

PRACTICAL NO 1

Global Schema in DDB

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Seat No 027

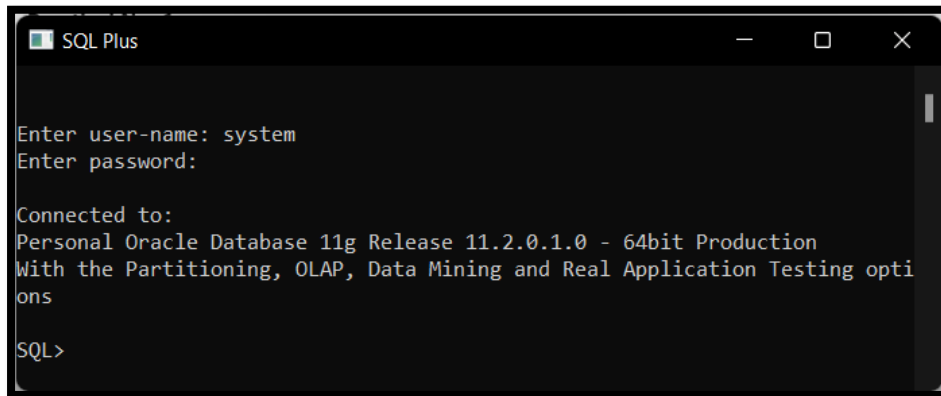
ADVANCED DATABASE

Practical No: 1

Aim: For a given a global conceptual schema, divide the schema into horizontal and vertical fragmentation and place them on different nodes. Execute queries on these fragments that will demonstrate distributed databases environment.

Software Requirement:

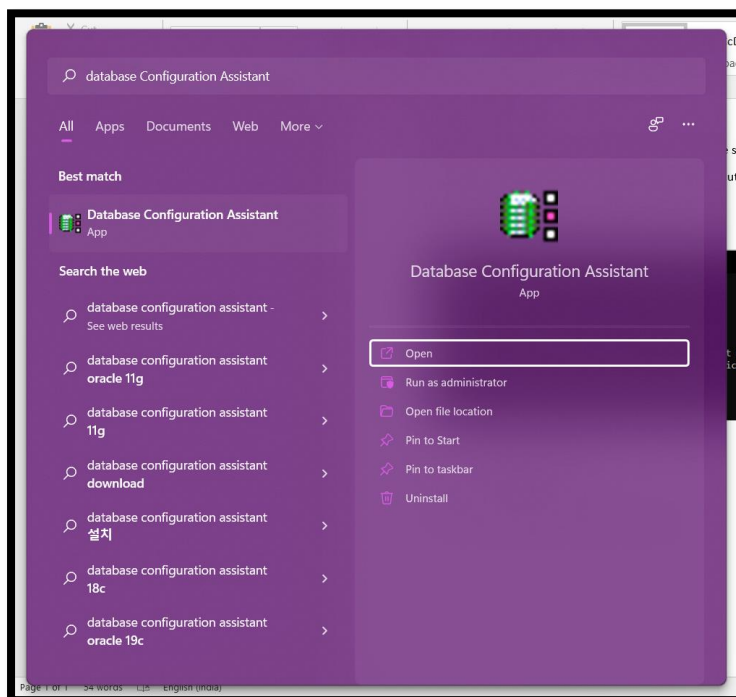
Oracle Database 11g



How to Create Two Database

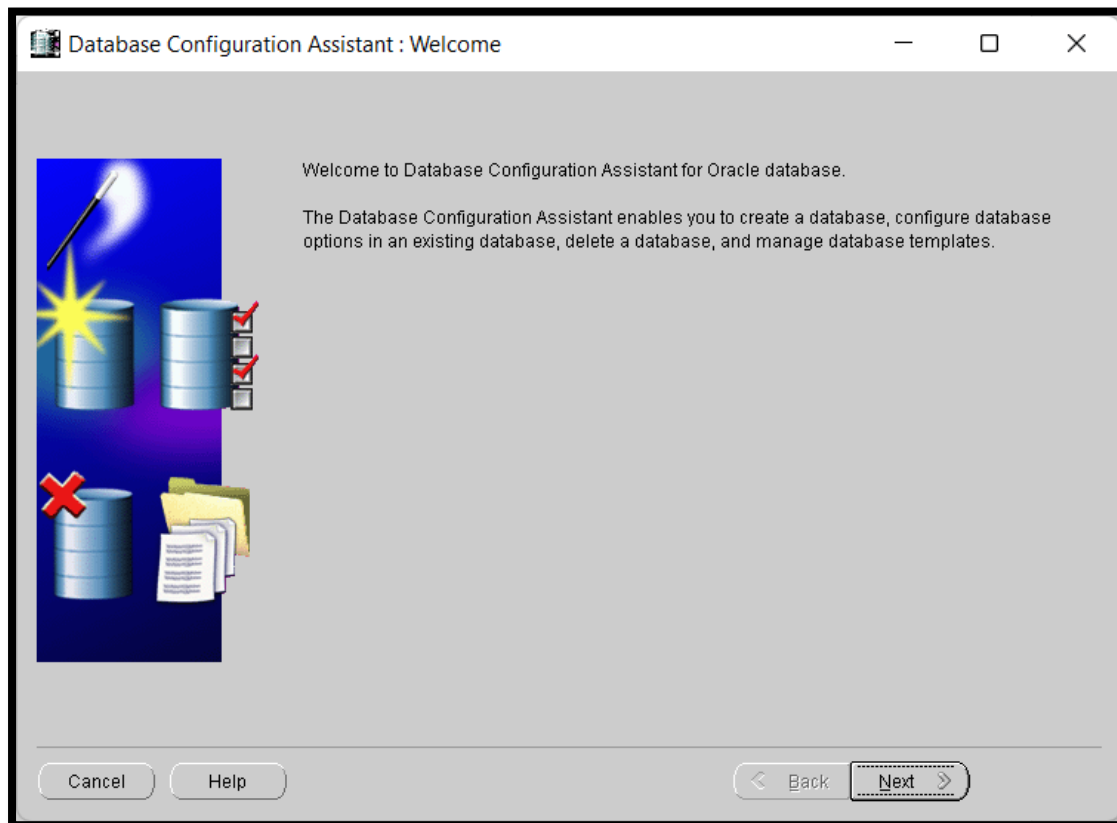
Steps to Create Database db1 and db2

Step 1 :- Open Start Menu on Window Explorer Go to Database Configuration Assistant

