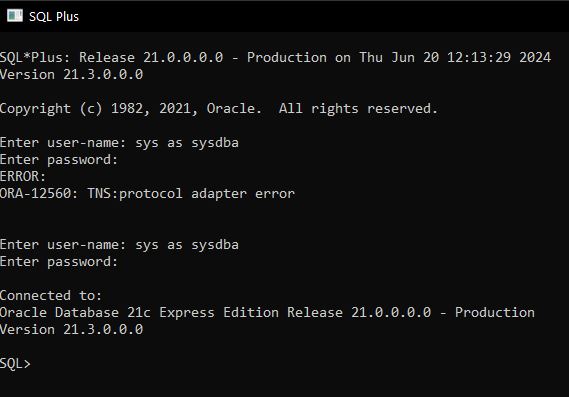
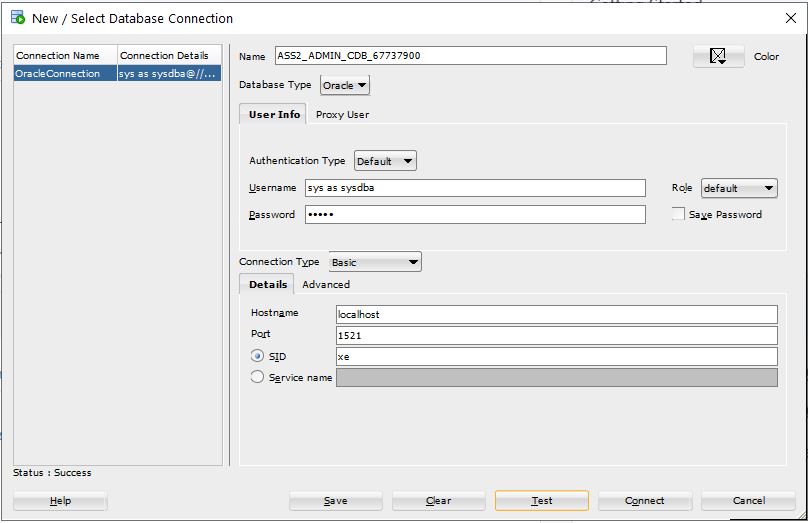
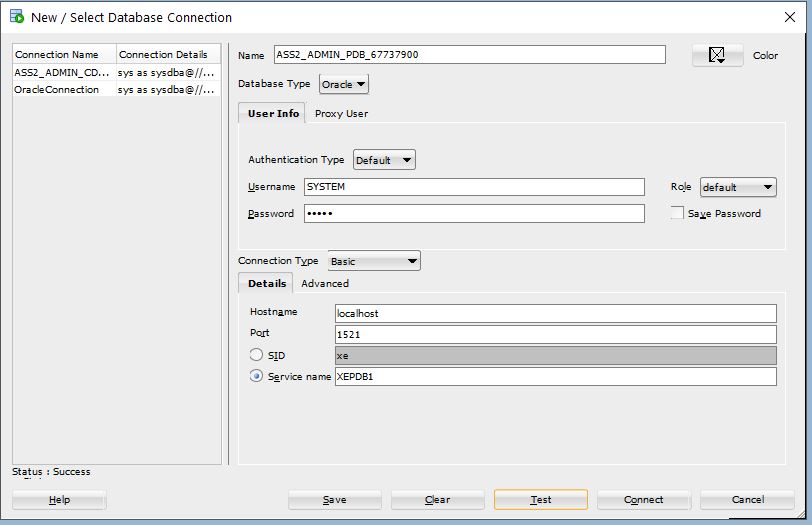
1.1.1.



