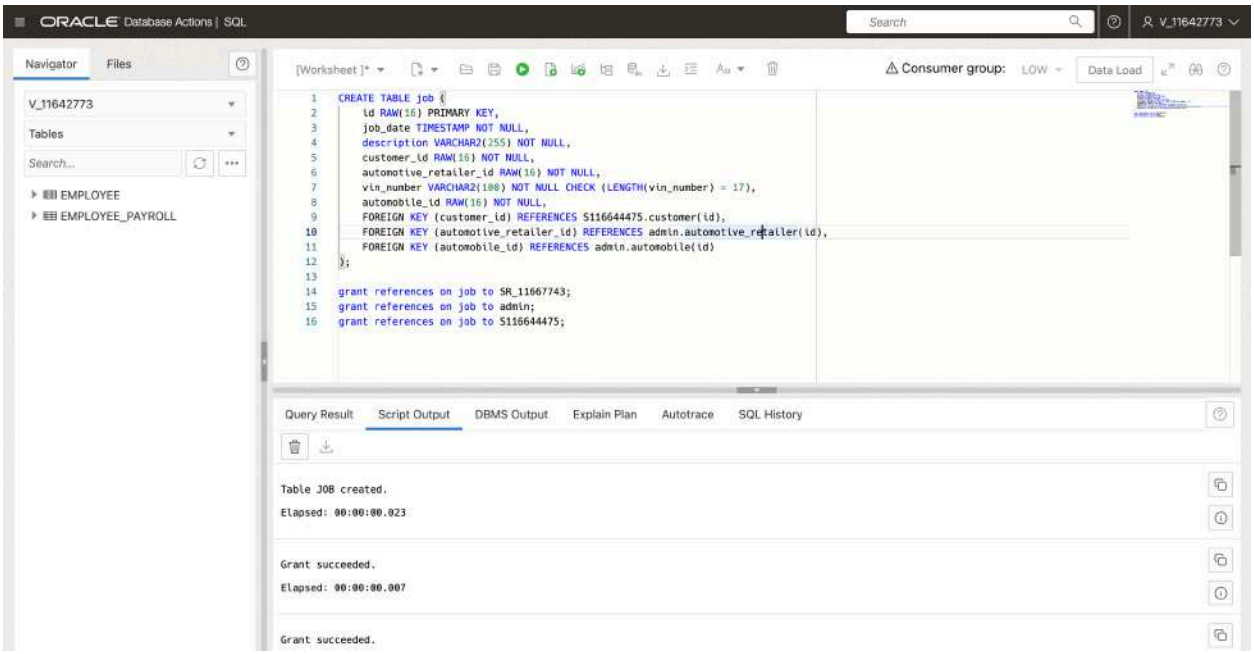


Figure-12: Created Job table and provided grant access to remaining users.

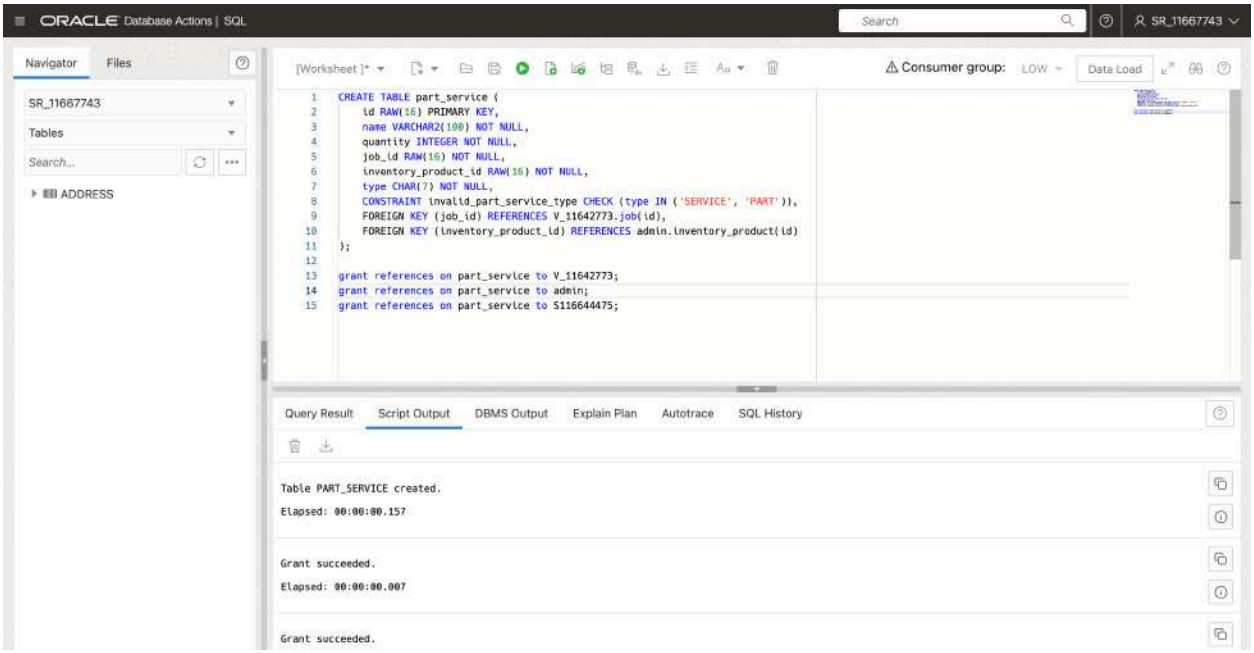


Figure-13: Created Part Service table and provided grant access to remaining users.

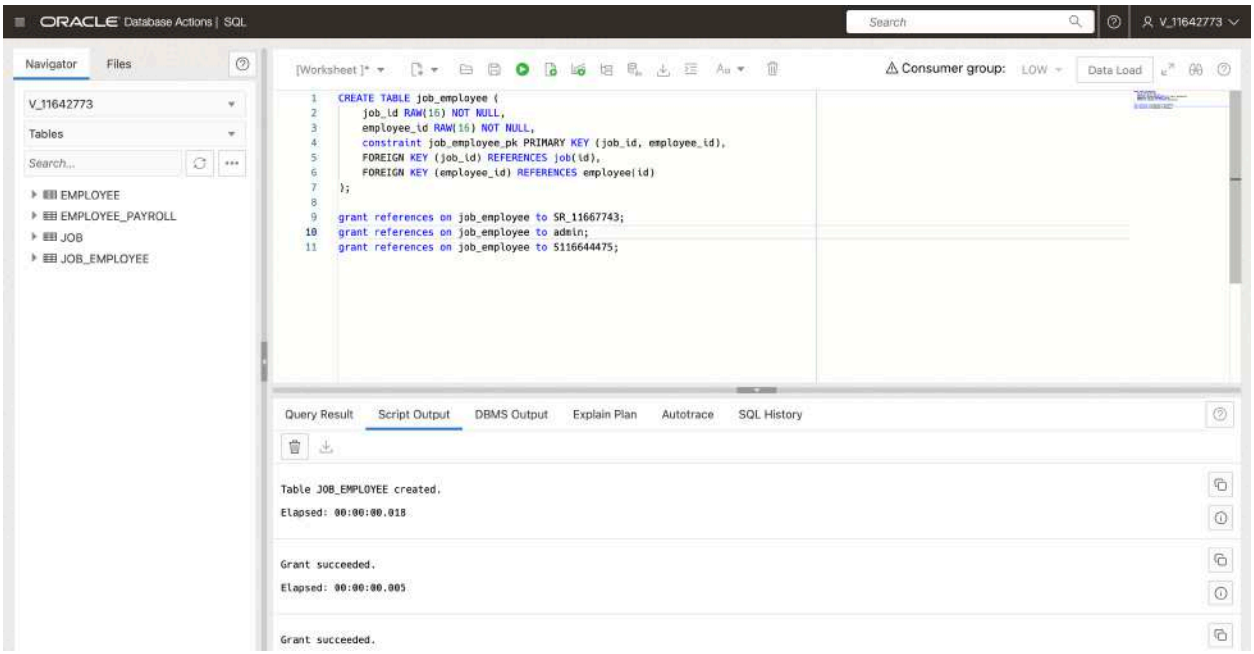


Figure-14: Created Job_employee relation table and provided grant access to remaining users.

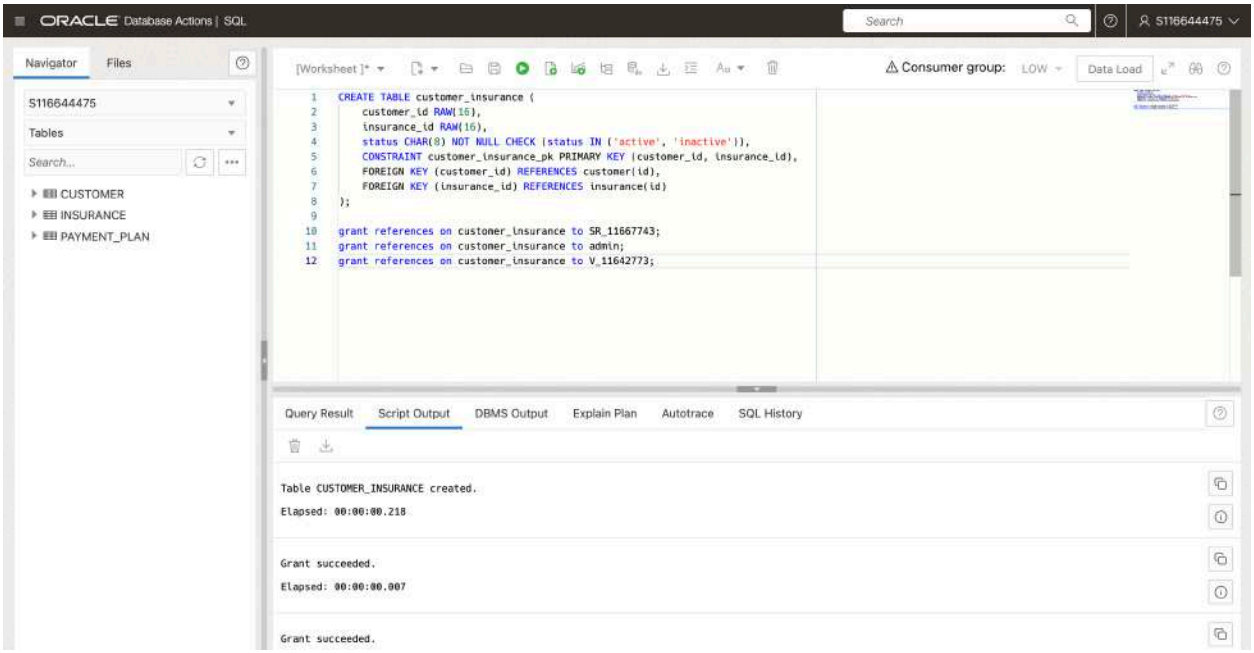


Figure-15: Created Customer_Insurance table and provided grant access to remaining users.

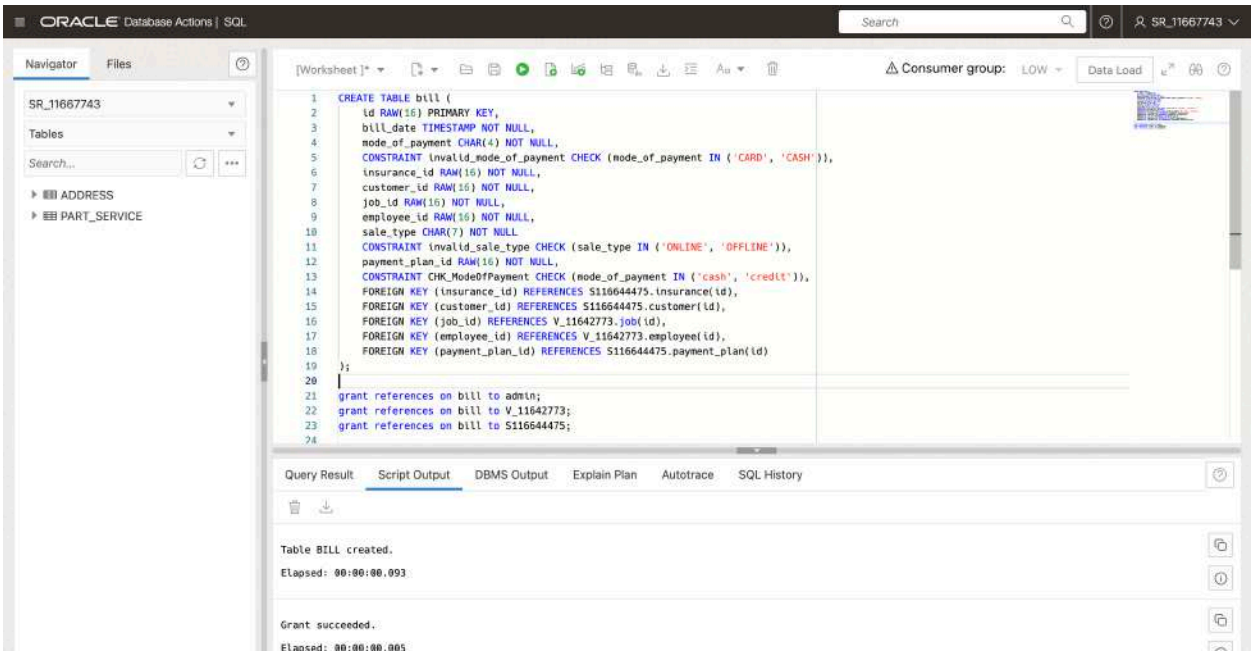


Figure-16: Created Bill table and provided grant access to remaining users.