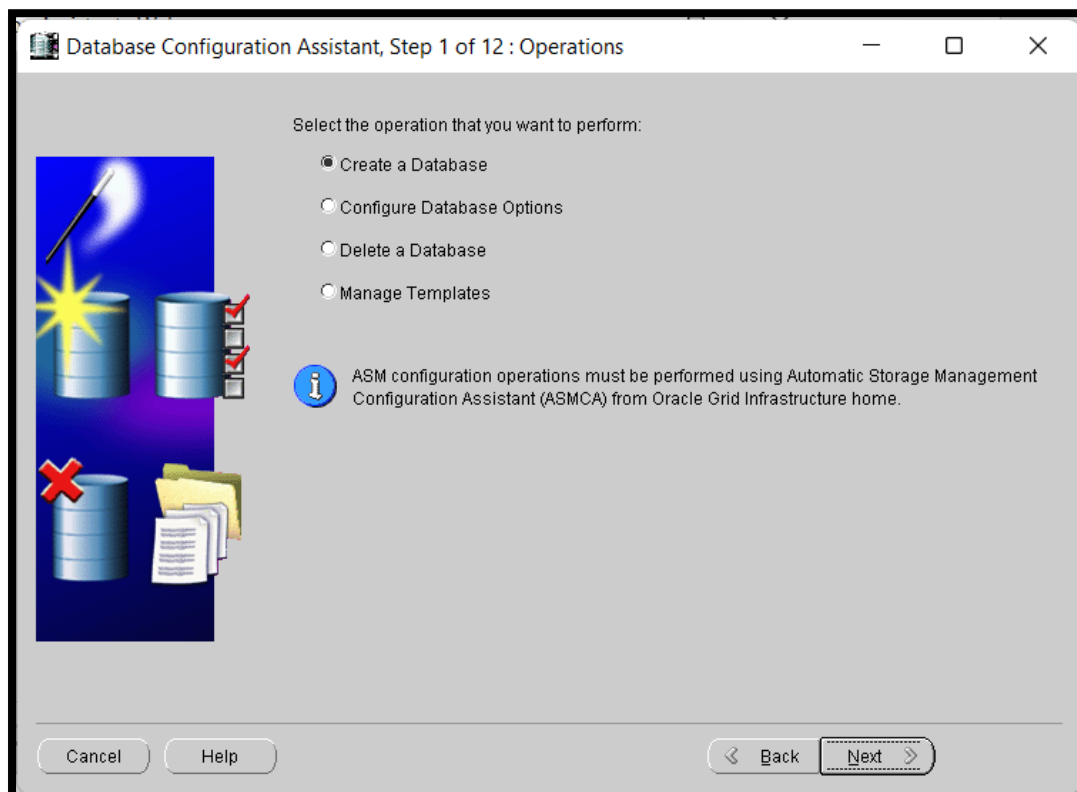


Step 2: Click on Next

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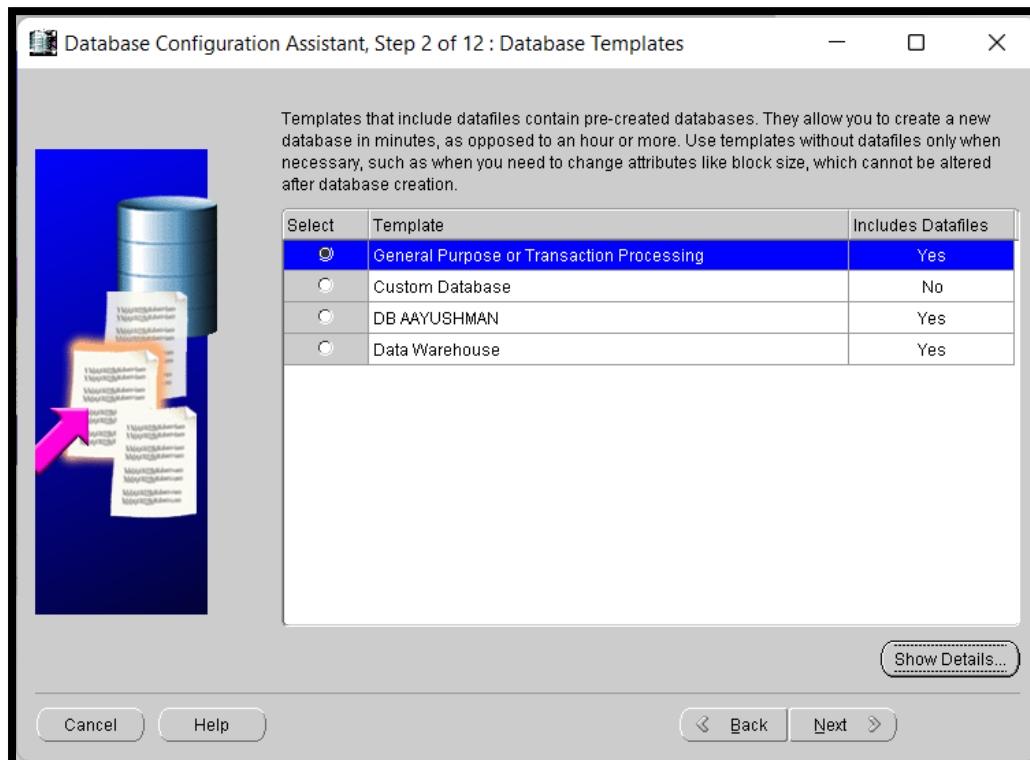


Step 3: Select Option Create a Database

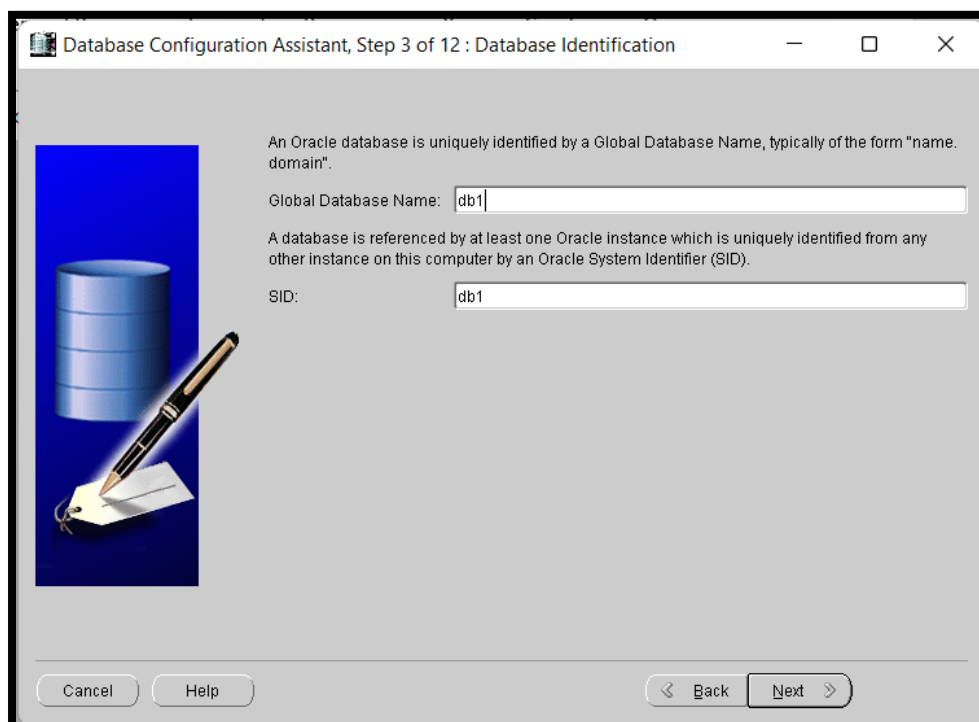


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Step 4: Select Option General Purpose or Transaction Processing or You can Create your Own Custom Database.



Step 5: Give Database Name as db1 (of your own choice)



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Database Configuration Assistant, Step 3 of 12 : Database Identification

An Oracle database is uniquely identified by a Global Database Name, typically of the form "name.domain".

Global Database Name:

A database is referenced by at least one Oracle instance which is uniquely identified from any other instance on this computer by an Oracle System Identifier (SID).