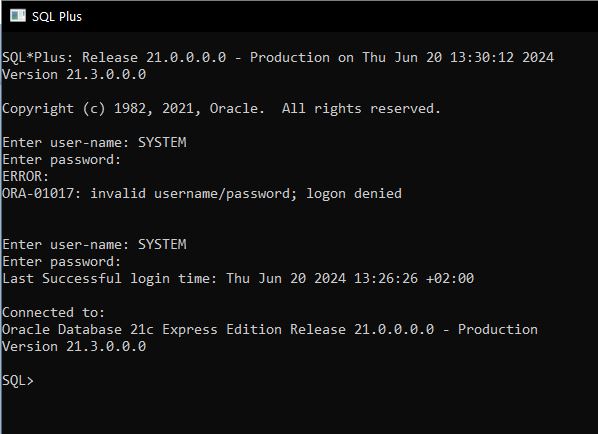
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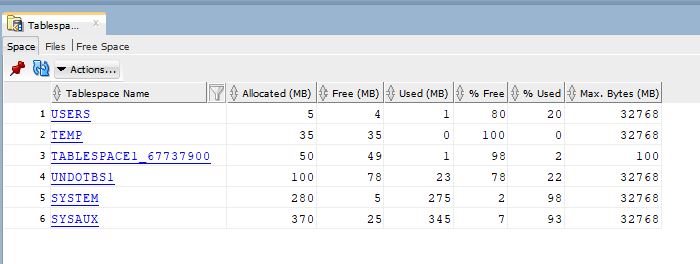
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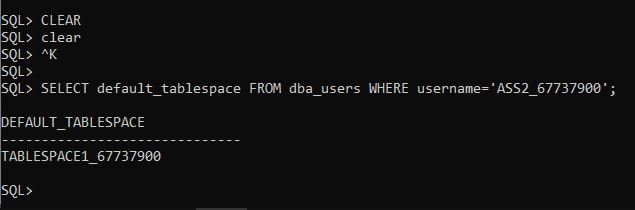
1.3.1.



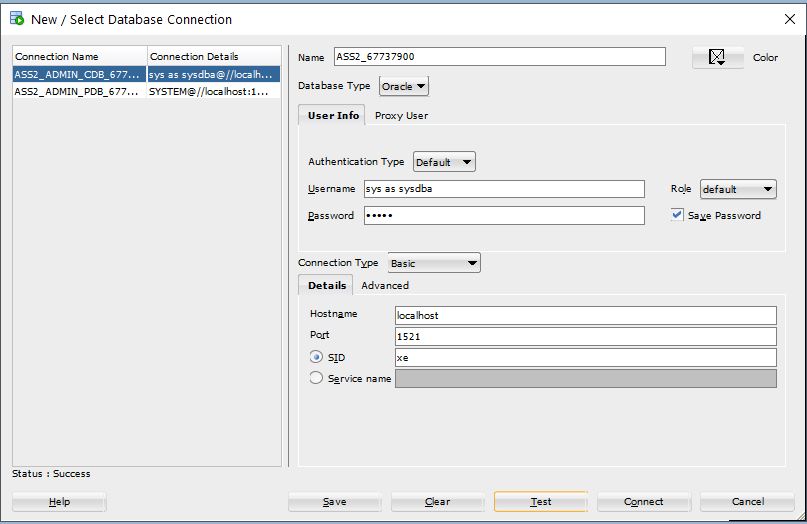
1.4.3.



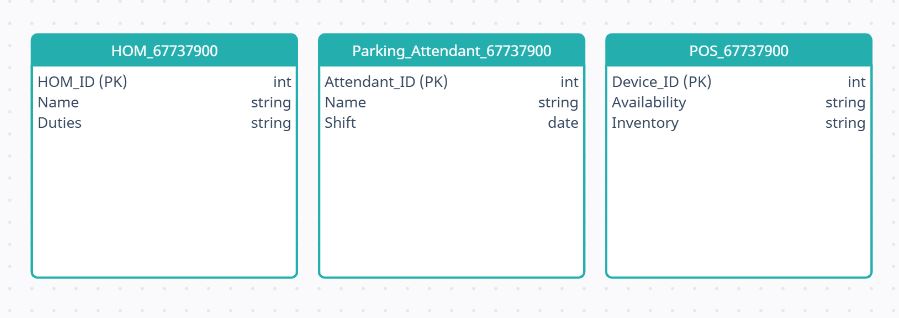
1.5.2



1.6.



2.1.1.



2.1.2.

HOM\_67737900: Represents individuals like Siya Khumalo and Deacon Willemse who manage the shopping centre’s maintenance.

Parking\_Attendant\_67737900: Represents the parking area staff who work in shifts and may or may not check out POS devices.

POS\_67737900: Represents the POS devices that can be checked out by Heads of Maintenance and used by parking attendants.

2.1.3.

HOM\_67737900: HOM\_ID(PK)

Parking\_Attendant\_67737900: Attendant\_ID(PK)

POS\_67737900: Device\_ID(PK), HOM\_ID(FK1), Attendant\_ID(FK2)

2.2.1.