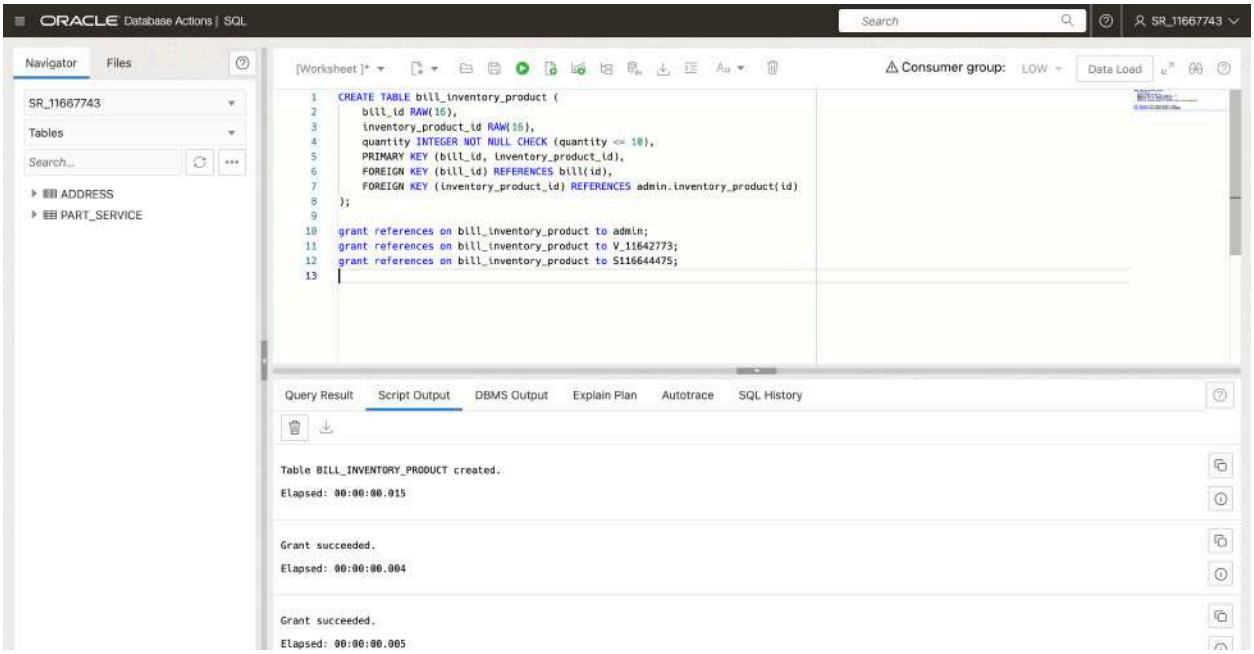


Figure-17: Created bill _inventory_product relation table and provided grant access to remaining users.

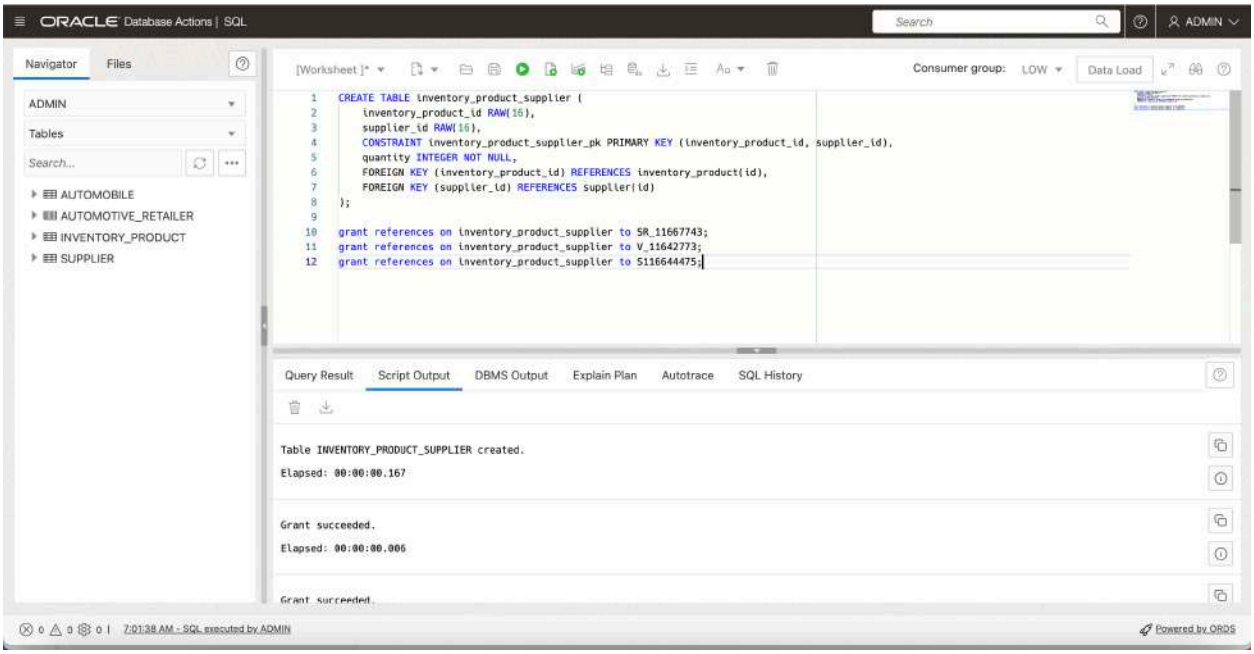


Figure-18: Created inventory_product_supplier relation table and provided grant access to remaining users.

Insertions:

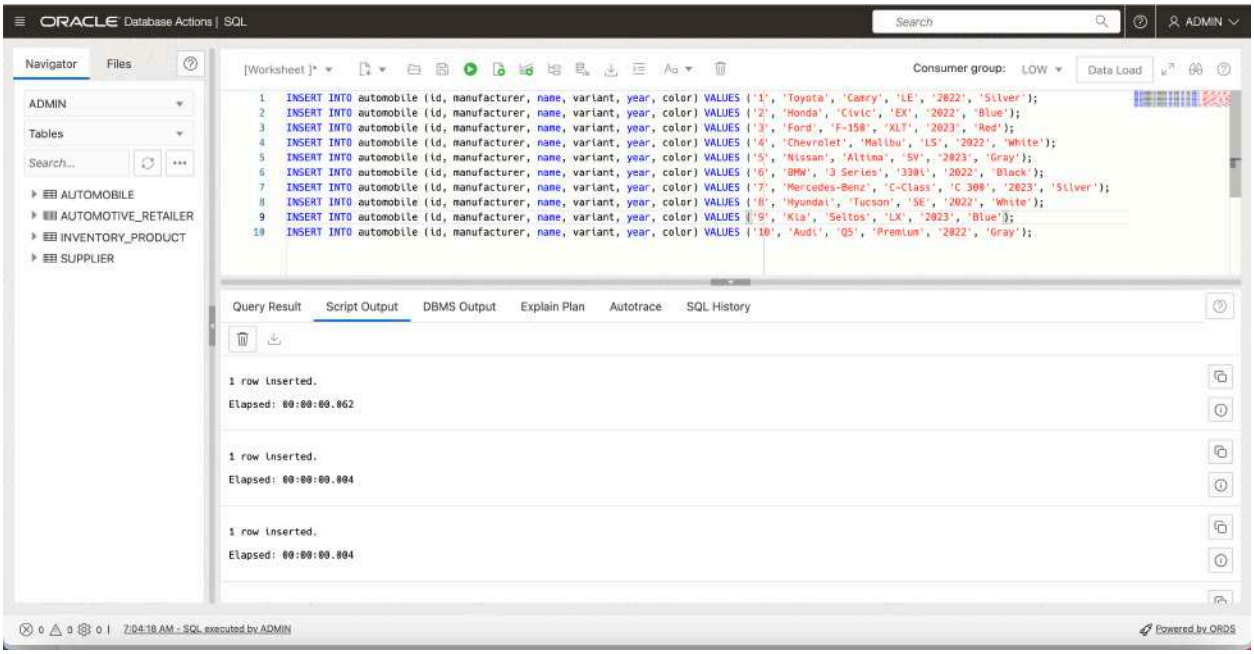


Figure-19: Inserted 10 records in automobile table.

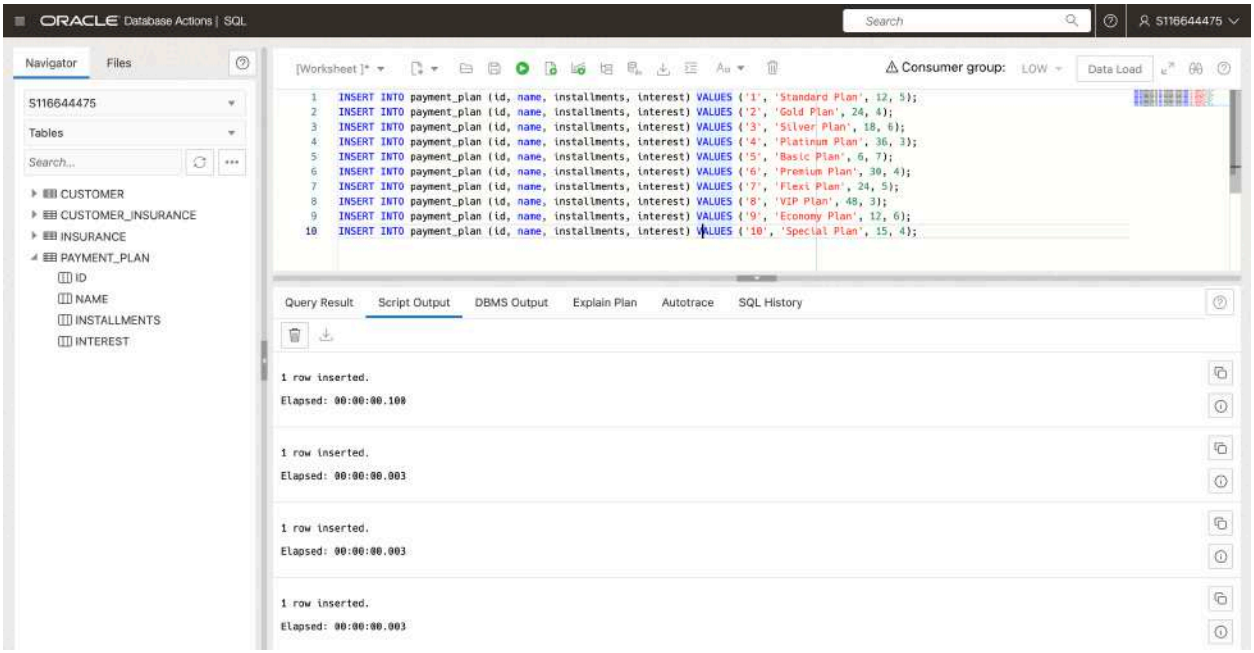


Figure-20: Inserted 10 records in payment_plan table.

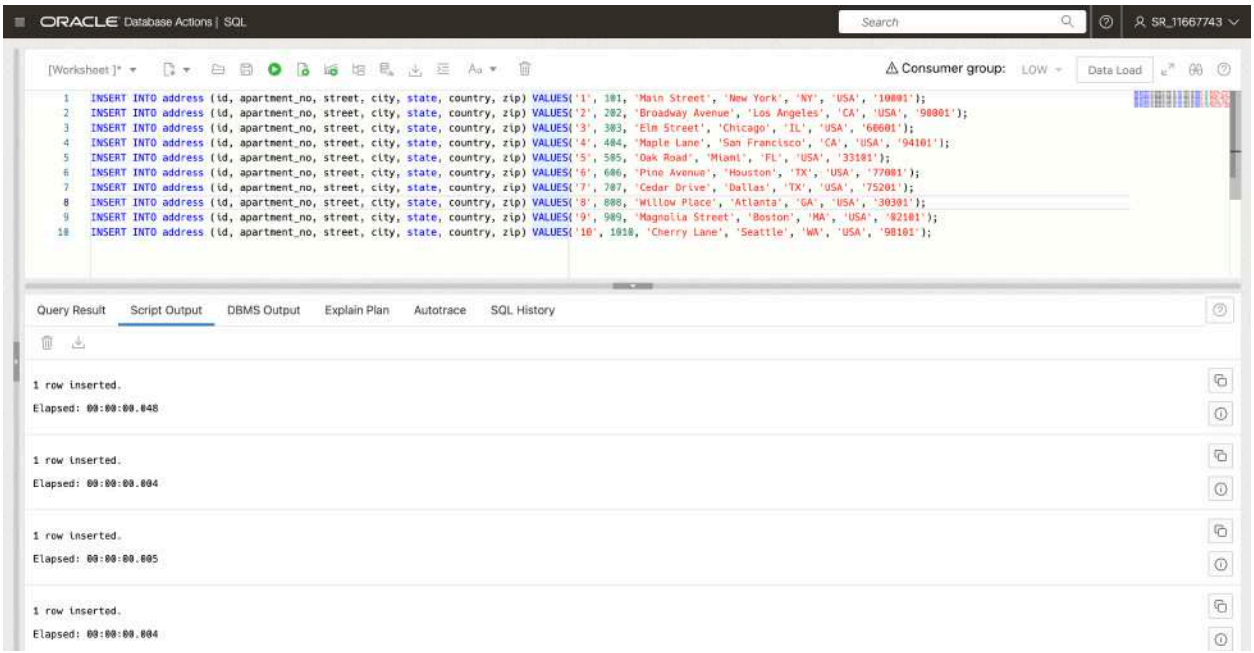


Figure-21: Inserted 10 records in address table.

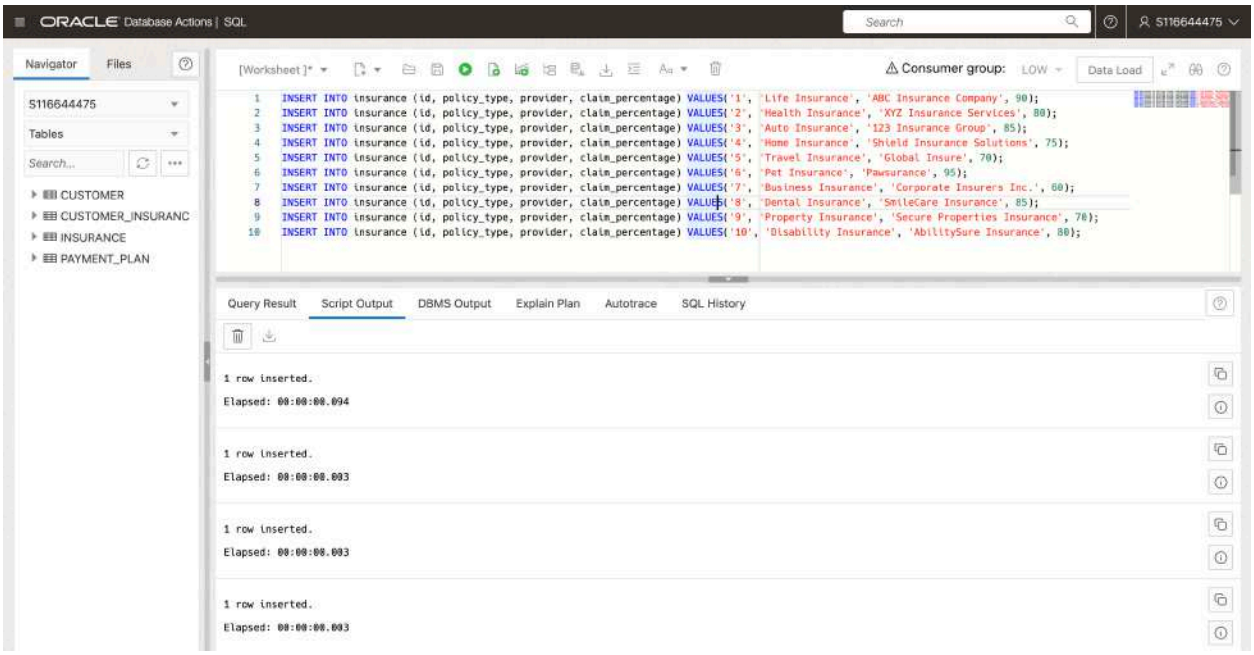


Figure-22: Inserted 10 records in insurance table.