SID:

Cancel Help < Back Next >

Step 6 : No changes Needed, Click on Next

Database Configuration Assistant, Step 4 of 12 : Management Options

Enterprise Manager Automatic Maintenance Tasks

☒ Configure Enterprise Manager

☐ Register with Grid Control for centralized management

Management Service:

☒ Configure Database Control for local management

☐ Enable Alert Notifications

Outgoing Mail (SMTP) Server:

Recipient Email Address:

☐ Enable Daily Disk Backup to Recovery Area

Backup Start Time: AM ☐ PM

OS Username:

OS Password:

Cancel Help < Back Next >

Step 7: Input Password of your choice for Each Fields or Else use your Administrator Credentials for all Profile

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Database Configuration Assistant, Step 5 of 12 : Database Credentials

For security reasons, you must specify passwords for the following user accounts in the new database.

☒ Use Different Administrative Passwords

User Name	Password	Confirm Password
SYS	*****	*****
SYSTEM	*****	*****
DBSNMP	*****	*****
SYSMAN	*****	*****

☐ Use the Same Administrative Password for All Accounts


Password:

Confirm Password:

Cancel Help < Back Next >

Checks for Password Confirmation, Just Click Yes

Database Configuration Assistant

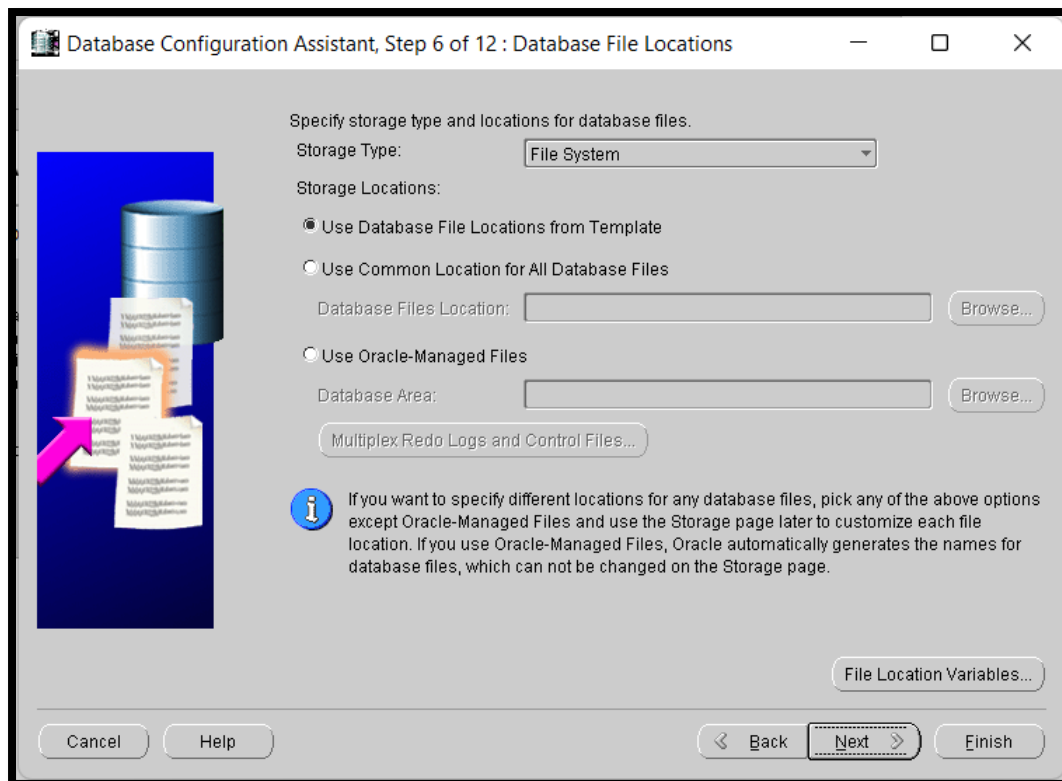
 Password entered does not satisfy Oracle recommended password complexity policy. A password should have minimum of 8 characters in length. In addition, the password must contain at least one upper case character, one lower case character and one digit.

Do you want to continue?

Yes No

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Step 8: No changes Needed, Click on Next



Database Configuration Assistant, Step 6 of 12 : Database File Locations

Specify storage type and locations for database files.

Storage Type:

Storage Locations:


☒ Use Database File Locations from Template

☐ Use Common Location for All Database Files

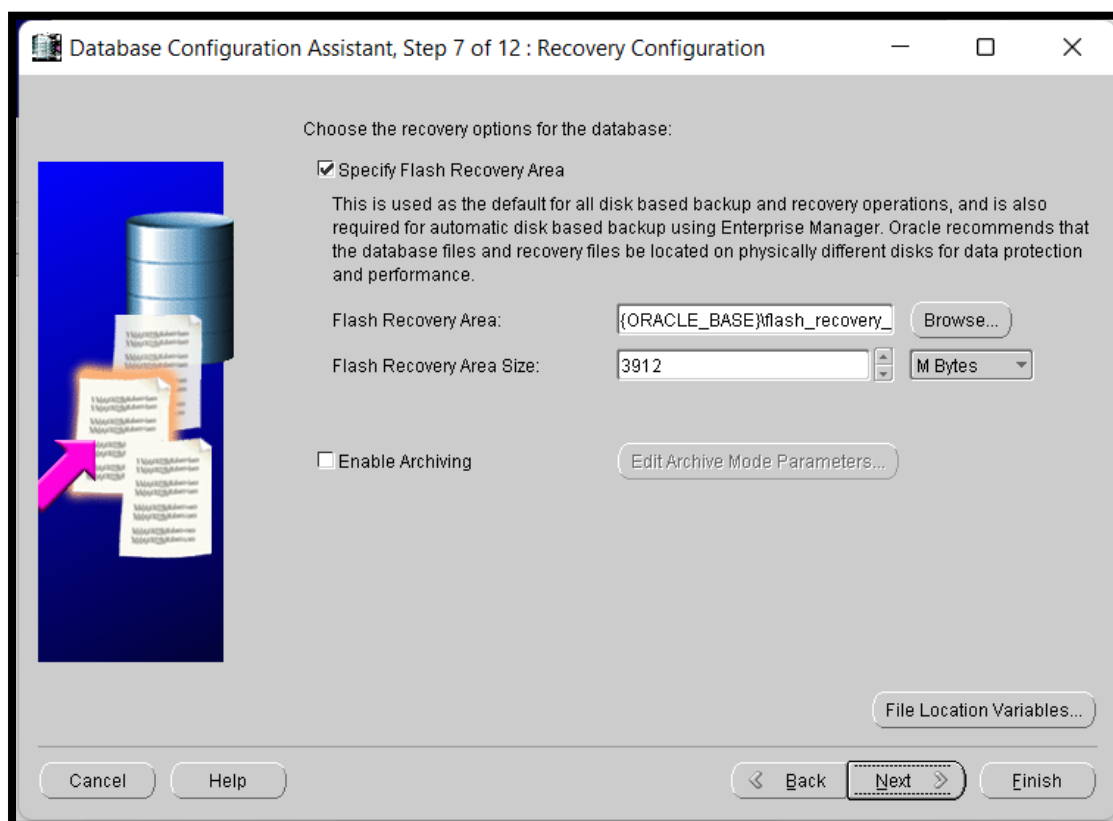
Database Files Location:

☐ Use Oracle-Managed Files

Database Area:

 If you want to specify different locations for any database files, pick any of the above options except Oracle-Managed Files and use the Storage page later to customize each file location. If you use Oracle-Managed Files, Oracle automatically generates the names for database files, which can not be changed on the Storage page.