INV\_GENERATOR\_67737900 Table:

* Business Rule 1: Each invoice line is uniquely identified by the combination of Inv\_number and Line\_number.
* Business Rule 2: Each line item on an invoice references a service, identified by Service\_code, which must exist in the CLEANING\_SERVICE\_67737900 table.
* Business Rule 3: Each line item on an invoice is part of an invoice identified by Inv\_number, which must exist in the INVOICE\_67737900 table.

CLEANING\_SERVICE\_67737900 Table:

* Business Rule 4: Each cleaning service is uniquely identified by Service\_code.
* Business Rule 5: Each cleaning service has a description (Service\_descript) and a price (Service\_Price).

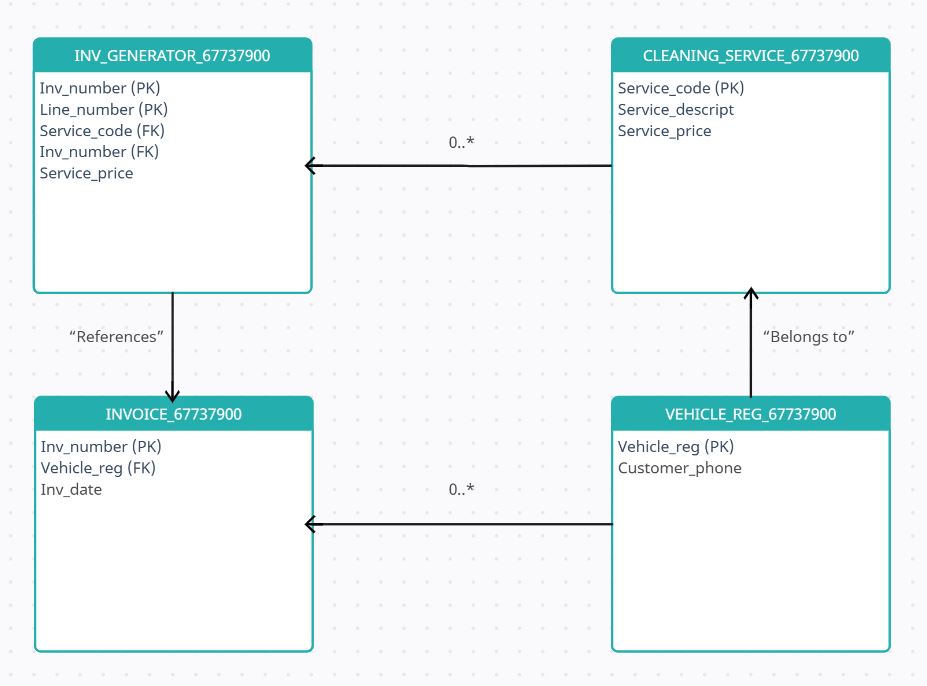
INVOICE\_67737900 Table:

* Business Rule 6: Each invoice is uniquely identified by Inv\_number.
* Business Rule 7: Each invoice references a vehicle, identified by Vehicle\_reg, which must exist in the VEHICLE\_REG\_67737900 table.
* Business Rule 8: Each invoice records the date (Inv\_date) on which the invoice was created.

VEHICLE\_REG\_67737900 Table:

* Business Rule 9: Each vehicle is uniquely identified by Vehicle\_reg.
* Business Rule 10: Each vehicle has an associated customer phone number (Customer\_phone).

2.2.2.



3.1.1.

CREATE TABLE POS\_DEVICE\_ 67737900 (

Device\_ID VARCHAR(50) PRIMARY KEY,

Manufacturer VARCHAR(100)

);

3.2.1.

CREATE TABLE POS\_CHECKOUT\_67737900 (

Shift\_ID VARCHAR(50) PRIMARY KEY,

Device\_ID VARCHAR(50) FOREIGN KEY

);

3.2.2.



3.3.1.

Employee\_contact is the multivalued attribute as it can hold multiple contact numbers for an employee.

3.3.2.

Entity name: EMPLOYEE\_CONTACTS\_ 67737900

Attributes:

* Contact\_ID (PK)
* Employee\_ID (FK referencing PARKING\_LOT\_EMPLOYEES\_ 67737900)
* Contact\_Number

3.3.3.

