Taazaa Training

Assignment -11

“Database creation ,Table Creation, Primary Key , Super key, Foreign Key, Candidate Key, Alternate Key, Composite Key, Inserting Value in Table”

Submitted By :-

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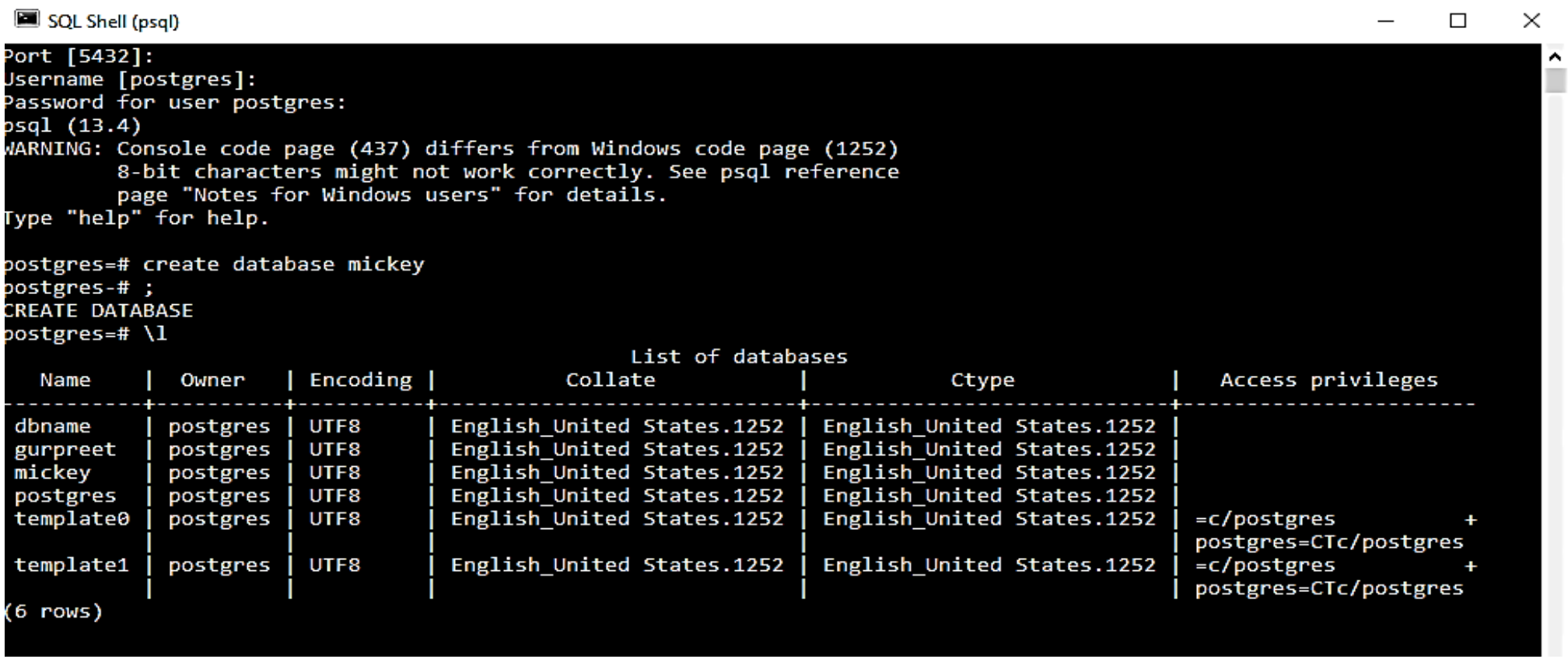
Database Creation

Command :-

create database <database name>;