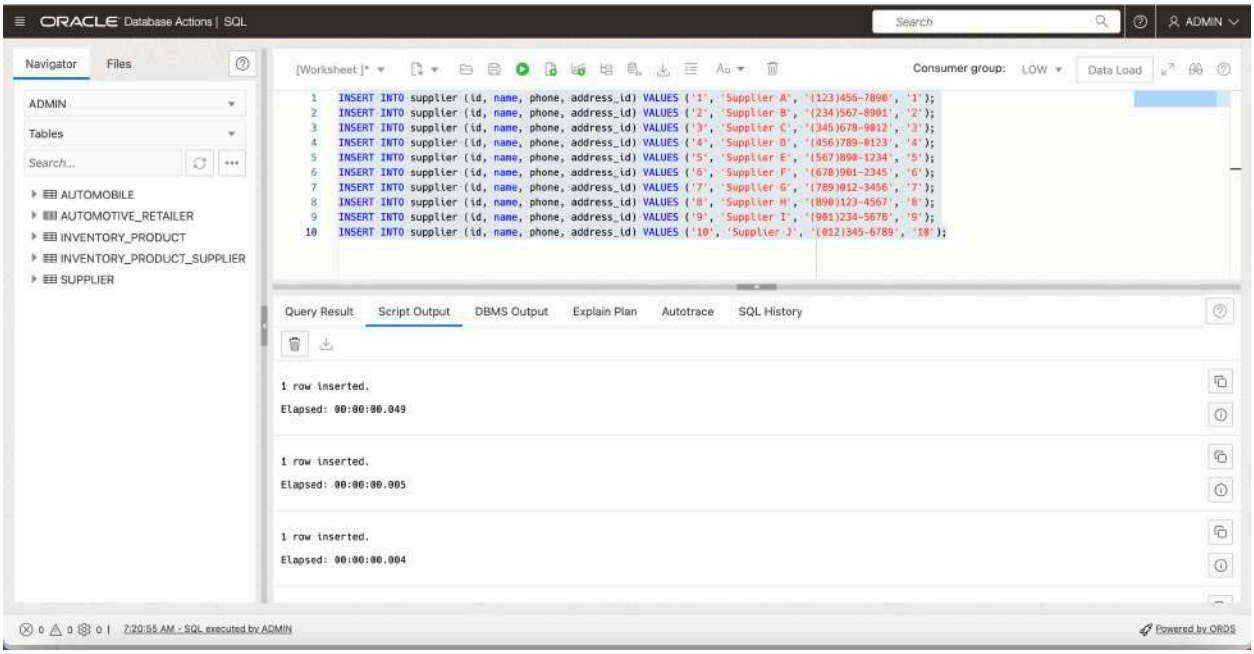


Figure-23: Inserted 10 records in supplier table.

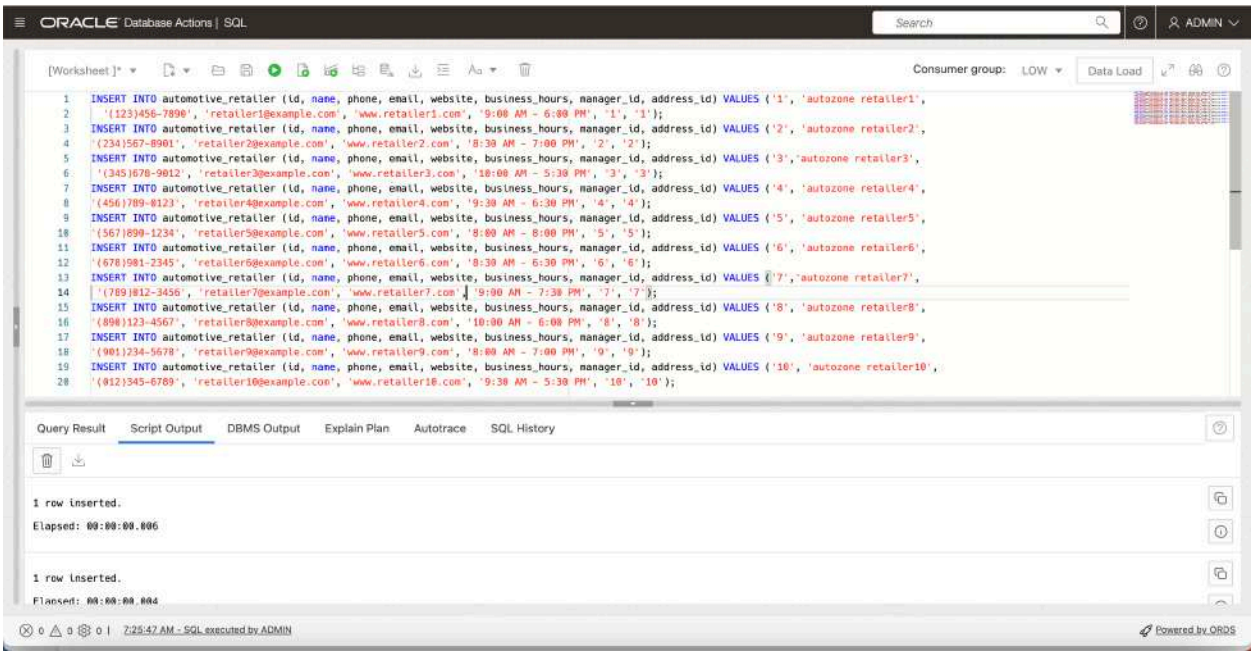


Figure-24: Inserted 10 records in automotive_retailer table.

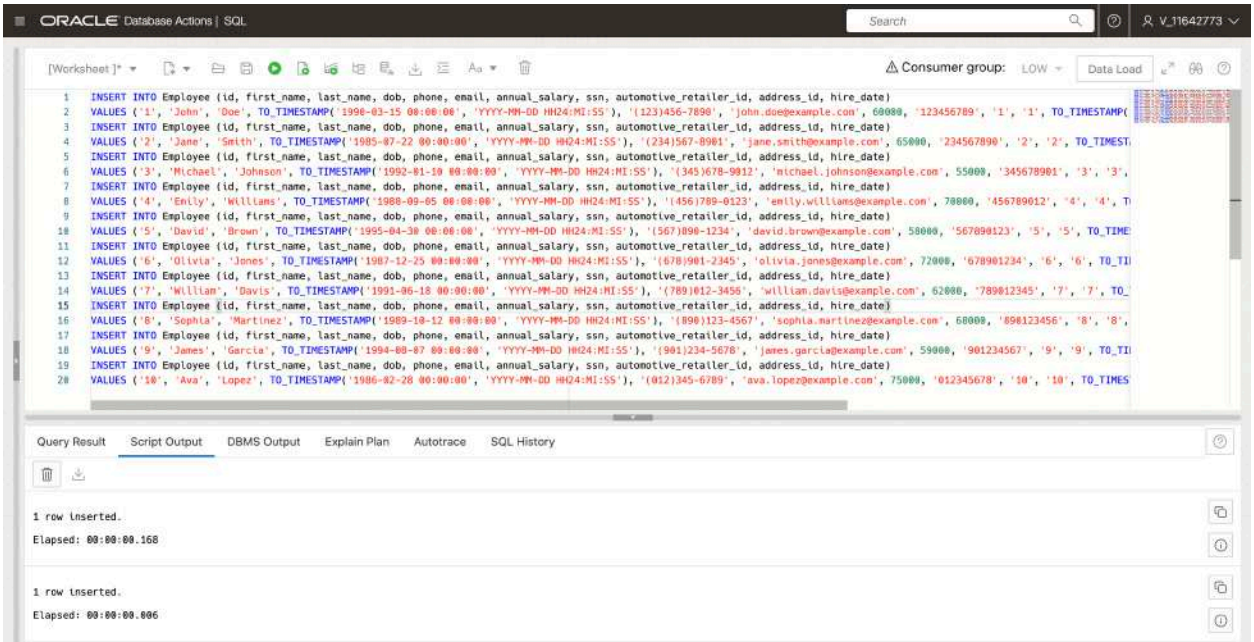


Figure-25: Inserted 10 records in employee table.

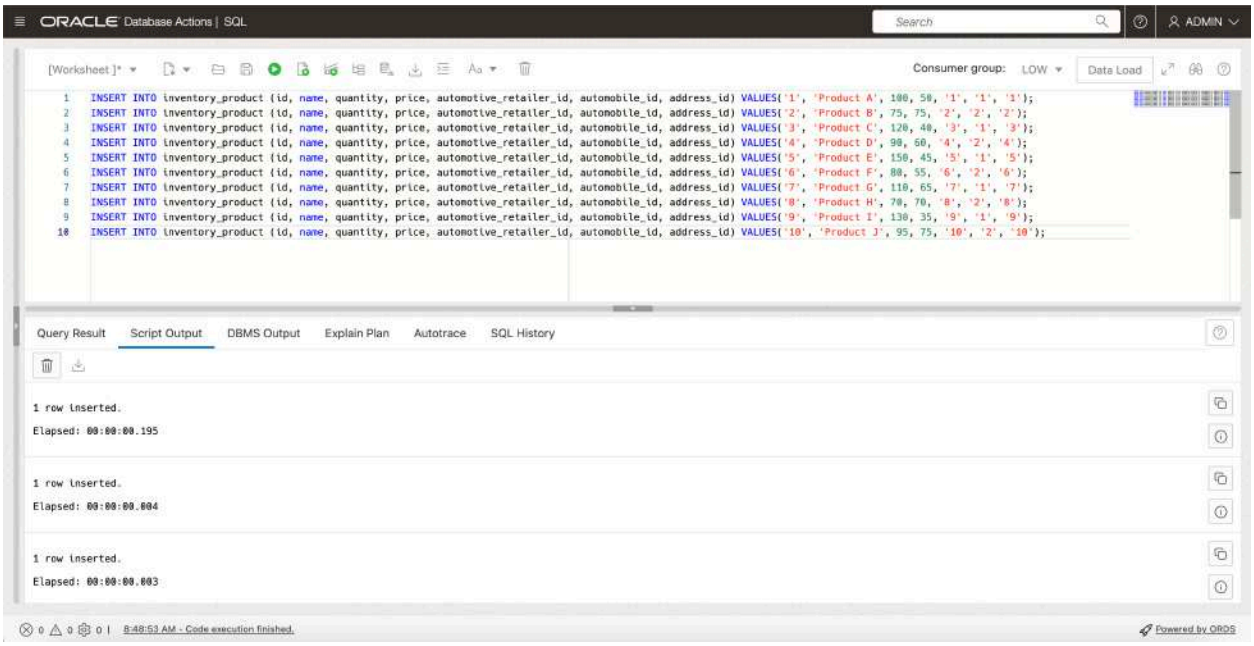


Figure-26: Inserted 10 records in inventory_product table.

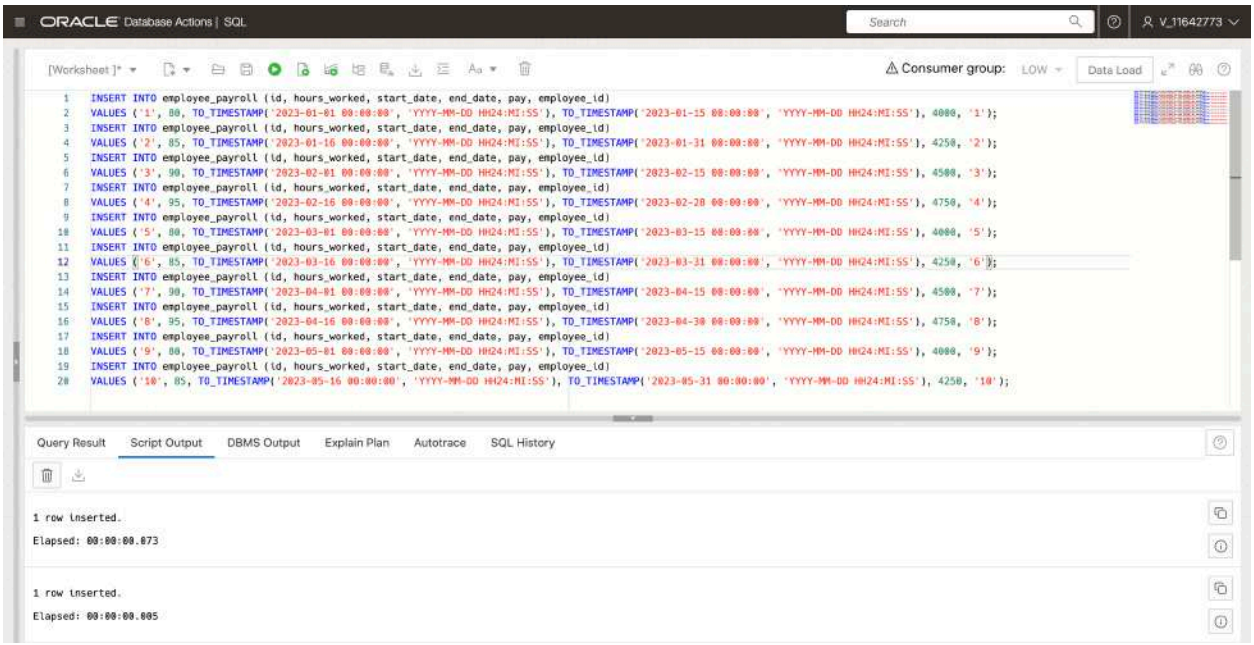


Figure-27: Inserted 10 records in employee_payroll table.

