

Task 2:Privileged Access

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1 Privileged Access

The master users are often members of the information technology team, such as database administrators, responsible for managing the system. They have elevated privileges and can manage the privileged access for all users to the system (Smith, 2022). Only master users can change the database schema or any user with the CREATE privilege. In this task, the master user will create two leading roles admin and customer. The master user can grant and revoke privileges for other users depending on their roles, like individual users or PUBLIC (all users)(Oracle, 2022).

1.1 Admin

The privileged command for each table with explanation

- **Customer Table**

```
GRANT SELECT, UPDATE, INSERT, DELETE ON Customer TO admin;
```

This command grants the admin the full privilege to manage the records in the table. For example, if customers request to remove their accounts and their data, update their details, or delete duplicate accounts. In addition, sometime admin may need to delete old accounts which have been unused for a long time (PostgreSQL, 2022).

- If the Admin is allowed to change the database schema, which means they can modify the table schema, this grant command will be applied. However, the Admin cannot generally create or remove tables on schema because this may result in records loss if it happens by mistake. Therefore, in access privilege, it is always better to give the users less or only the required access to do their jobs to protect the data from any risk.

```
GRANT CREATE, SELECT, UPDATE, INSERT, DELETE, REFERENCES, TRIGGERS ON  
customer_table TO admin;
```

- If the admin is given full privileges as super user, this grant command will be applied:

```
GRANT ALL PRIVILEGES ON Customer TO admin;
```

- **Transaction Table**

```
GRANT SELECT, UPDATE, INSERT,DELETE ON Transaction TO admin;
```

The update command will allow the admin to update columns, tables, views, etc. While delete allows removing a table or view from the systems ([PostgreSQL, 2022](#))

- **Product Table**

```
GRANT SELECT, UPDATE, INSERT, DELETE ON Product TO admin;
```

Create allows new schemas, which means the admin can add new objects within the schema or make changes to the used schema ([PostgreSQL, 2022](#))

- **Store Table**

```
GRANT SELECT, UPDATE, INSERT, DELETE ON Store TO admin;
```

Only the admin can create new stores, remove old store, modify the records, update the table schema, or change it.

- **Warehouse Table**

```
GRANT SELECT, UPDATE, INSERT, DELETE ON Warehouse TO admin;
```

Admin can create new columns or views for the table and update or delete the table records.

1.2 Customer

The privileged command for each table with explanation

- **Customer Table**

```
GRANT INSERT ON customer_table TO customer;
```

Users can insert new records to the customer's table but cannot modify or delete any record. Users are not allowed to see other customers' records. The right to modify or delete a customer or make any changes to the schema is inherent in being the admin and cannot be done by the customer itself ([PostgreSQL, 2022](#))

- To give the customer permission to edit or update their entry, this command will only be applied after the customer has entered data otherwise the previous privileges will be applied.

```
“GRANT SELECT (col1), UPDATE (col1) ON customer_table TO specific_Customer;
```

- **Transaction Table**

```
GRANT INSERT ON Transaction TO customer;
```

The customer can insert in the transaction table when attempting to purchase a product but cannot view, delete, or modify other transactions.

- **Product Table**

`GRANT SELECT ON Product TO customer;`

In the product table, the customer will be able to explore the products and view the product's availability in warehouses and stores but cannot change or insert any data.

- **Store Table**

`GRANT SELECT ON Store TO customer;`

The customer can explore the stores with phone numbers and locations but cannot change or insert any data. It means customer can

- **Warehouse Table**

`GRANT SELECT ON Warehouse TO customer;`

The customer can explore the Warehouses with phone numbers and locations but cannot change or insert any data

References

Oracle (2022) *Using SQL roles*. Available at: <https://docs.oracle.com/javadb/10.6.2.1/devguide/cdevcsecureroles.html> (Accessed: 27 October 2022).

PostgreSQL (2022) 5.7. *Privileges*. PostgreSQL Documentation. Available at: <https://www.postgresql.org/docs/13/ddl-priv.html> (Accessed: 27 October 2022).

Smith, C. (2022) *A Guide to Managing and Securing Privileged Users*. Delinea. Available at: <https://delinea.com/blog/privileged-users> (Accessed: 27 October 2022).