See All Databases & Connecting with Database

To see database in postgresql

- Command :- \l

To connect with database

- Command :- \c <database name>

SQL Shell (psql)

```
Server [localhost]:
Database [postgres]:
Port [5432]:
Username [postgres]:
Password for user postgres:
psql (13.4)
WARNING: Console code page (437) differs from Windows code page (1252)
         8-bit characters might not work correctly. See psql reference
         page "Notes for Windows users" for details.
Type "help" for help.

postgres=# \l
                                                List of databases
   Name    |  Owner   | Encoding |          Collate           |           Ctype            |   Access privileges
-----------+----------+----------+----------------------------+----------------------------+-----------------------
 dbname    | postgres | UTF8     | English_United States.1252 | English_United States.1252 |
 gurpreet  | postgres | UTF8     | English_United States.1252 | English_United States.1252 |
 mickey    | postgres | UTF8     | English_United States.1252 | English_United States.1252 |
 postgres  | postgres | UTF8     | English_United States.1252 | English_United States.1252 |
 template0 | postgres | UTF8     | English_United States.1252 | English_United States.1252 | =c/postgres          +
           |          |          |                            |                            | postgres=CTc/postgres
 template1 | postgres | UTF8     | English_United States.1252 | English_United States.1252 | =c/postgres          +
           |          |          |                            |                            | postgres=CTc/postgres
(6 rows)


postgres=# \c mickey
You are now connected to database "mickey" as user "postgres".
mickey=#
```

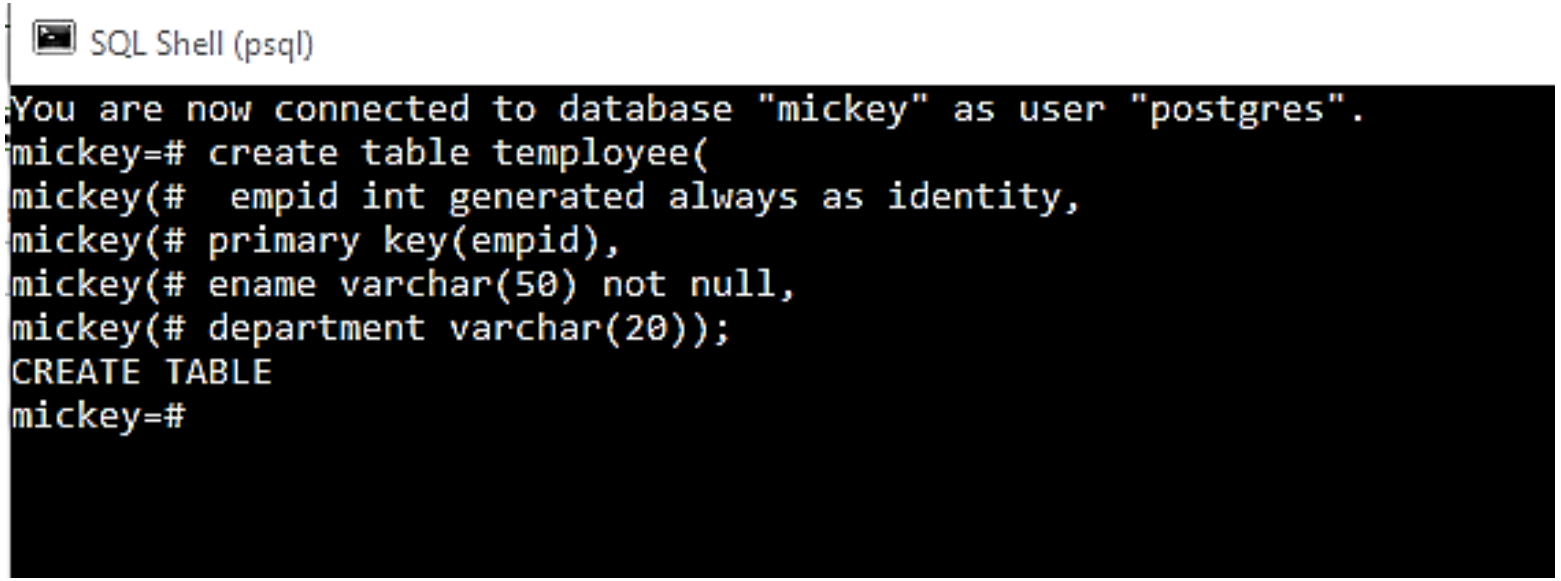
Table Creation in Postgresql

Command:-

create table <table name>(
column1 datatype(length) column_contraint,
column2 datatype(length) column_contraint,
column3 datatype(length) column_constraint);

For eg:-

mickey=# create table temployee(
mickey(# empid int generated always as identity,
mickey(# primary key(empid),
mickey(# ename varchar(50) not null,
mickey(# department varchar(20));



Primary Key

- It is the key which is used to identify one and only one instance of an entity uniquely. An entity can contain multiple keys as we saw in PERSON table. The key which is most suitable from those lists become a primary key.
- In the EMPLOYEE table, ID can be primary key since it is unique for each employee. In the EMPLOYEE table, we can even select License_Number and Passport_Number as primary key since they are also unique.
- For each entity, selection of the primary key is based on requirement and developers.