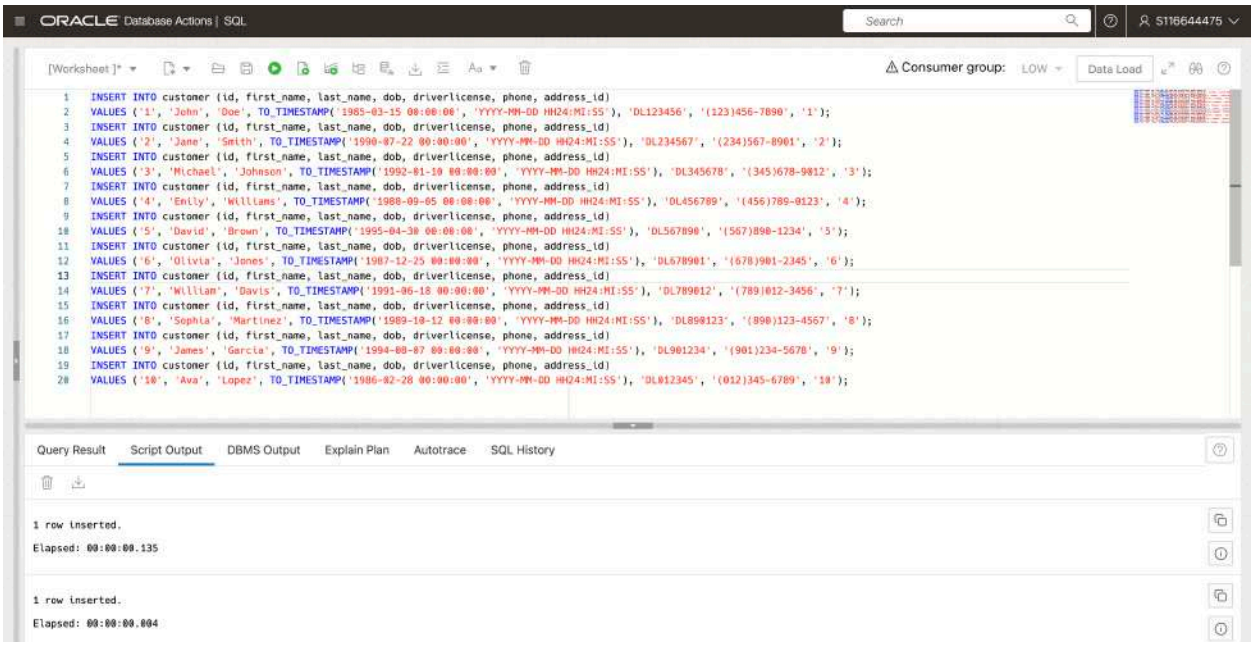


Figure-28: Inserted 10 records in customer table.

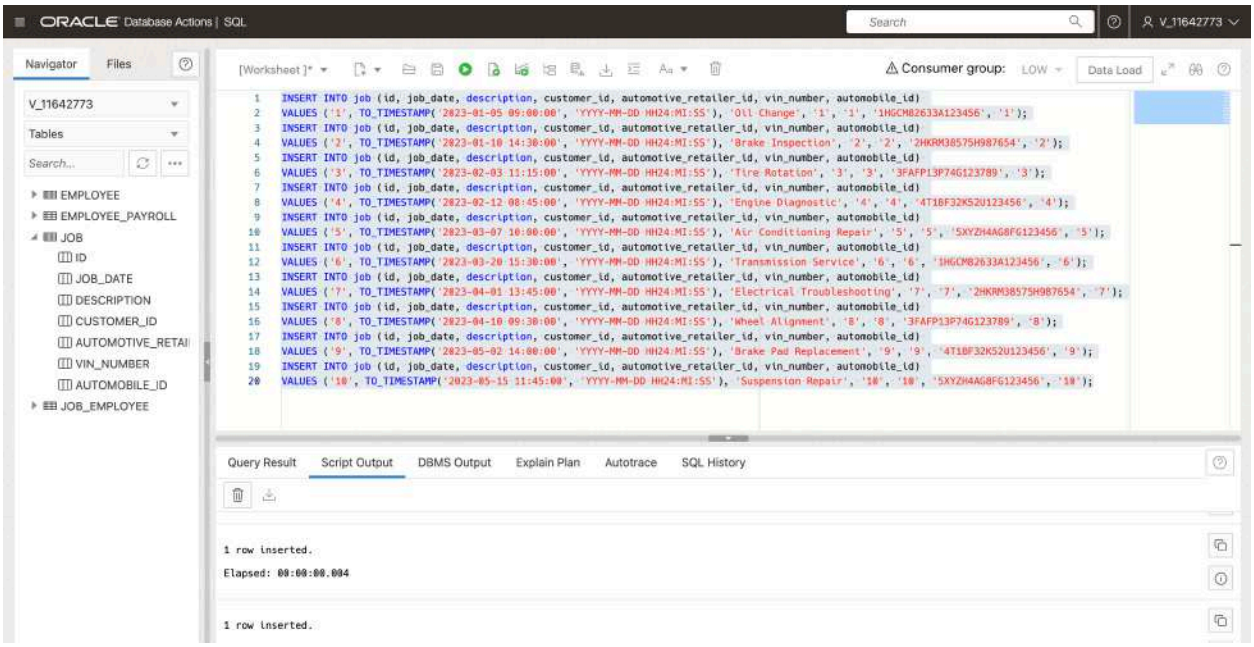


Figure-29: Inserted 10 records in job table.

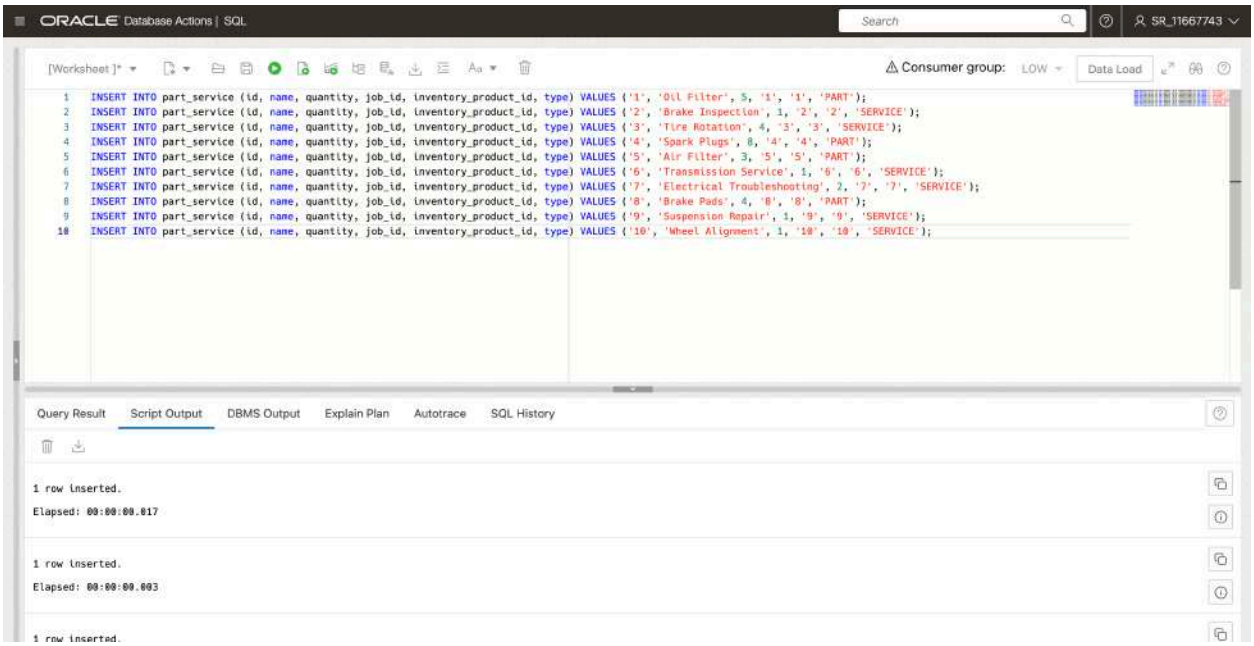


Figure-30: inserted 10 records in part_service table.

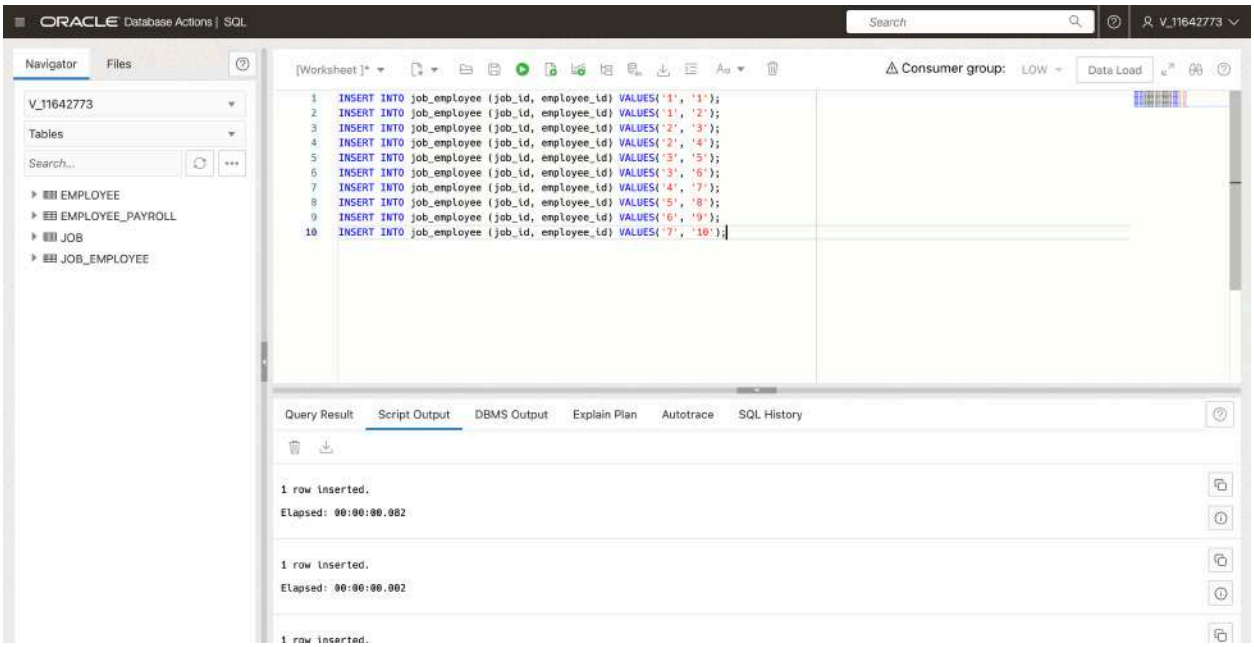


Figure-31: Inserted 10 records in job_employee table.

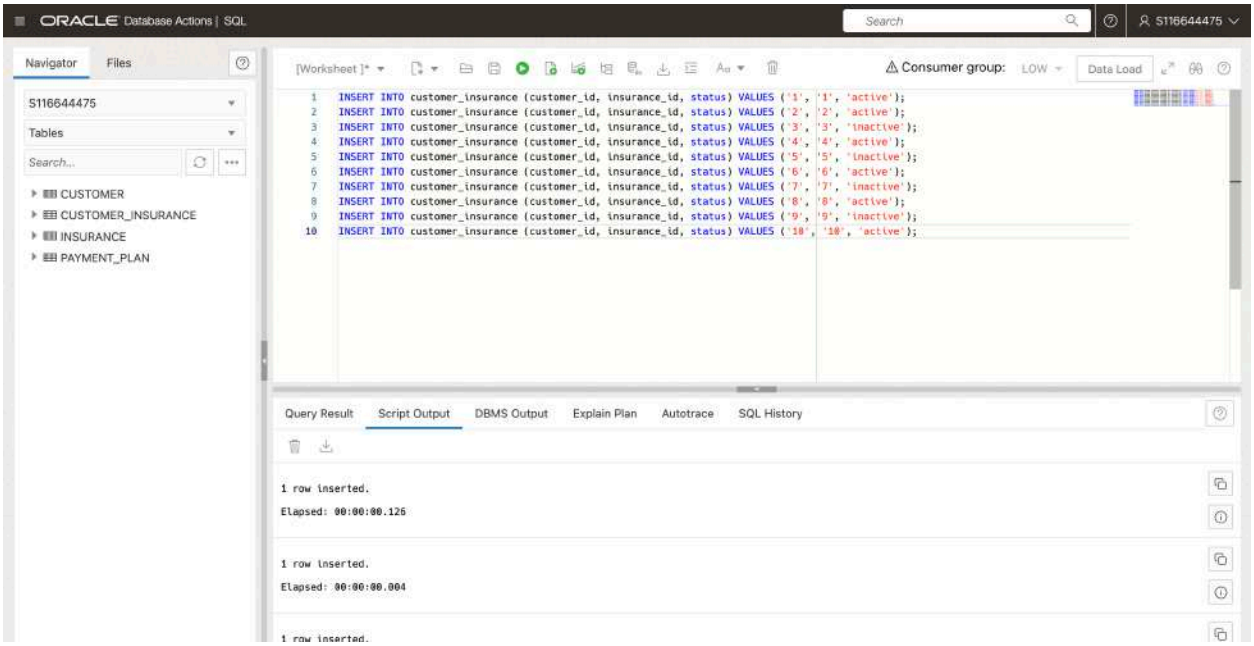


Figure-32: Inserted 10 records in Customer Insurance table.