Step 9: No changes Needed, Click on Next



Database Configuration Assistant, Step 7 of 12 : Recovery Configuration

Choose the recovery options for the database:

☒ Specify Flash Recovery Area

This is used as the default for all disk based backup and recovery operations, and is also required for automatic disk based backup using Enterprise Manager. Oracle recommends that the database files and recovery files be located on physically different disks for data protection and performance.

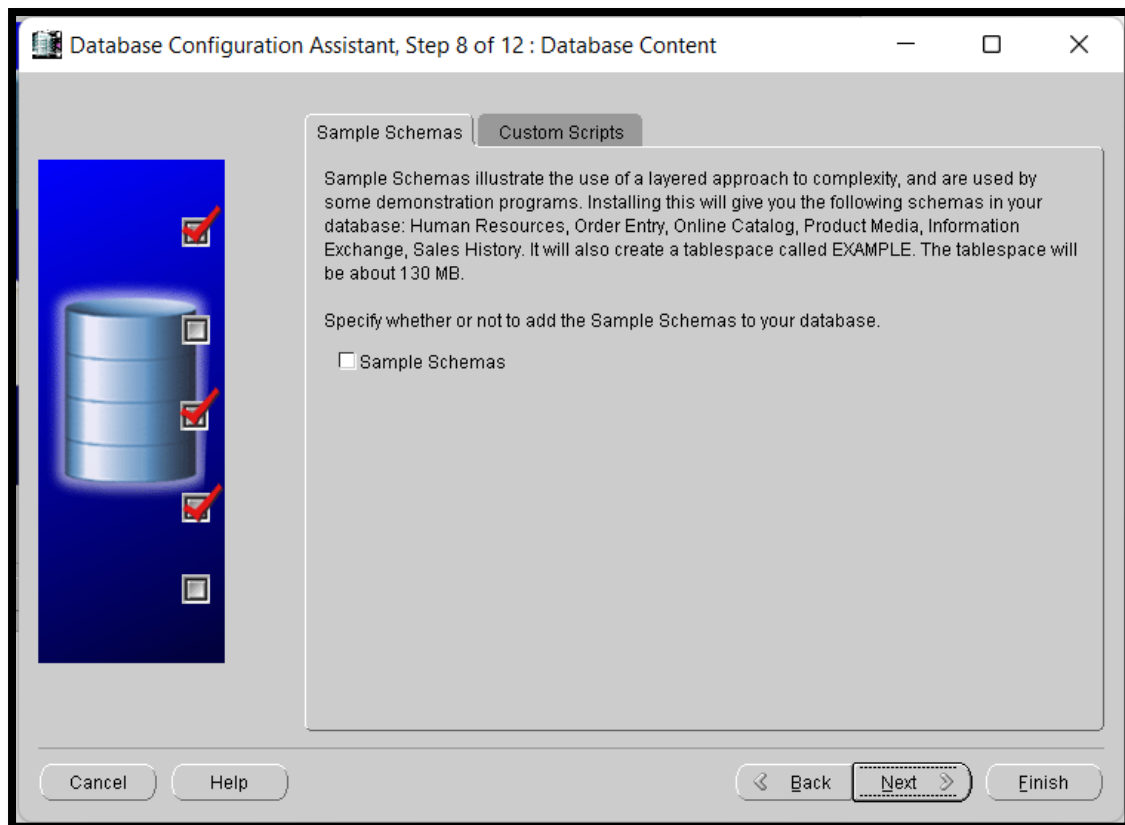
Flash Recovery Area:

Flash Recovery Area Size:

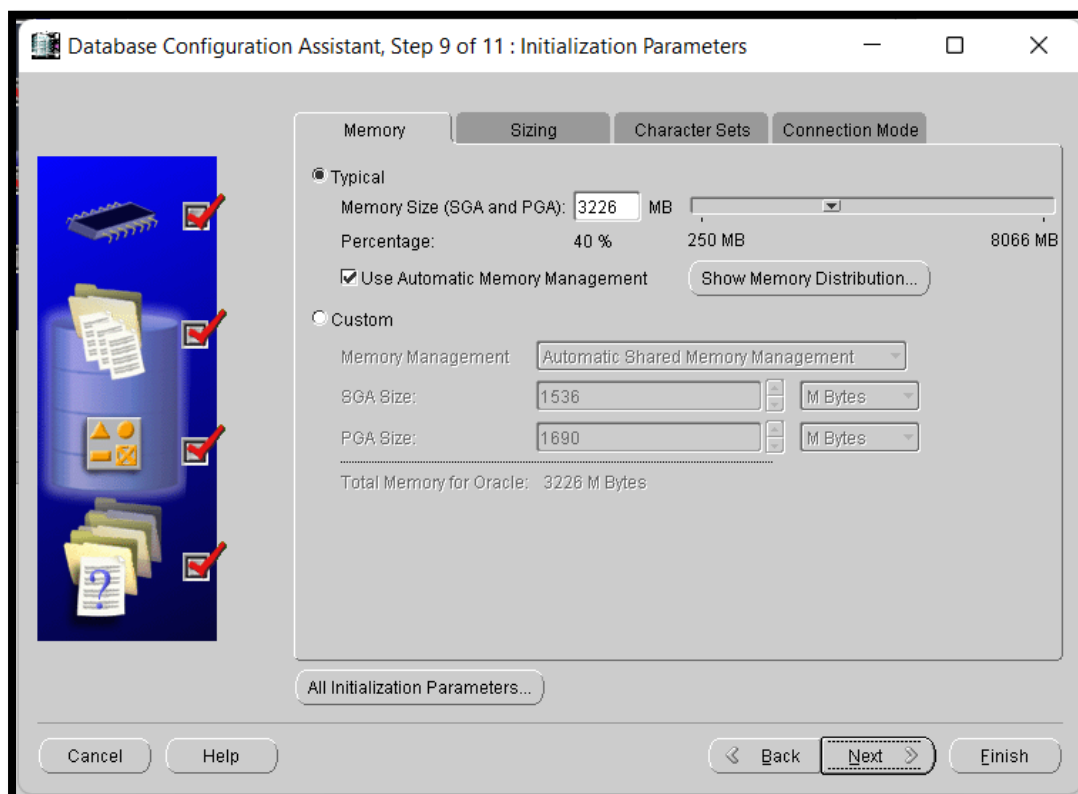
☐ Enable Archiving

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Step 10: No changes Needed, Click on Next