Rules & Creation of Primary Key

Rules:-

- The primary key column cannot contain a null or empty value.
- The primary key column value must be unique.
- Each table can have only one primary key.
- If we are using the primary key, we should use **INT or BIGINT** data type as it is recommended.

we can create a primary key with the help of the following commands:

- **CREATE TABLE command**

  During table creation

- **ALTER TABLE command**

  After table creation

Creation of Primary Key using CREATE TABLE command

Syntax:-

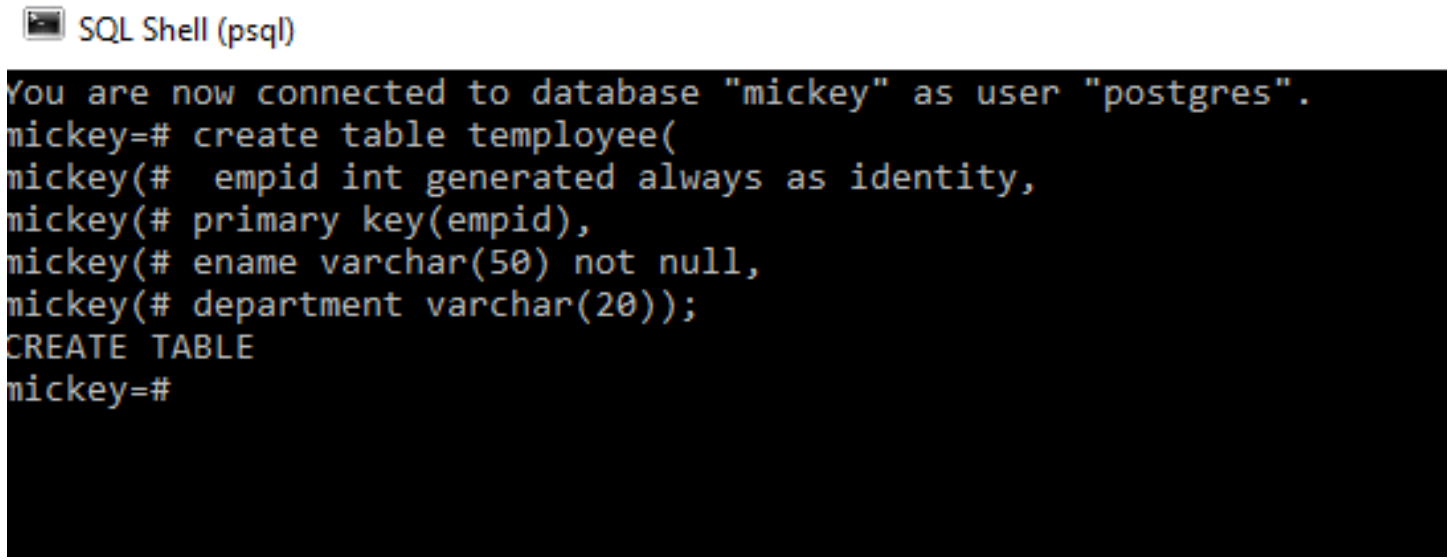
```
CREATE TABLE table_name
(
 column1 datatype CONSTRAINT constraint_name PRIMARY KEY,
 column2 datatype [ NULL | NOT NULL ],
 ...
);
```

Or

```
CREATE TABLE table_name
(
 column1 datatype [ NULL | NOT NULL ],
 column2 datatype [ NULL | NOT NULL ],
 ...
 CONSTRAINT constraint_name
  PRIMARY KEY (column_name(s))
);
```