CREATE TABLE EMPLOYEE\_CONTACTS\_67737900 (

Contact\_ID INT PRIMARY KEY,

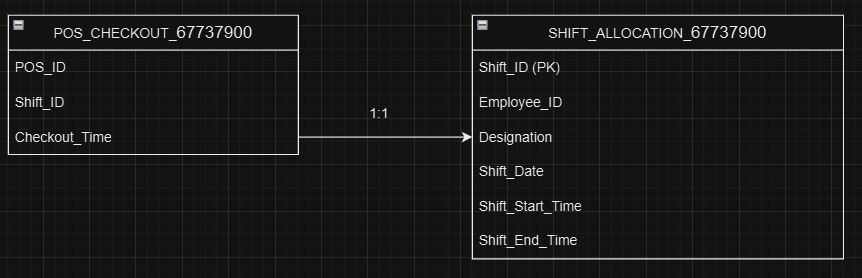
Employee\_ID INT,

Contact\_Number VARCHAR(50),

FOREIGN KEY (Employee\_ID) REFERENCES PARKING\_LOT\_EMPLOYEES\_67737900(Employee\_ID)

);

3.4.1.



3.4.2.

CREATE TABLE SHIFT\_ALLOCATION\_67737900 (

Shift\_ID INT PRIMARY KEY,

Employee\_ID INT,

Designation VARCHAR(50),

Shift\_Date DATE,

Shift\_Start\_Time TIME,

Shift\_End\_Time TIME

);

CREATE TABLE POS\_CHECKOUT\_67737900 (

POS\_ID INT PRIMARY KEY,

Shift\_ID INT,

Checkout\_Time TIME,

FOREIGN KEY (Shift\_ID) REFERENCES SHIFT\_ALLOCATION\_67737900(Shift\_ID)

);

3.5.1.

HOM and POS\_Checkout:

* Each Head of Maintenance (HOM) can manage multiple POS checkouts, but each checkout must be supervised by exactly one HOM.
* A POS checkout cannot occur without being supervised by a HOM.

POS\_Checkout and POS\_Device:

* Each POS device can be checked out multiple times, but each checkout must involve exactly one POS device.
* A POS device must be linked to a checkout record when in use.

POS\_Checkout and Shift\_Allocation:

* Each shift allocation can have one POS checkout, but the checkout is optional for the shift.
* A checkout record must correspond to exactly one shift allocation.

4.1.1.

CREATE TABLE HOM\_67737900 (

HOM\_ID VARCHAR(2) PRIMARY KEY,

HOM\_Name VARCHAR(50),

HOM\_Surname VARCHAR(50),

HOM\_Contact VARCHAR(15)

);

4.1.2.

CREATE TABLE HOM\_67737900 (

HOM\_ID VARCHAR(20) PRIMARY KEY,

HOM\_Name VARCHAR(20),

HOM\_Surname VARCHAR(20),

HOM\_Contact VARCHAR(20),

MALL\_ID VARCHAR(20)

);

4.1.3.