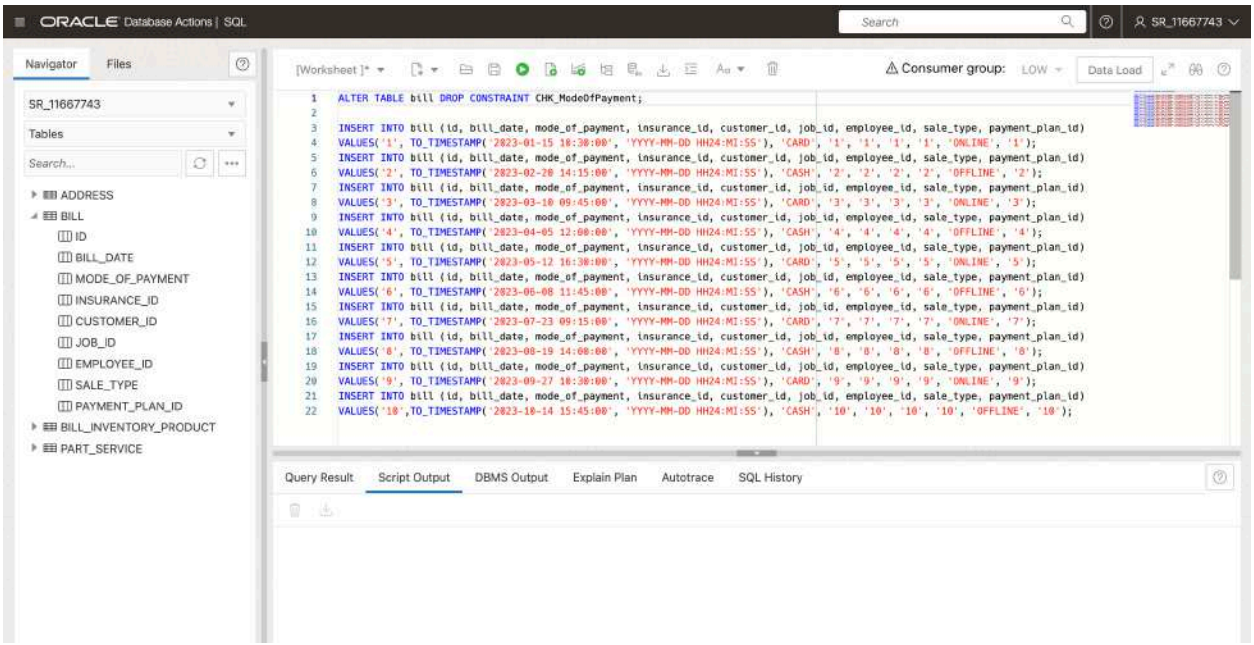


Figure-33: Dropped unnecessary constraints from bill table and inserted 10 records.

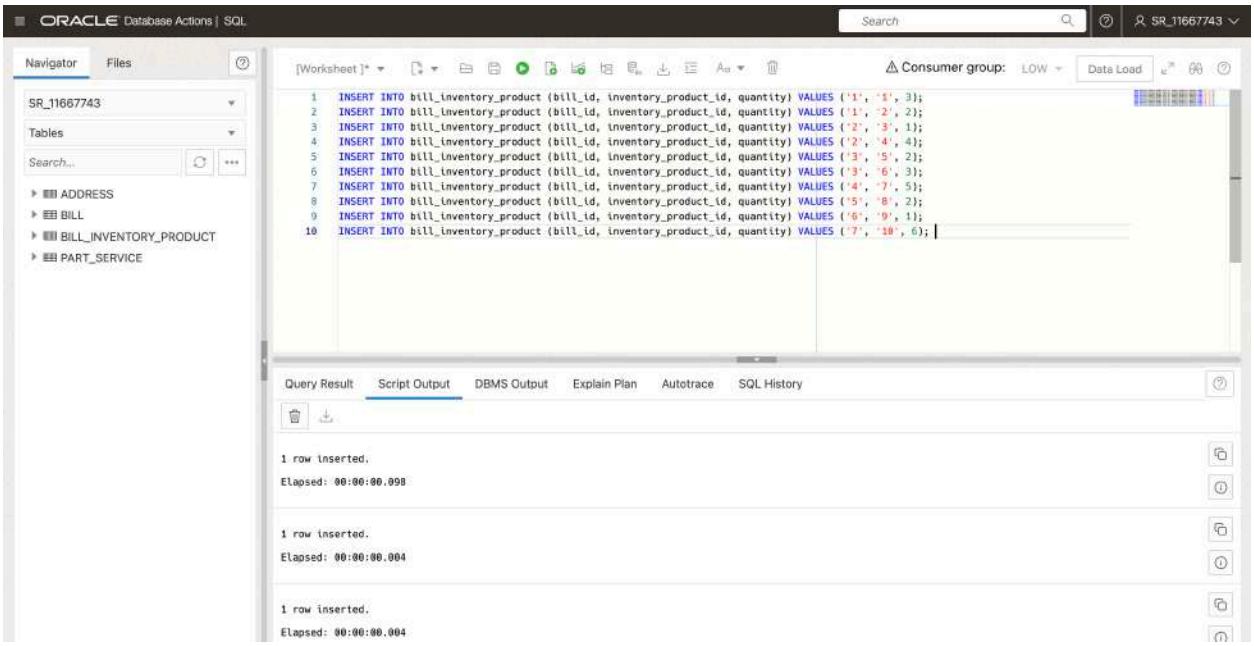


Figure-34: Inserted 10 records in bill_inventory_product table.

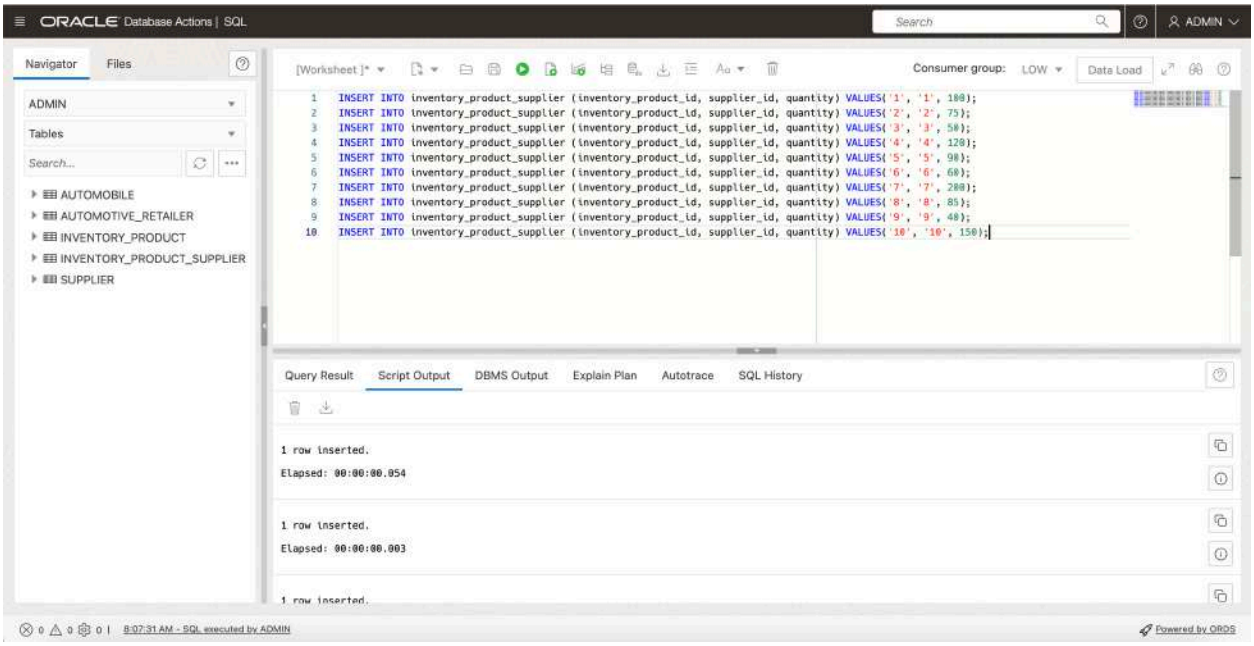


Figure-35: Inserted 10 records in inventory_product_supplier table.

Displaying the data in tables:

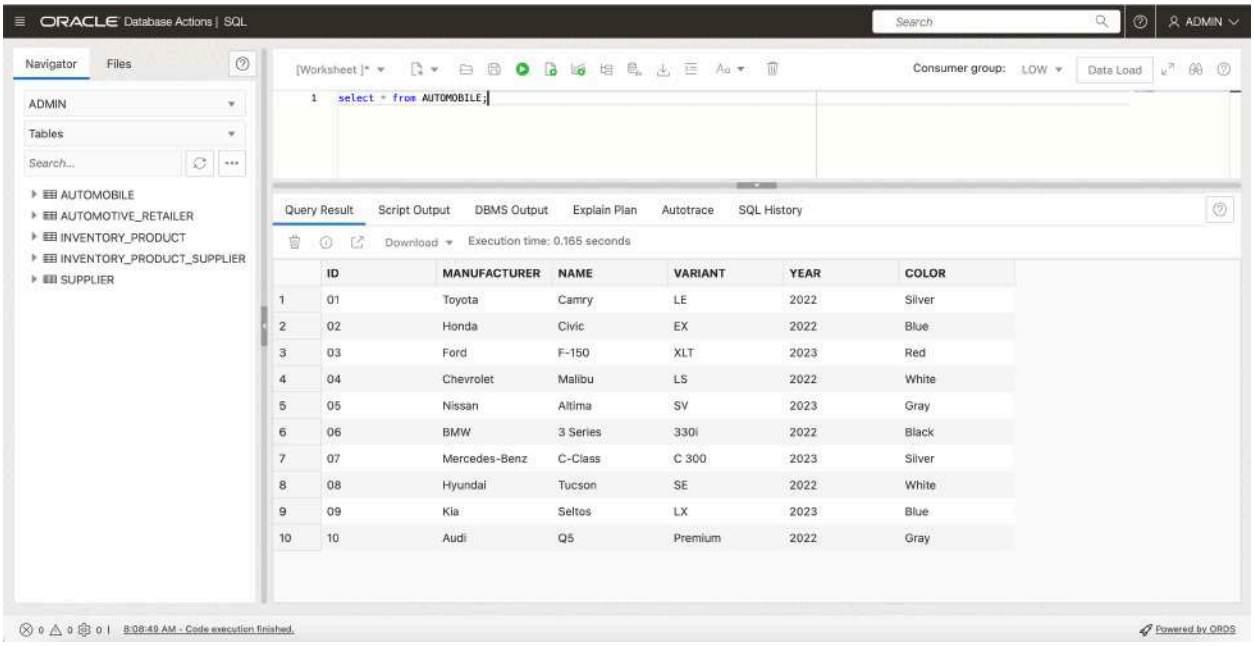


Figure-36: Displayed data in automobile table.

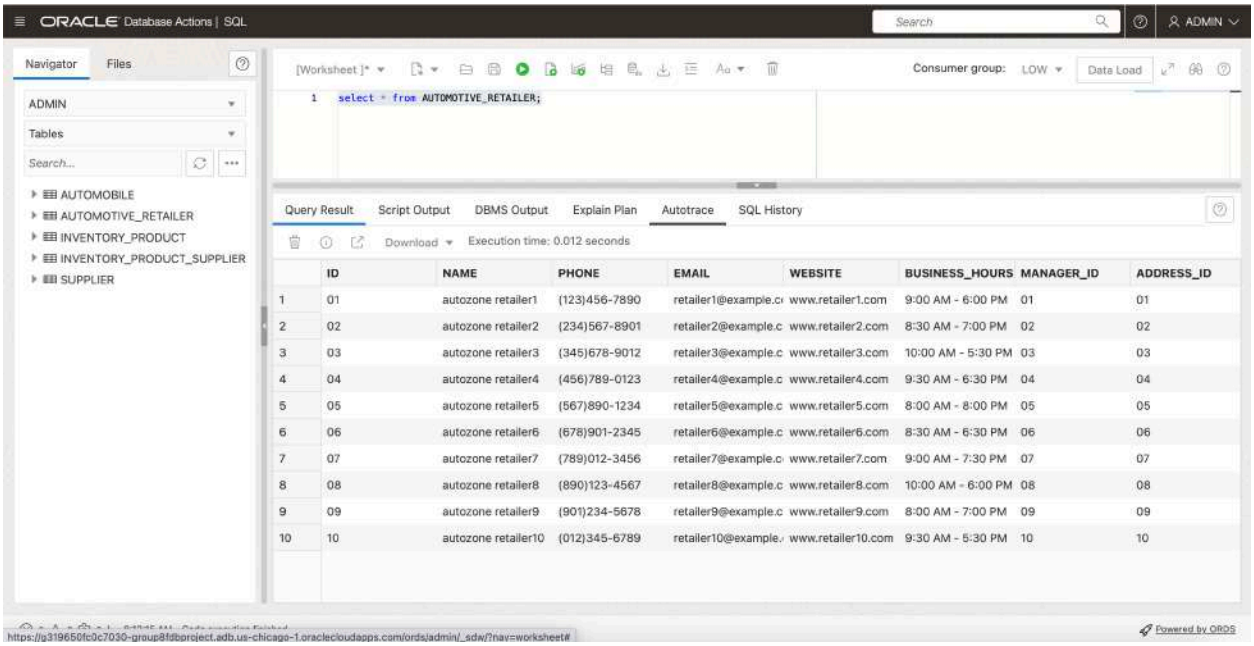


Figure-37: Displayed data in automotive_retailer table.

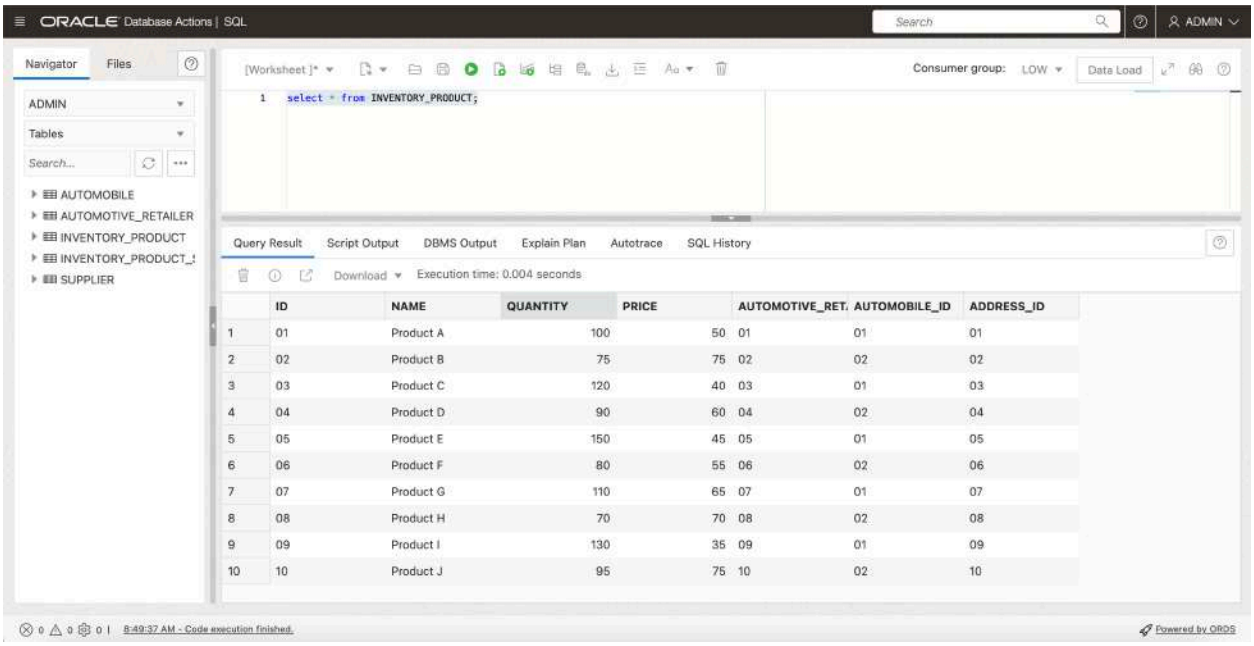


Figure-38: Displayed data in inventory_product table.