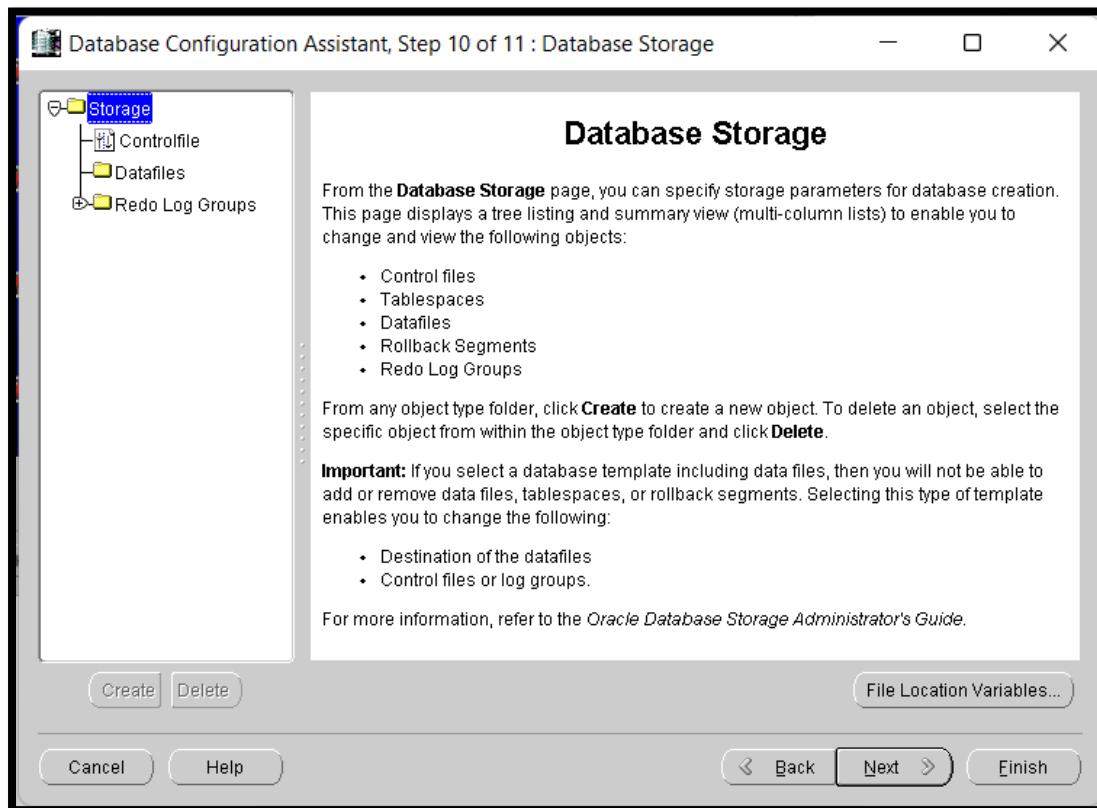


Step 11: No changes Needed, Click on Next



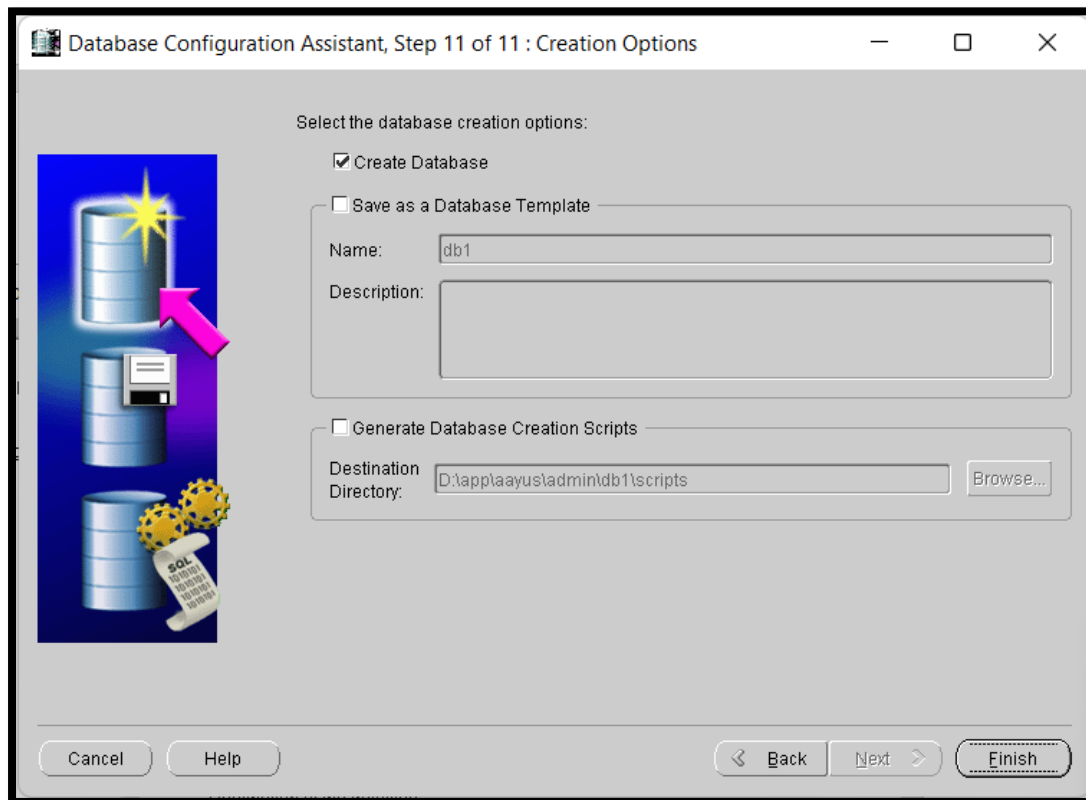
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Step 12: No changes Needed, Click on Next