For eg:-

```
mickey=# create table temployee(
mickey(#  empid int generated always as identity,
mickey(# primary key(empid),
mickey(# ename varchar(50) not null,
mickey(# department varchar(20));
```



Foreign Key

- A **foreign key** is a group of columns with values dependent on the primary key benefits from another table. It is used to have the value in one column or group of columns displayed in the same column or combination of columns in another table.
- The **foreign key** is also known as the **referencing key**, and it matches the primary key field from another table, which implies that the foreign key field in one table refers to the other table's primary key field.

create a Foreign key in PostgreSQL

- In PostgreSQL, we can create a foreign key with the help of the following commands:
- **CREATE TABLE command**
- **ALTER TABLE command**

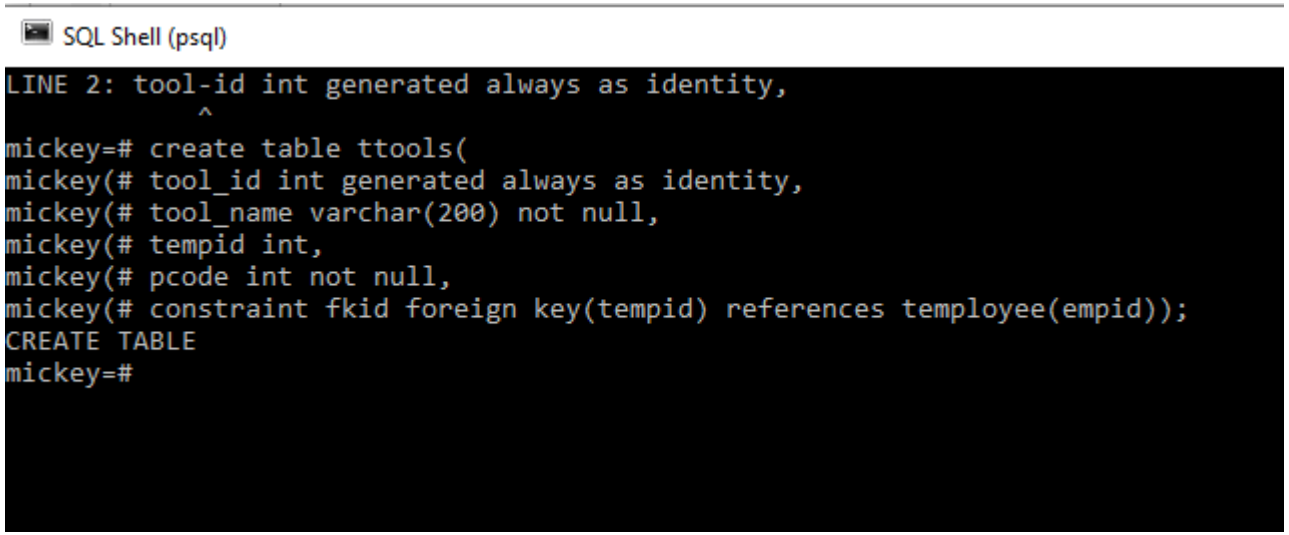
Creation of Foreign Key using CREATE TABLE command

Syntax:-
[**CONSTRAINT** constraint_name]
FOREIGN KEY [foreign_key_name] (column_name, ...)

REFERENCES parent_table_name (column_name,...)