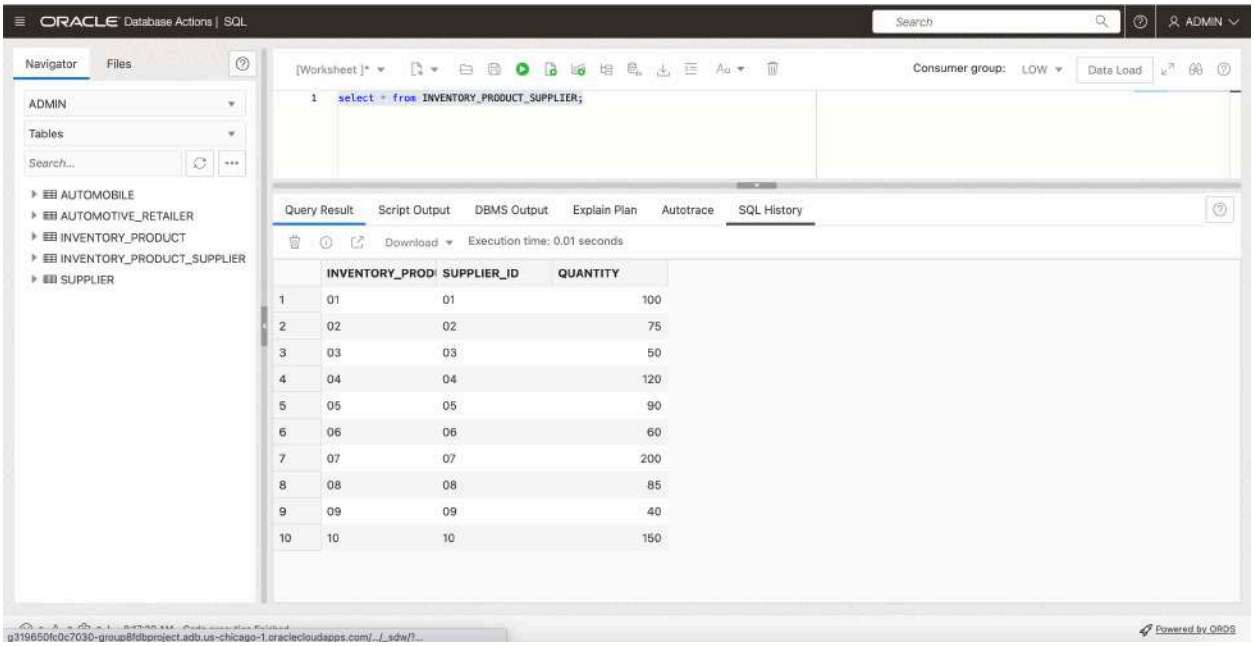


Figure-39: Displayed data in inventory_product_supplier table.

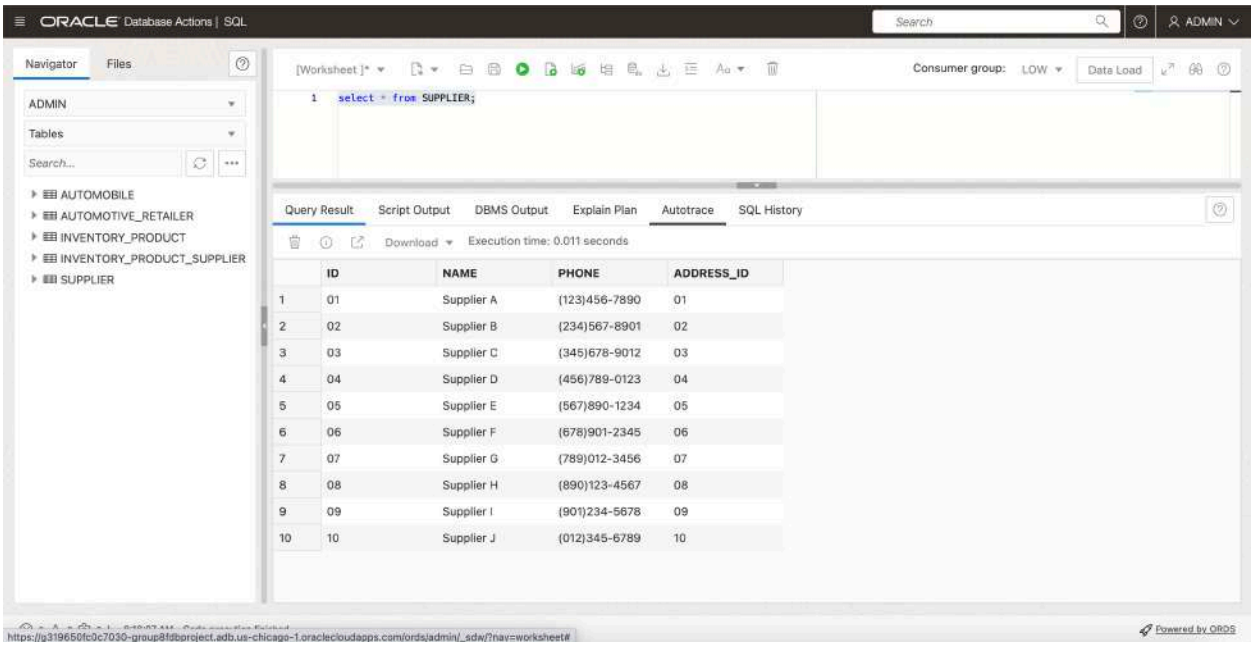


Figure-40: Displayed data in supplier table.

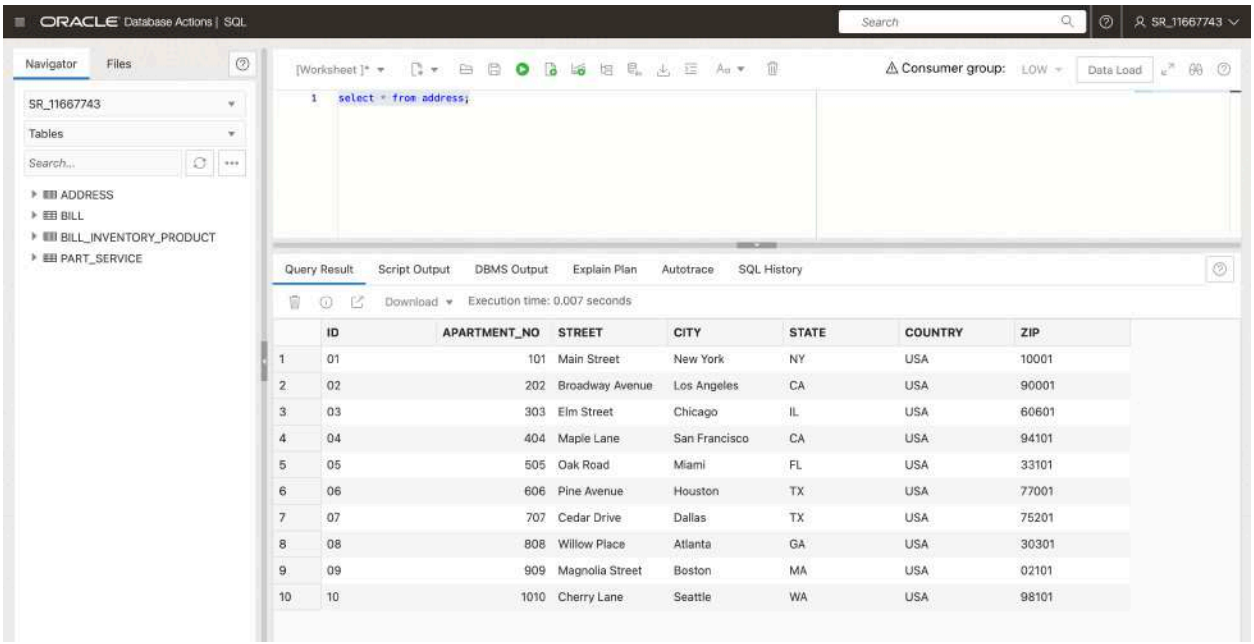


Figure-41: Displayed data in address table.

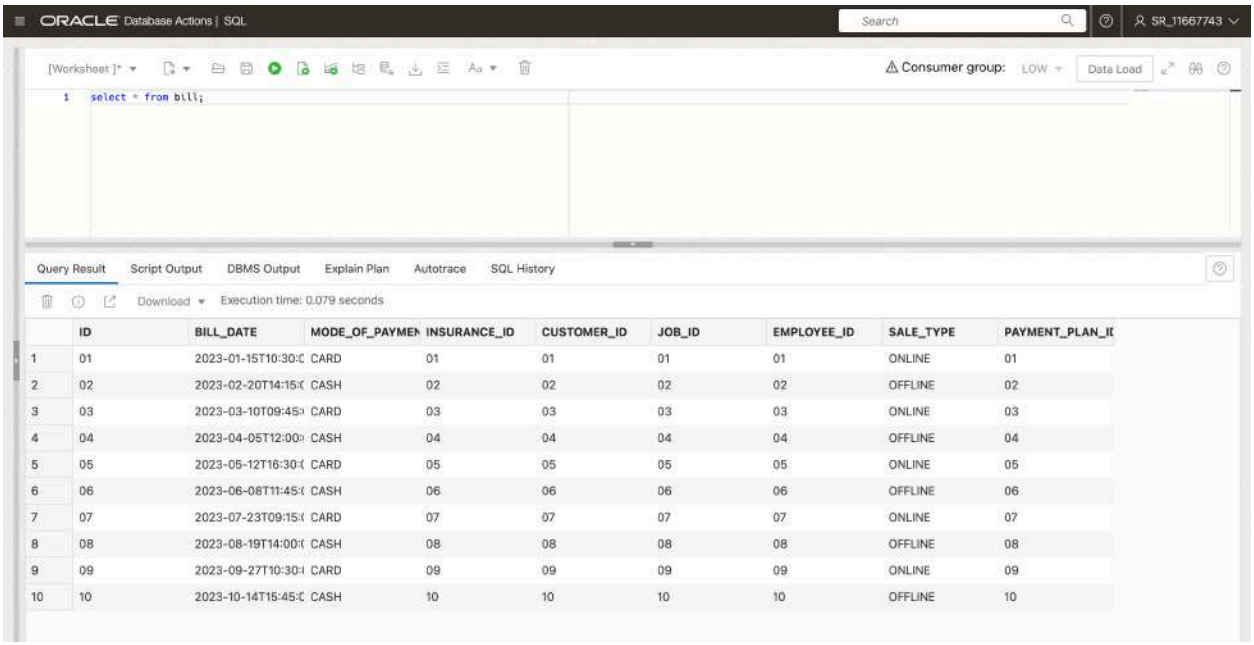


Figure-42: Displayed data in bill table.