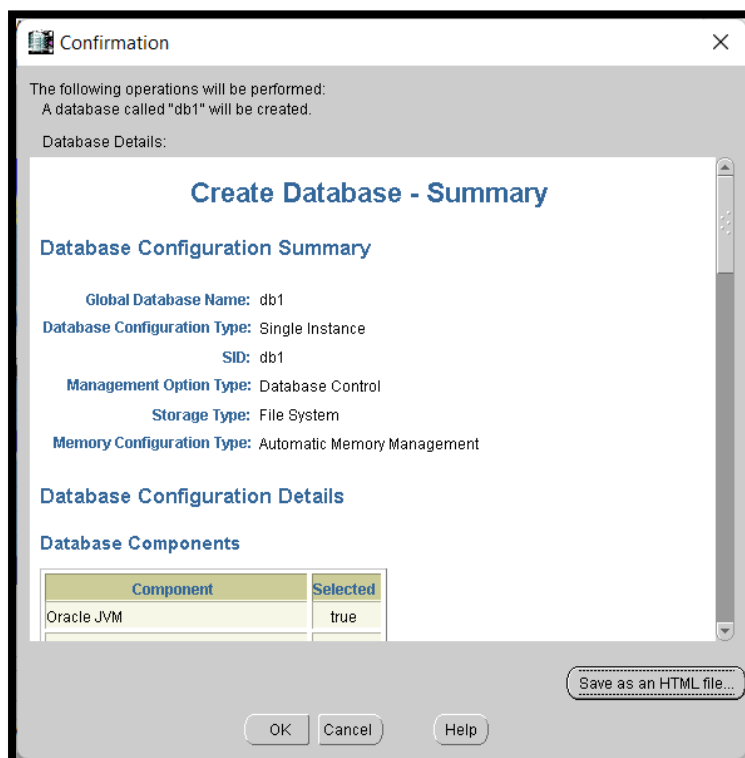


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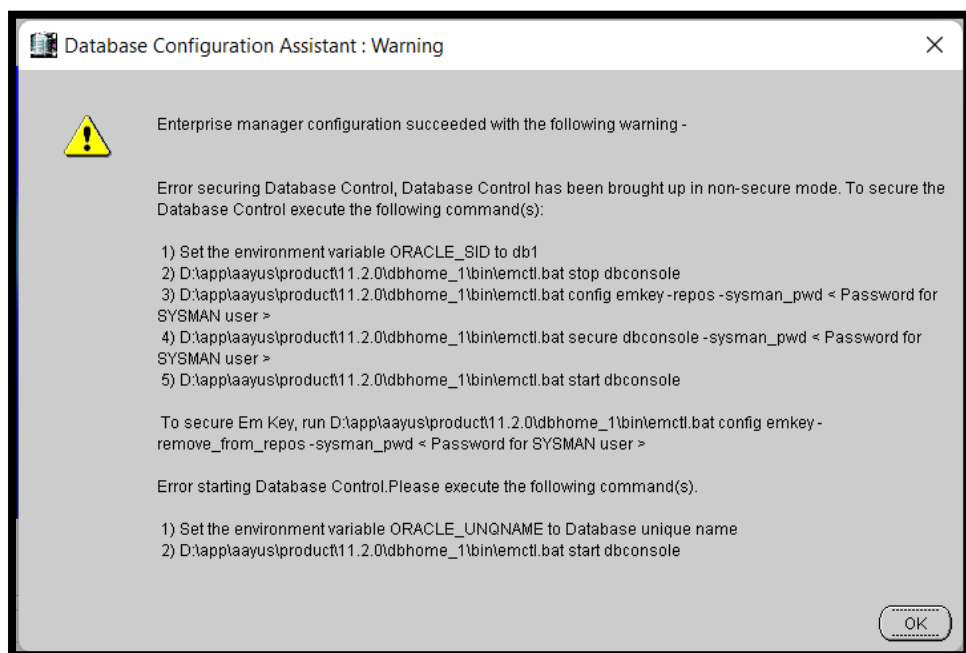
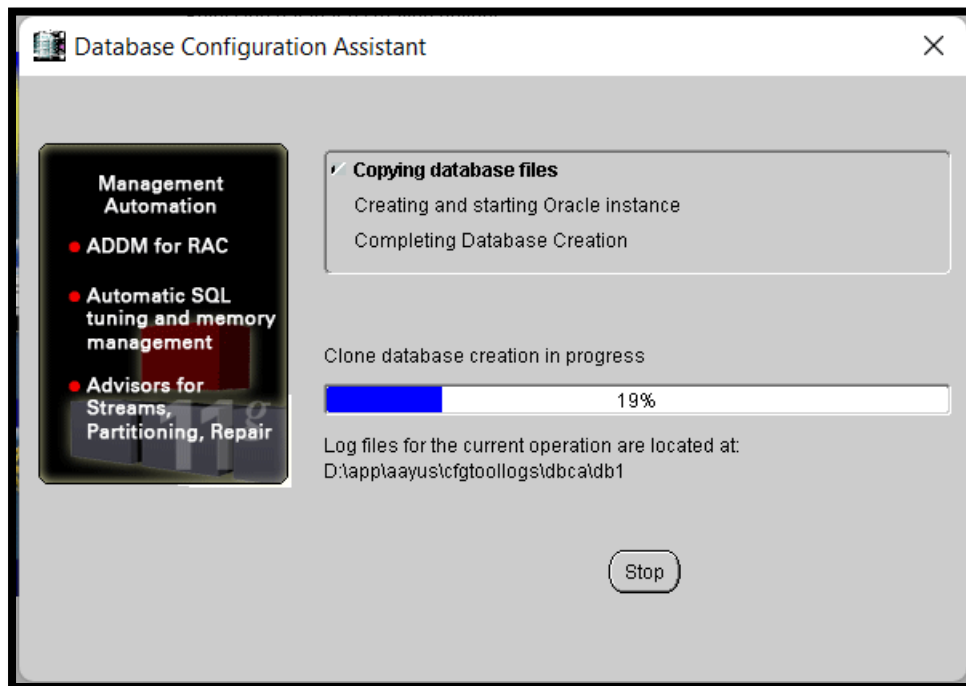
Step 13: No changes Needed, Click on Finish



Confirmation of Creating Database, You can Save it as well for your database details. Incase you forget credentials for your database, you can take help of this file to get access of your database.



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Click on Exit and Done.....