CREATE TABLE HOM\_67737900 (

HOM\_ID VARCHAR(20),

HOM\_Name VARCHAR(20),

HOM\_Surname VARCHAR(20),

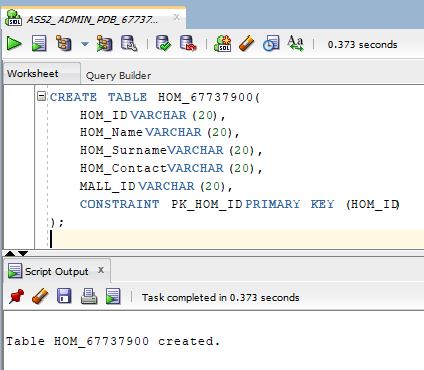
HOM\_Contact VARCHAR(20),

MALL\_ID VARCHAR(20),

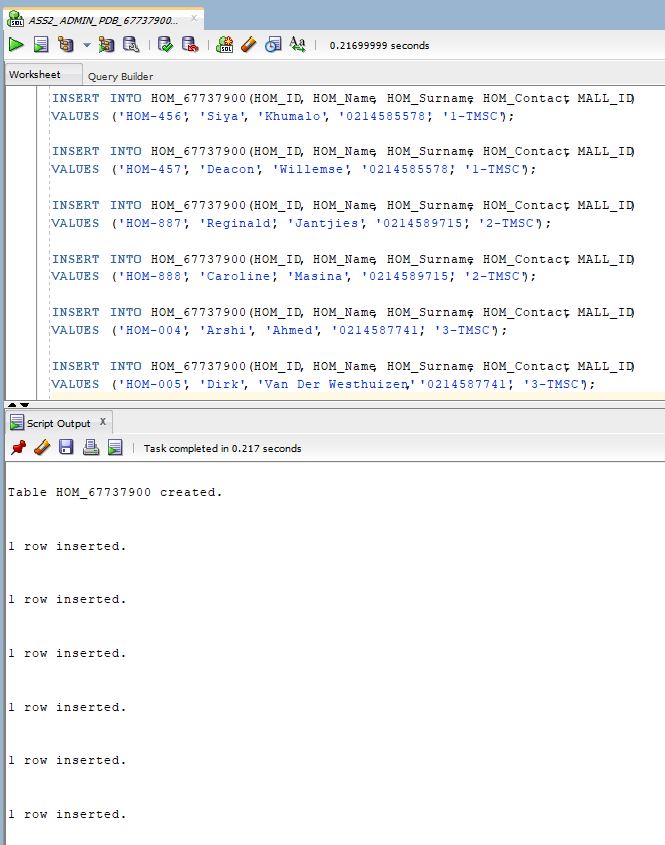
CONSTRAINT PK\_HOM\_ID PRIMARY KEY (HOM\_ID)

);

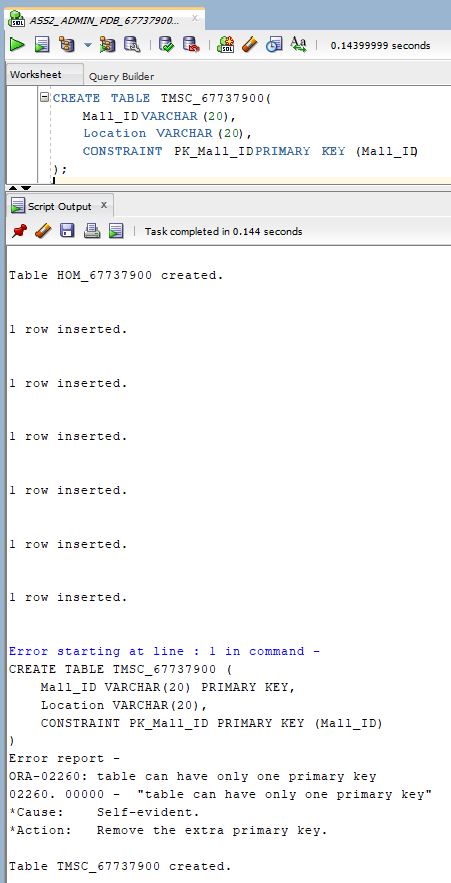
4.1.4.



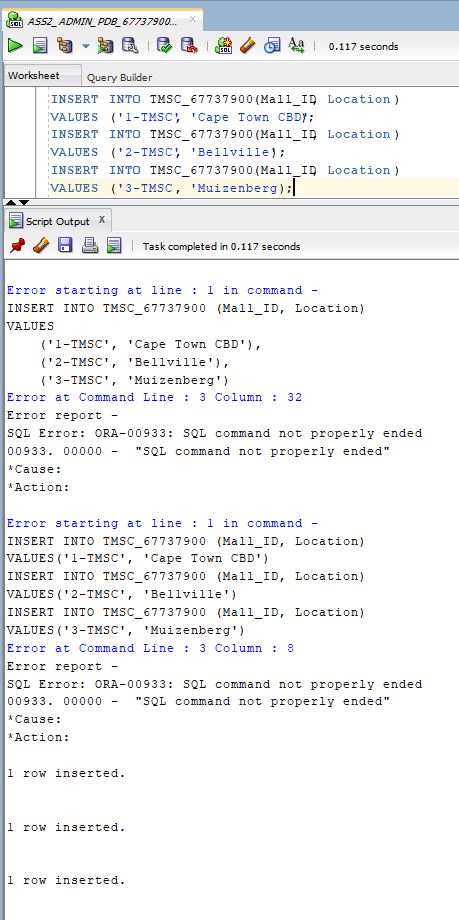
4.2.2.



4.3.4.



4.4.1.



4.5.1