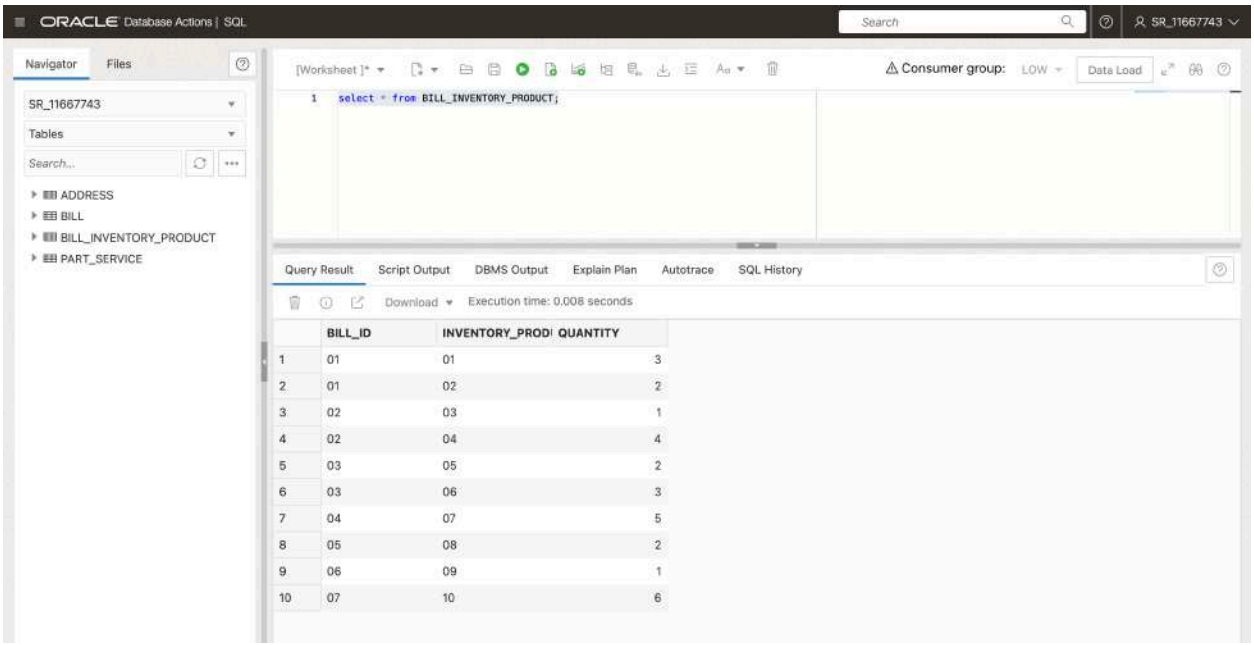
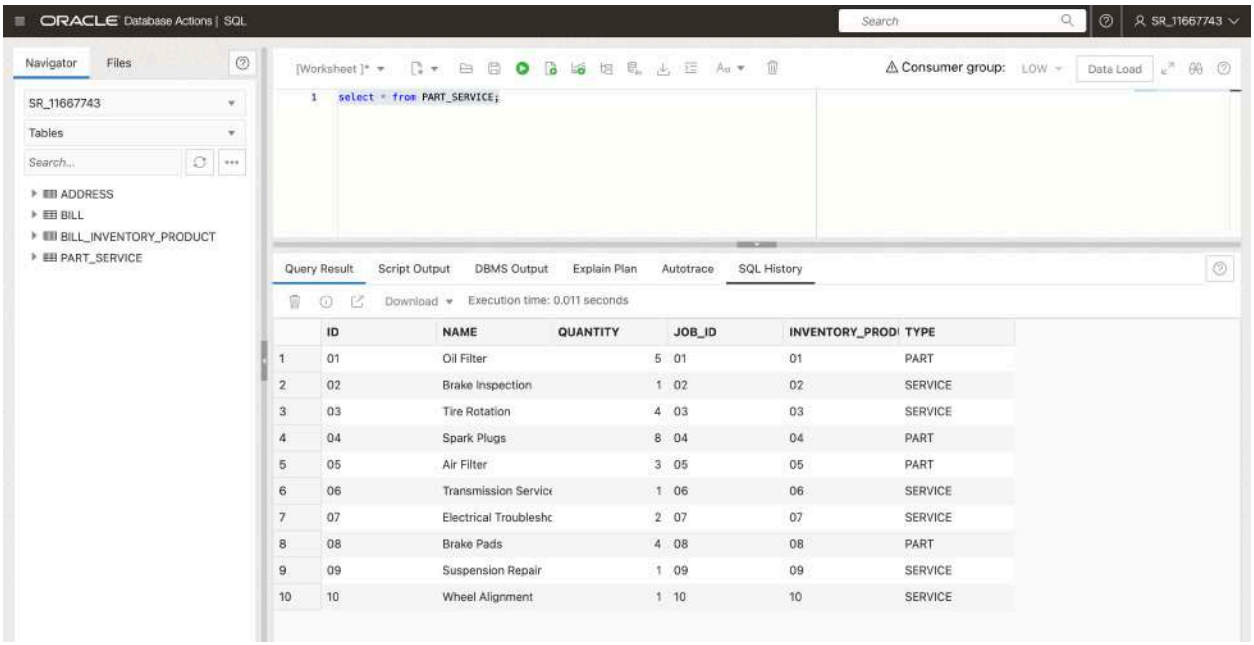
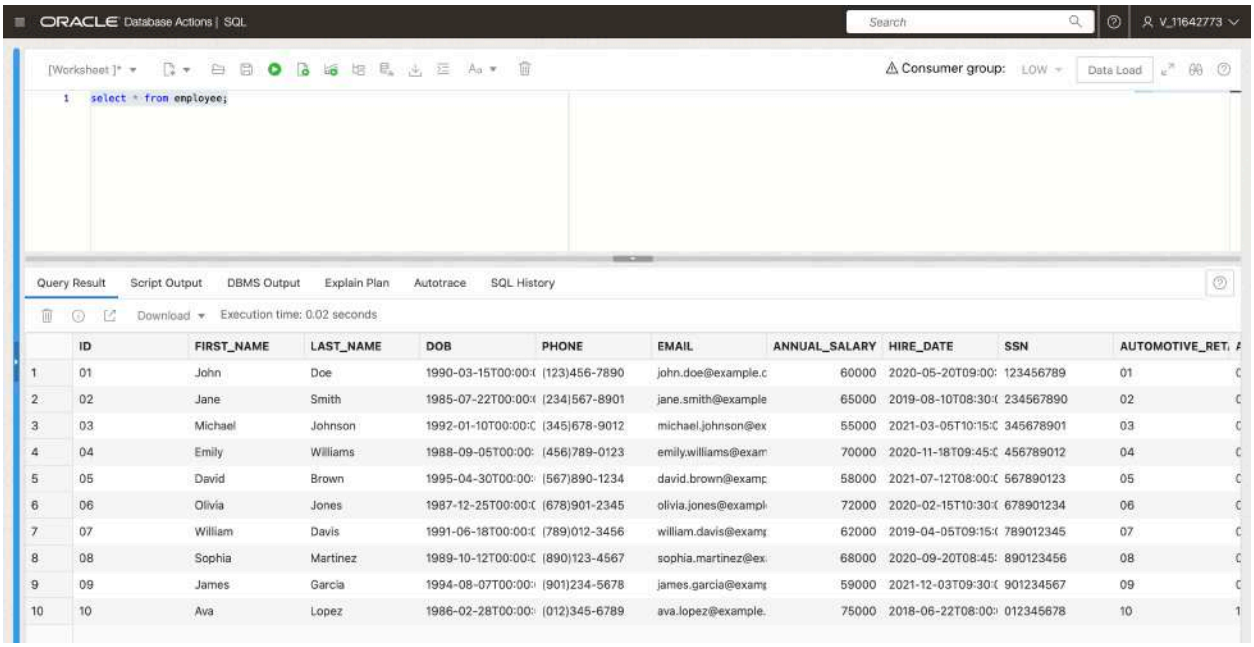


Figure-43: Displayed data in bill_inventory_product table.



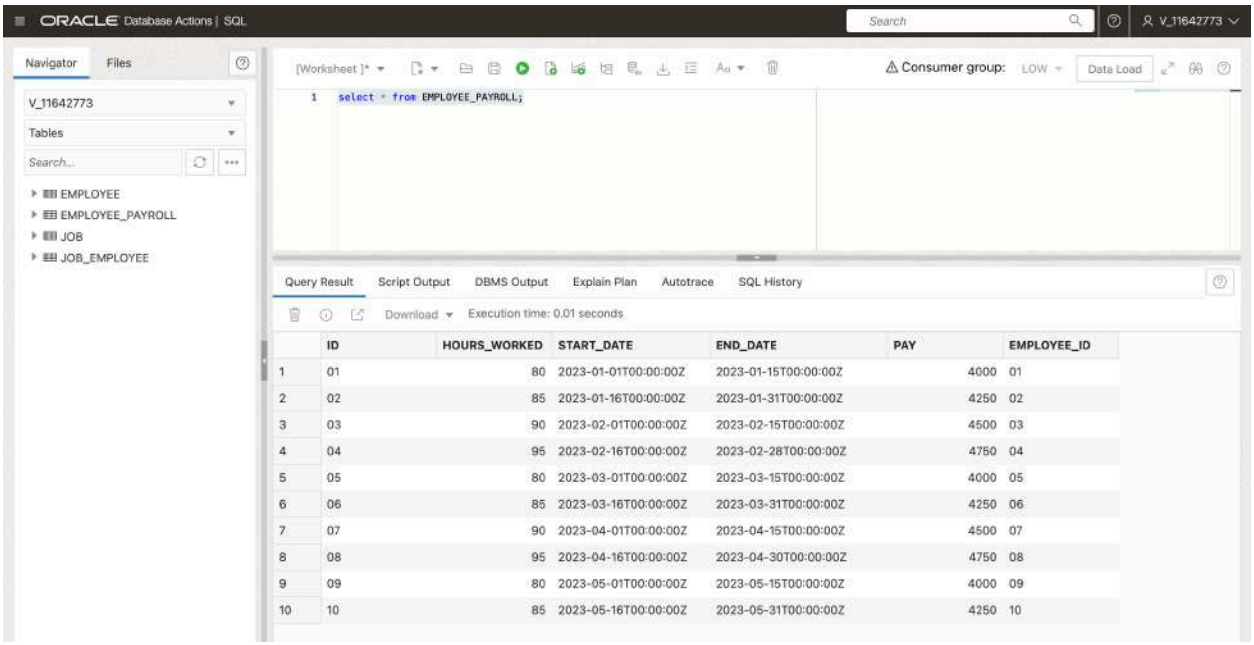
	ID	NAME	QUANTITY	JOB_ID	INVENTORY_PROD	TYPE
1	01	Oil Filter	5	01	01	PART
2	02	Brake Inspection	1	02	02	SERVICE
3	03	Tire Rotation	4	03	03	SERVICE
4	04	Spark Plugs	8	04	04	PART
5	05	Air Filter	3	05	05	PART
6	06	Transmission Servic	1	06	06	SERVICE
7	07	Electrical Troubleshc	2	07	07	SERVICE
8	08	Brake Pads	4	08	08	PART
9	09	Suspension Repair	1	09	09	SERVICE
10	10	Wheel Alignment	1	10	10	SERVICE

Figure-44: Displayed data in part_service table.



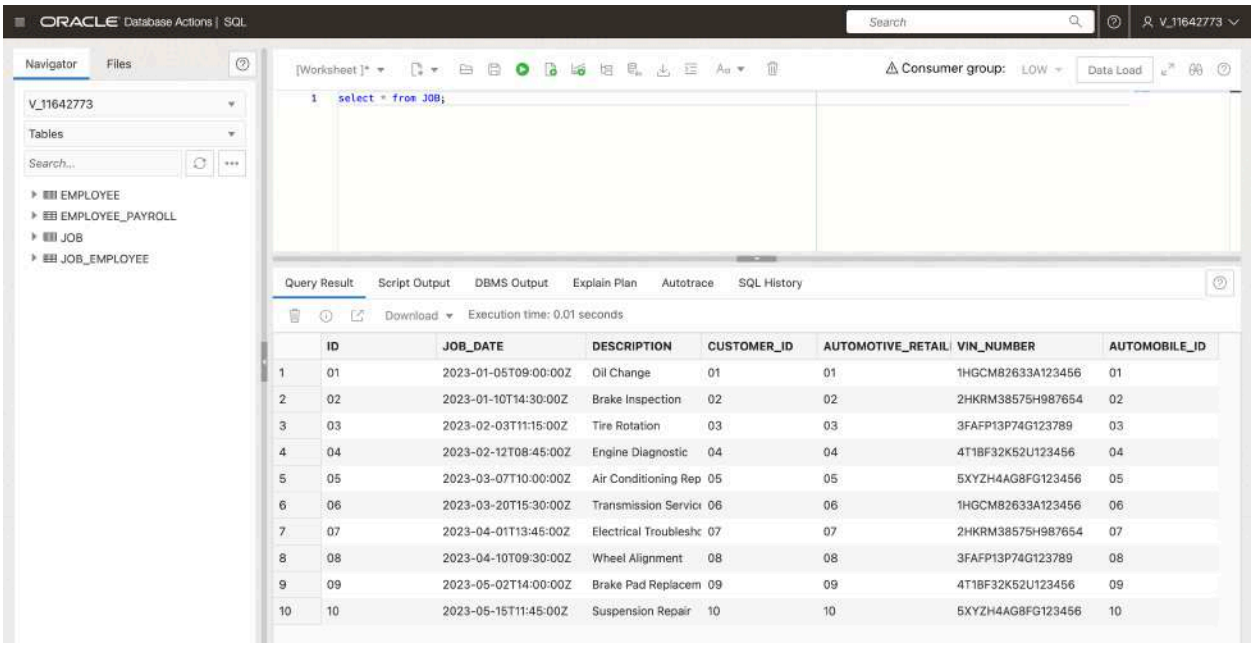
	ID	FIRST_NAME	LAST_NAME	DOB	PHONE	EMAIL	ANNUAL_SALARY	HIRE_DATE	SSN	AUTOMOTIVE_RET
1	01	John	Doe	1990-03-15T00:00:(	(123)456-7890	john.doe@example.c	60000	2020-05-20T09:00:	123456789	01
2	02	Jane	Smith	1985-07-22T00:00:(	(234)567-8901	jane.smith@example	65000	2019-08-10T08:30:(	234567890	02
3	03	Michael	Johnson	1992-01-10T00:00:(	(345)678-9012	michael.johnson@ex	55000	2021-03-05T10:15:(	345678901	03
4	04	Emily	Williams	1988-09-05T00:00:	(456)789-0123	emily.williams@exam	70000	2020-11-18T09:45:(	456789012	04
5	05	David	Brown	1995-04-30T00:00:	(567)890-1234	david.brown@examp	58000	2021-07-12T08:00:(	567890123	05
6	06	Olivia	Jones	1987-12-25T00:00:(	(678)901-2345	olivia.jones@exampl	72000	2020-02-15T10:30:(	678901234	06
7	07	William	Davis	1991-06-18T00:00:(	(789)012-3456	william.davis@exam	62000	2019-04-05T09:15:(	789012345	07
8	08	Sophia	Martinez	1989-10-12T00:00:(	(890)123-4567	sophia.martinez@ex	68000	2020-09-20T08:45:	890123456	08
9	09	James	Garcia	1994-08-07T00:00:	(901)234-5678	james.garcia@exam	59000	2021-12-03T09:30:(	901234567	09
10	10	Ava	Lopez	1986-02-28T00:00:	(012)345-6789	ava.lopez@example.	75000	2018-06-22T08:00:	012345678	10

Figure-45: Displayed data in employee table.



	ID	HOURS_WORKED	START_DATE	END_DATE	PAY	EMPLOYEE_ID
1	01	80	2023-01-01T00:00:00Z	2023-01-15T00:00:00Z	4000	01
2	02	85	2023-01-16T00:00:00Z	2023-01-31T00:00:00Z	4250	02
3	03	90	2023-02-01T00:00:00Z	2023-02-15T00:00:00Z	4500	03
4	04	95	2023-02-16T00:00:00Z	2023-02-28T00:00:00Z	4750	04
5	05	80	2023-03-01T00:00:00Z	2023-03-15T00:00:00Z	4000	05
6	06	85	2023-03-16T00:00:00Z	2023-03-31T00:00:00Z	4250	06
7	07	90	2023-04-01T00:00:00Z	2023-04-15T00:00:00Z	4500	07
8	08	95	2023-04-16T00:00:00Z	2023-04-30T00:00:00Z	4750	08
9	09	80	2023-05-01T00:00:00Z	2023-05-15T00:00:00Z	4000	09
10	10	85	2023-05-16T00:00:00Z	2023-05-31T00:00:00Z	4250	10

Figure-46: Displayed data in employee_payroll table.