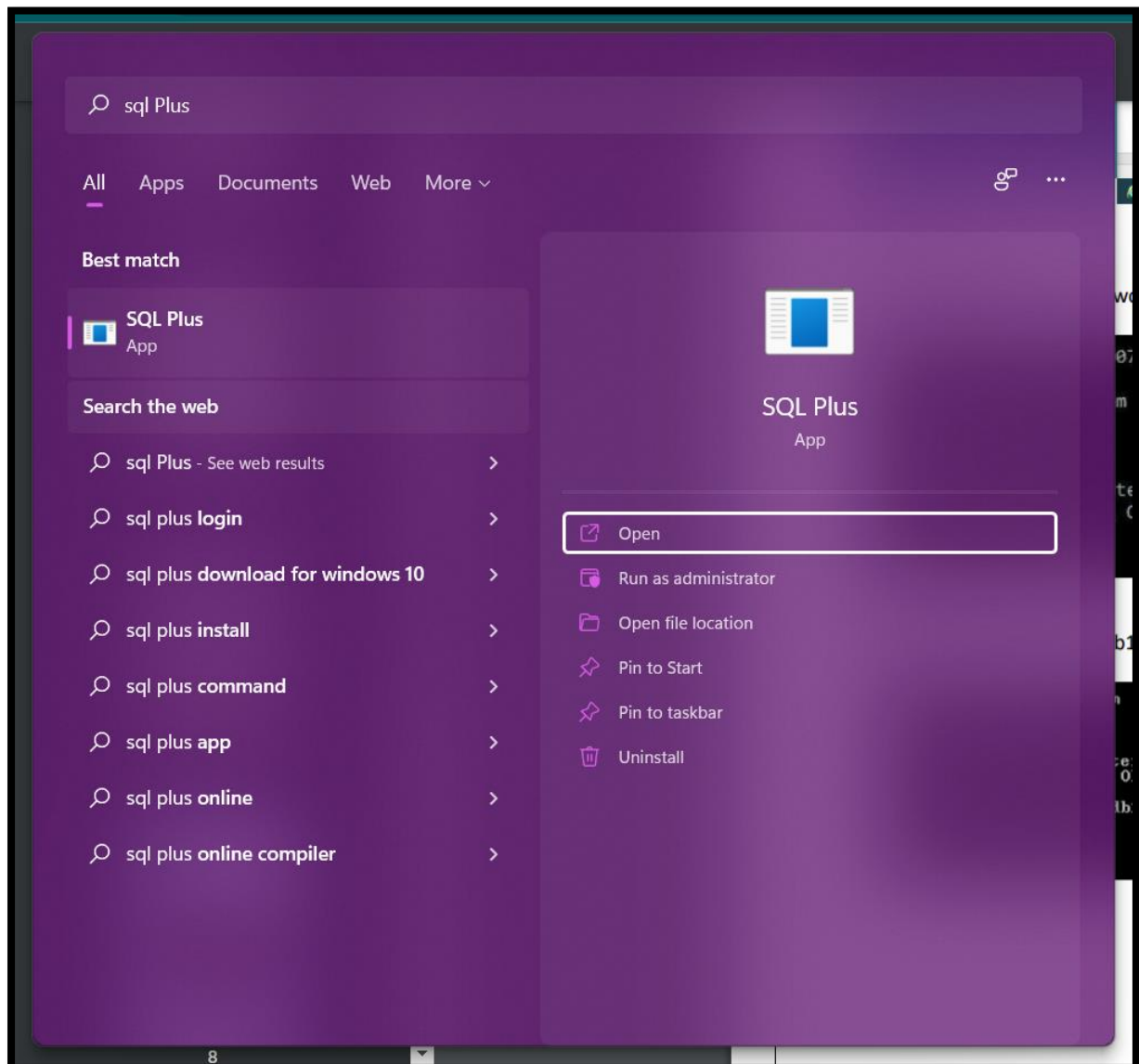
Follow the Same Steps to create db2,

Once done with Creating db1 and db2

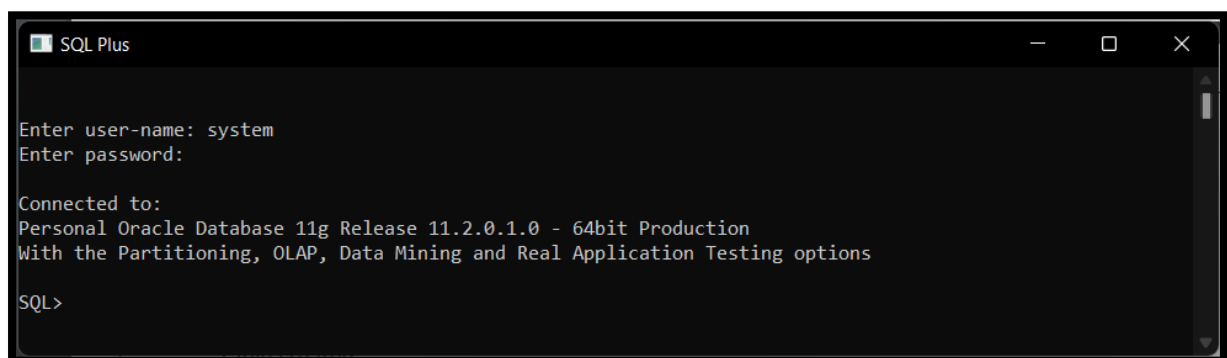
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Practical Implementation Steps :

- ✓ **Step 1:- Open SQLPlus**

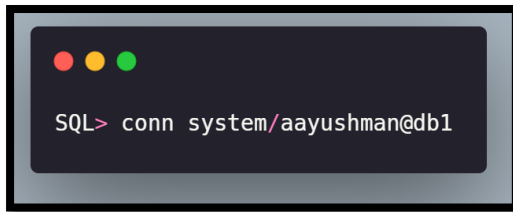


- ✓ **Step 2: Connect to Your Database**



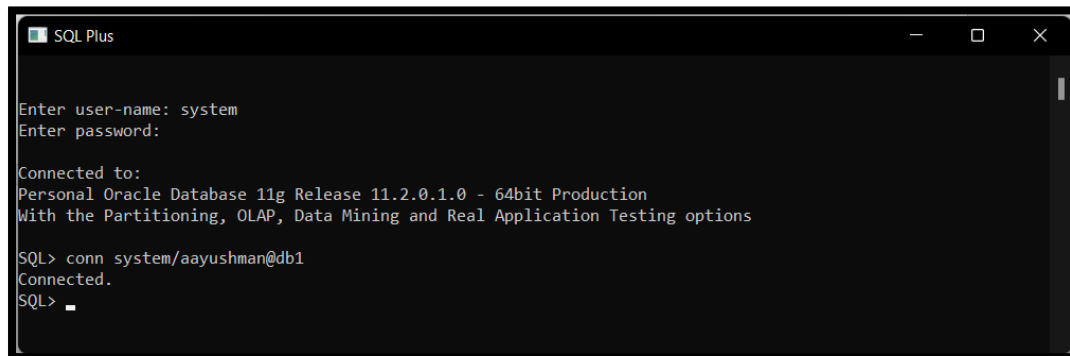
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- ✓ **Step 3:** Connect your db1 While executing the Command



```
SQL> conn system/aayushman@db1
```

[Where "aayushman" is password of your database, and "db1" is database name]



```
SQL Plus

Enter user-name: system
Enter password:

Connected to:
Personal Oracle Database 11g Release 11.2.0.1.0 - 64bit Production
With the Partitioning, OLAP, Data Mining and Real Application Testing options

SQL> conn system/aayushman@db1
Connected.
SQL> _
```

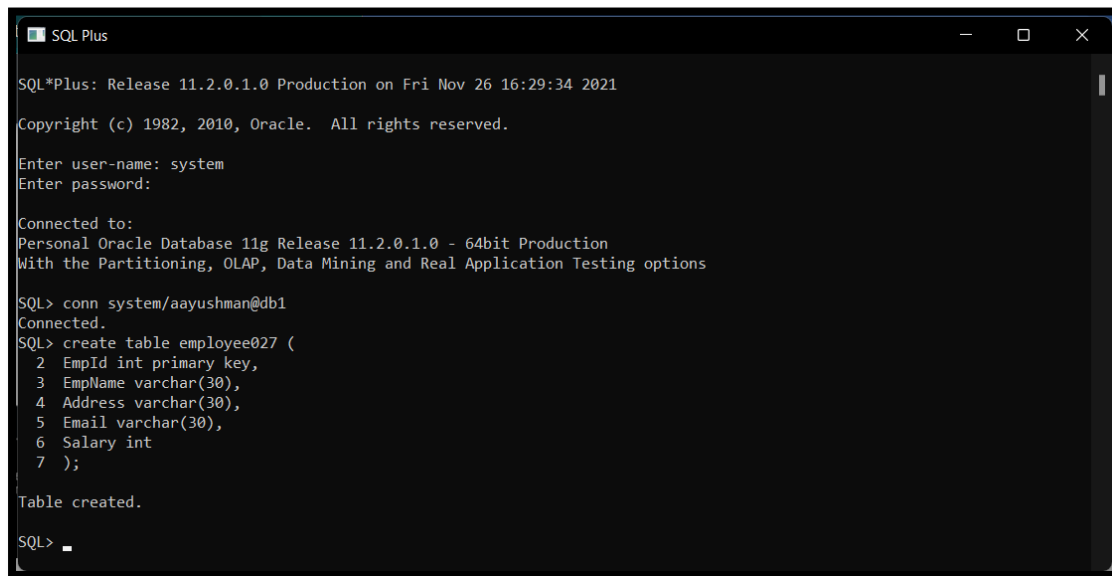
- ✓ **Step 4:** Create one table in database db1



```
Create one table in database db1.

create table employee027 (
  EmpId int primary key,
  EmpName varchar(30),
  Address varchar(30),
  Email varchar(20),
  Salary int
);
```

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```
SQL Plus

SQL*Plus: Release 11.2.0.1.0 Production on Fri Nov 26 16:29:34 2021

Copyright (c) 1982, 2010, Oracle. All rights reserved.

Enter user-name: system
Enter password:

Connected to:
Personal Oracle Database 11g Release 11.2.0.1.0 - 64bit Production
With the Partitioning, OLAP, Data Mining and Real Application Testing options

SQL> conn system/aayushman@db1
Connected.
SQL> create table employee027 (
  2 EmpId int primary key,
  3 EmpName varchar(30),
  4 Address varchar(30),
  5 Email varchar(30),
  6 Salary int
  7 );

Table created.

SQL> _
```

✓ **Step 5:** Insert Some values in Created Table.



```
Insert some values into table employee027.

SQL> insert into employee027 values (1, 'aayushman', 'Goregaon', 'aayushmanojha@protonmail.com', 20000);
SQL> insert into employee027 values (2, 'abhishek', 'Kandivali', 'abhishekojha@protonmail.com', 18000);
SQL> insert into employee027 values (3, 'aashi ojha', 'Bandra', 'aashiojha@protonmail.com', 25000);
SQL> insert into employee027 values (4, 'Priyesh', 'Colaba', 'Priyesh@protonmail.com', 23500);
SQL> insert into employee027 values (5, 'Pankaj', 'Madh', 'Pankaj@protonmail.com', 15200);
```

ADVANCED DATABASE

```
SQL Plus

SQL*Plus: Release 11.2.0.1.0 Production on Fri Nov 26 16:29:34 2021

Copyright (c) 1982, 2010, Oracle. All rights reserved.

Enter user-name: system
Enter password:

Connected to:
Personal Oracle Database 11g Release 11.2.0.1.0 - 64bit Production
With the Partitioning, OLAP, Data Mining and Real Application Testing options

SQL> conn system/aayushman@db1
Connected.
SQL> create table employee027 (
  2 EmpId int primary key,
  3 EmpName varchar(30),
  4 Address varchar(30),
  5 Email varchar(30),
  6 Salary int
  7 );

Table created.

SQL> insert into employee027 values (1, 'aayushman', 'Goregaon', 'aayushmanojha@protonmail.com', 20000);

1 row created.

SQL> insert into employee027 values (2, 'abhishek', 'Kandivali', 'abhishekojha@protonmail.com', 18000);

1 row created.

SQL> insert into employee027 values (3, 'aashi ojha', 'Bandra', 'aashiojha@protonmail.com', 25000);

1 row created.

SQL> insert into employee027 values (4, 'Priyesh', 'Colaba', 'Priyesh@protonmail.com', 23500);

1 row created.

SQL> insert into employee027 values (5, 'Pankaj', 'Madh', 'Pankaj@protonmail.com', 15200);

1 row created.

SQL> _
```

✓ Step 6:

```
Show all tables in employee.

SQL> Select * from employee027;
```


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```
SQL Plus
SQL> select * from employee027;
```

EMPID	EMPNAME	ADDRESS	EMAIL	SALARY
6	kyara	Borivali	kyara@protonmail.com	15000
1	aayushman	Goregaon	aayushmanojha@protonmail.com	20000
2	abhishek	Kandivali	abhishekojha@protonmail.com	18000
3	aashi ojha	Bandra	aashiojha@protonmail.com	25000
4	Priyesh	Colaba	Priyesh@protonmail.com	23500
5	Pankaj	Madh	Pankaj@protonmail.com	15200

```
6 rows selected.
SQL>
```

✓ **Step 7:** Enter following command to create link between two databases.

```
Enter following command to create link between two databases.
SQL> create database link db1todb2 connect system identified by aayushman using 'db2';
```

```
SQL Plus
SQL> create database link db1todb2 connect to system identified by aayushman using 'db2';
Database link created.
SQL>
```

✓ **Step 8:** Connect to Db2.

```
SQL Plus
SQL> conn system/aayushman@db2
Connected.
SQL>
```

✓ **Step 9:** Create link to connect db1.

```
Create link to connect db1.
SQL> create database link db2todb1 connect system identified by aayushman using 'db1';
```

```
SQL Plus
SQL> create database link db2todb1 connect to system identified by aayushman using 'db1';
Database link created.
SQL>
```

✓ **Step 10:** Create emp1 select where salary<18000.

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Create emp1 select where salary<18000.

```
SQL> create table emp1 as select * from employee027@db2todb1 where salary<18000;
```

```
SQL Plus

SQL> create table emp1 as select * from employee027@db2todb1 where salary < 18000;

Table created.

SQL> set linesize 1000
SQL> select * from emp1;

  EMPID EMPNAME                ADDRESS                EMAIL                      SALARY
-----
     6 kyara                  Borivali              kyara@protonmail.com      15000
     5 Pankaj                  Madh                  Pankaj@protonmail.com     15200

SQL>
```

✓ **Step 11:** Create table emp2 where address='Bandra'.

Create table emp2 where address='Bandra'.

```
SQL> > create table emp2 as select * from employee027@db2todb1 where address='Bandra';
```

```
SQL Plus

SQL> create table emp2 as select * from employee027@db2todb1 where address='Bandra';

Table created.

SQL> select * from emp2;

  EMPID EMPNAME                ADDRESS                EMAIL                      SALARY
-----
     3 aashi ojha              Bandra                aashiojha@protonmail.com  25000

SQL>
```

✓ **Step 12:** Select salary from employee

Select salary from employee

```
SQL> conn system/aayushman@db2
```

```
SQL> select salary from employee027@db2todb1;
```

ADVANCED DATABASE

```
SQL Plus
SQL> conn system/aayushman@db2
Connected.
SQL> select salary from employee027@db2todb1;

SALARY
-----
15000
20000
18000
25000
23500
15200

6 rows selected.

SQL> _
```

✓ **Step 13:** Select mail whose salary>16000.

```
Select email whose salary>16000.

SQL> select email from employee027@db2todb1 where salary > 16000
```

```
SQL Plus
SQL> select Email from employee027@db2todb1 where salary > 16000;

EMAIL
-----
aayushmanojha@protonmail.com
abhishekojha@protonmail.com
aashiojha@protonmail.com
Priyesh@protonmail.com

SQL> _
```

✓ **Step 14:** Select Employee Name and Email from Employee table where eid=2.

```
Select ename, email from employee where eid=2.

SQL> select EmpName,Email from employee027@db2todb1 where eid=2;
```

```
SQL Plus
SQL> select EmpName, Email from employee027@db2todb1 where EmpId=2;

EMPNAME          EMAIL
-----
abhishek         abhishekojha@protonmail.com

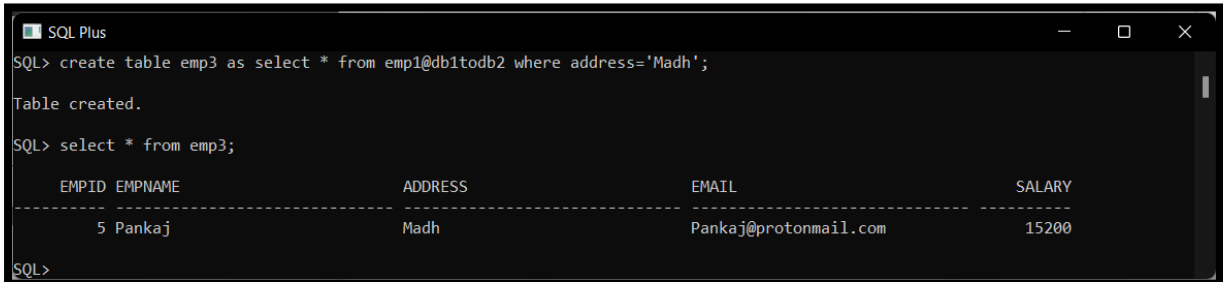
SQL> _
```

✓ **Step 15:** Create table emp3 where address='Madh'.

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```
Create table emp3 where address='Madh'.
```

```
SQL> create table emp3 as select * from employee027@db2todb1 where address='Madh';
```



The screenshot shows a terminal window titled "SQL Plus" with the following content:

```
SQL> create table emp3 as select * from emp1@db1todb2 where address='Madh';
Table created.
SQL> select * from emp3;
```

EMPID	EMPNAME	ADDRESS	EMAIL	SALARY
5	Pankaj	Madh	Pankaj@protonmail.com	15200

```
SQL>
```

Conclusion: Successfully Execution of Schema into horizontal and vertical Fragmentation on different nodes in Distributed Database Environment.