	ID	JOB_DATE	DESCRIPTION	CUSTOMER_ID	AUTOMOTIVE_RETAIL	VIN_NUMBER	AUTOMOBILE_ID
1	01	2023-01-05T09:00:00Z	Oil Change	01	01	1HGCM82633A123456	01
2	02	2023-01-10T14:30:00Z	Brake Inspection	02	02	2HKRM38575H987654	02
3	03	2023-02-03T11:15:00Z	Tire Rotation	03	03	3FAFP13P74G123789	03
4	04	2023-02-12T08:45:00Z	Engine Diagnostic	04	04	4T1BF32K52U123456	04
5	05	2023-03-07T10:00:00Z	Air Conditioning Rep	05	05	5XYZH4AG8FG123456	05
6	06	2023-03-20T15:30:00Z	Transmission Servic	06	06	1HGCM82633A123456	06
7	07	2023-04-01T13:45:00Z	Electrical Troubleshc	07	07	2HKRM38575H987654	07
8	08	2023-04-10T09:30:00Z	Wheel Alignment	08	08	3FAFP13P74G123789	08
9	09	2023-05-02T14:00:00Z	Brake Pad Replacem	09	09	4T1BF32K52U123456	09
10	10	2023-05-15T11:45:00Z	Suspension Repair	10	10	5XYZH4AG8FG123456	10

Figure-47: Displayed data in jobs table.

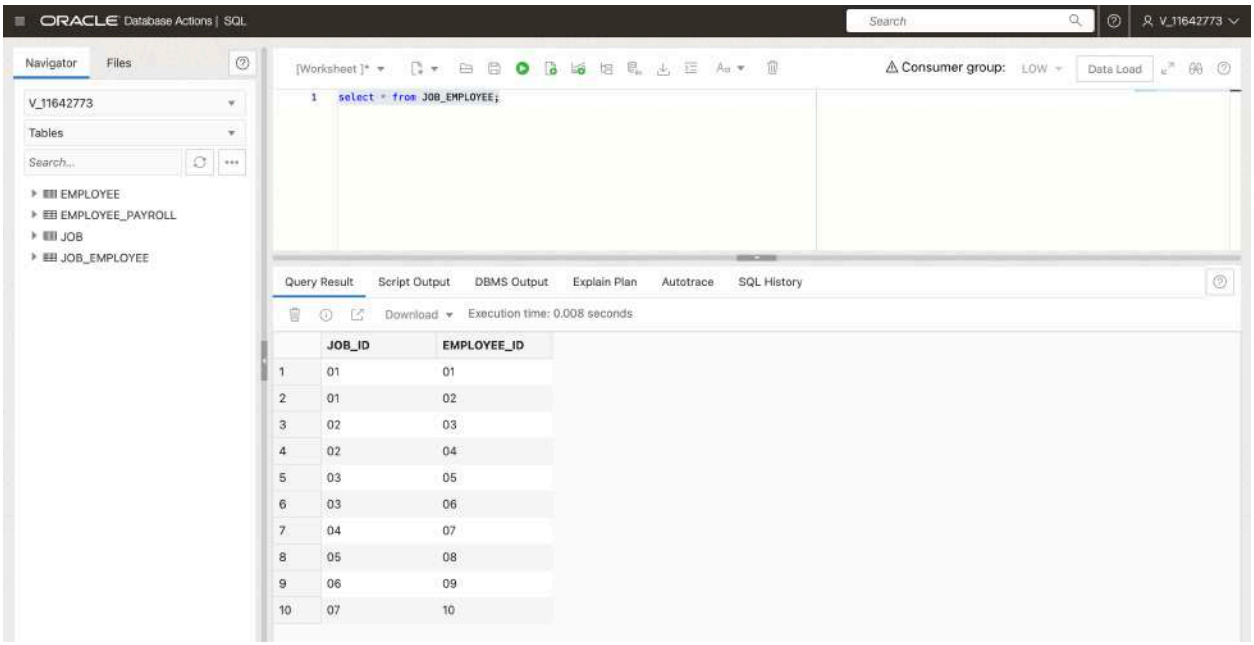


Figure-48: Displayed data in job_employee table.

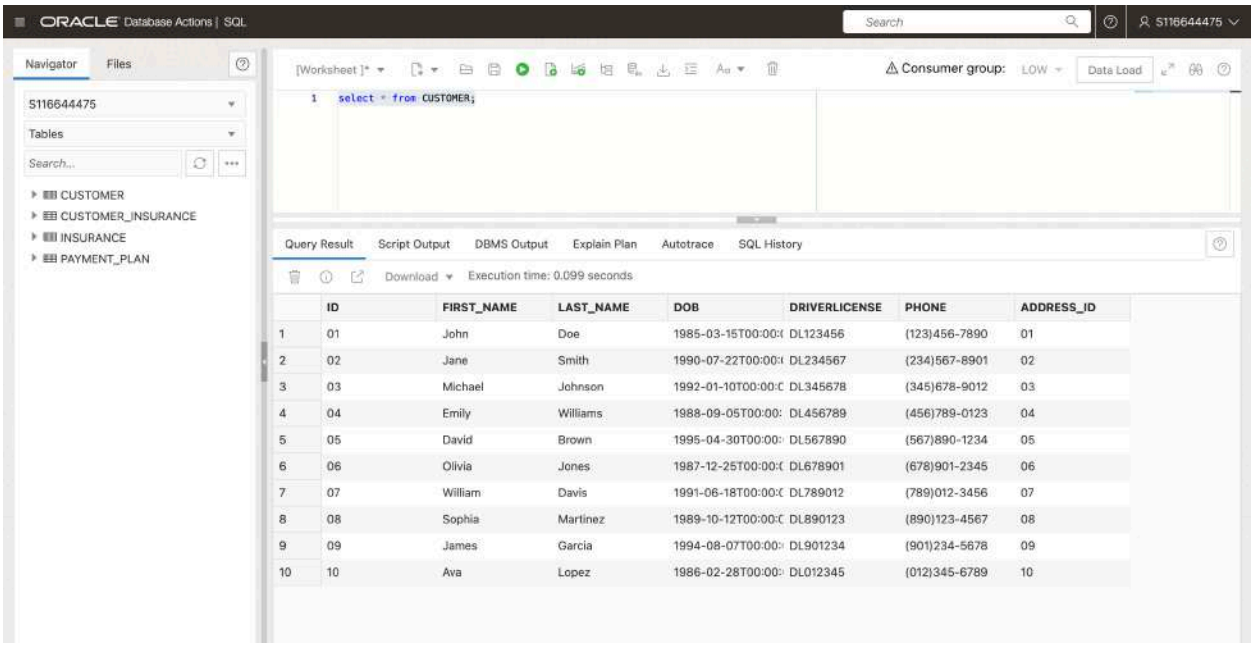


Figure-49: Displayed data in customer table.

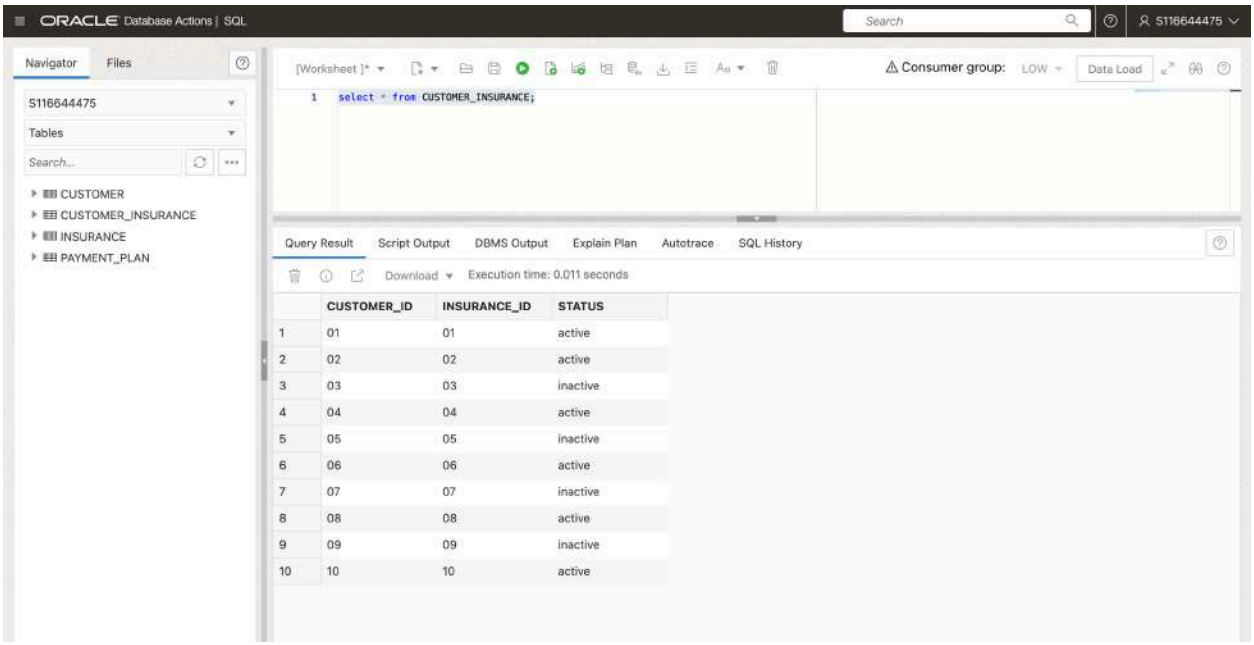


Figure-50: Displayed data in customer_insurance table.

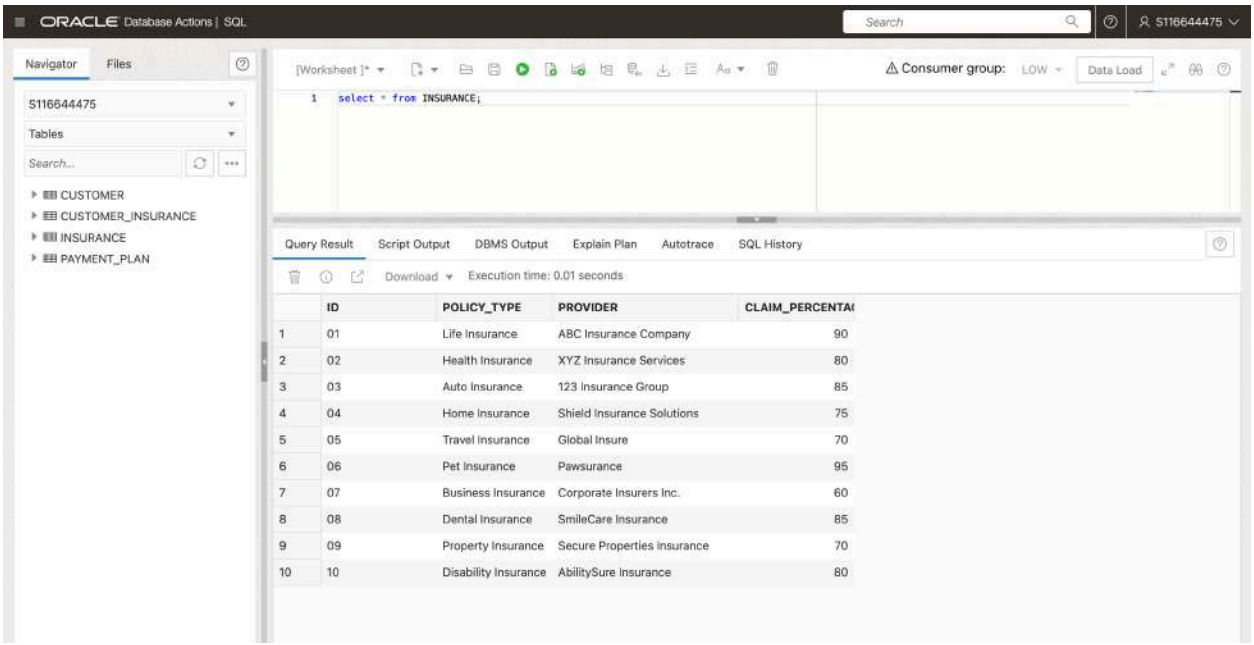


Figure-51: Displayed data in insurance table.

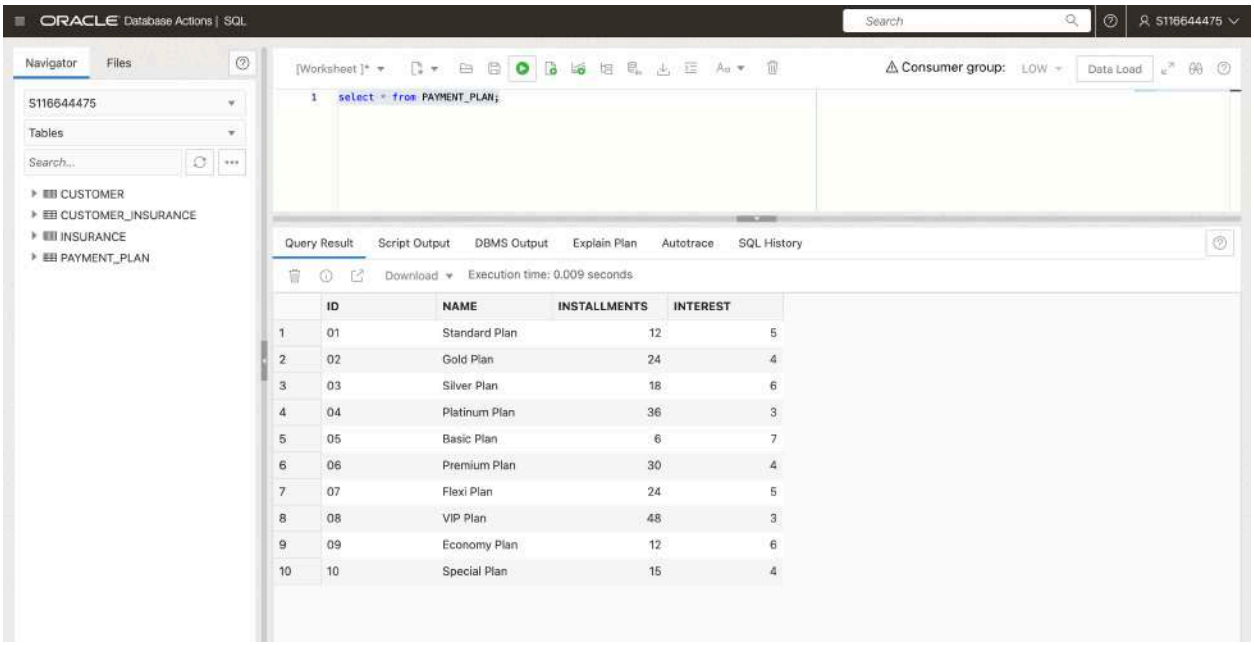


Figure-52: Displayed data in payment_plan table.