For eg:-

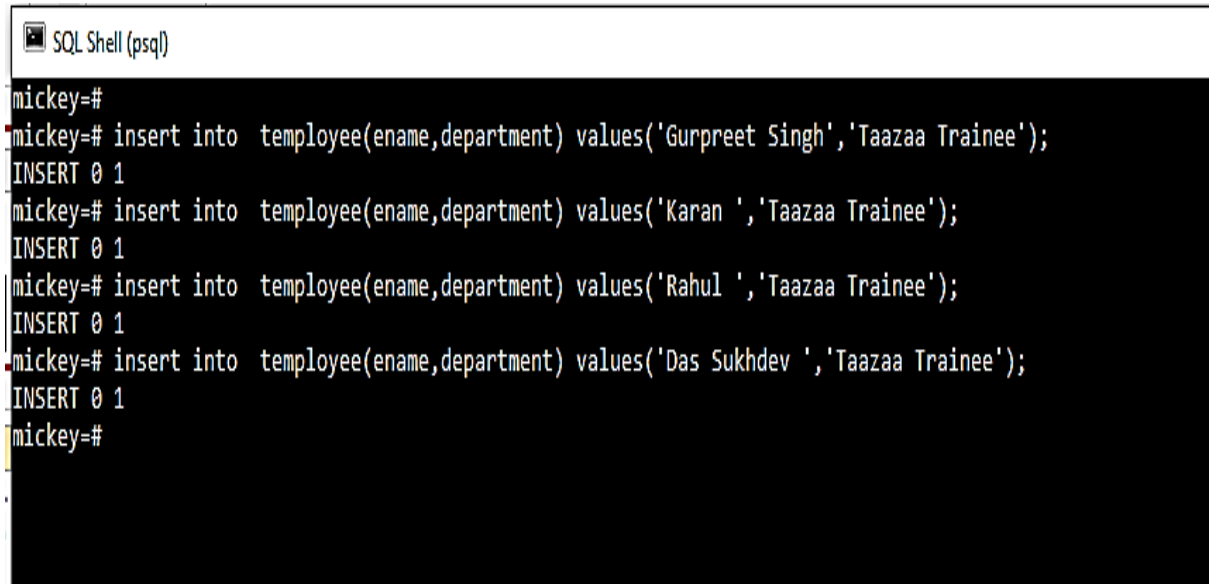
```
mickey=# create table ttools(
mickey(# tool_id int generated always as identity,
mickey(# tool_name varchar(200) not null,
mickey(# tempid int,
mickey(# pcode int not null,
mickey(# constraint fkid foreign key(tempid)
references temployee(empid));
CREATE TABLE
```



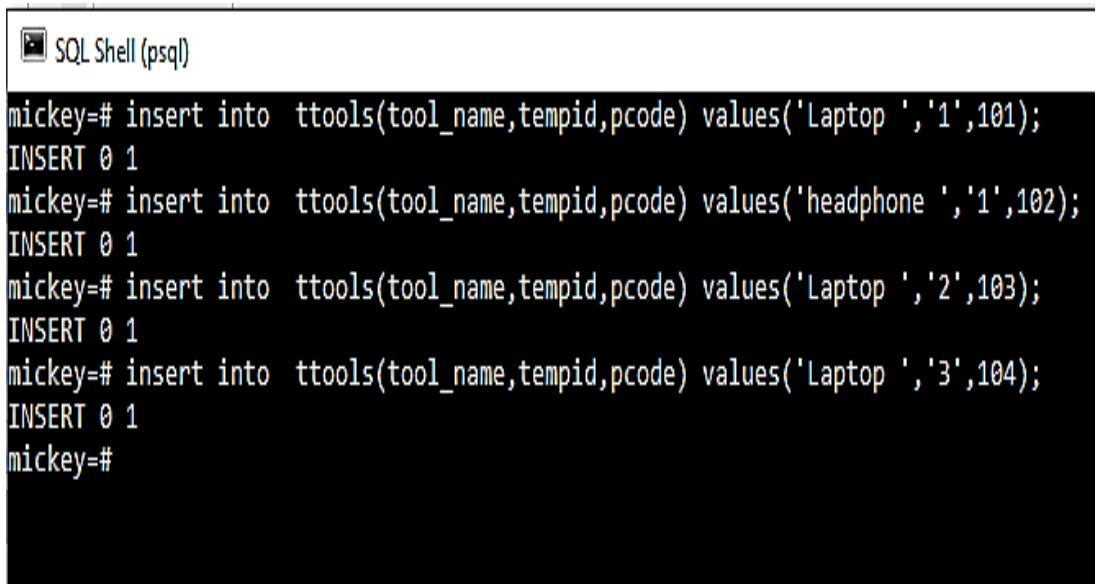
Inserting Values in Tables

Syntax:- INSERT INTO table_name(column1, column2, …) VALUES (value1, value2, …);

In temployee table



In ttools table



To Display Values from Tables

Syntax:-

To display all values :- Select * from <table name>

To display selected values:- select <Columns name> from <table name>

SQL Shell (psql)

```
mickey=# select * from temployee;
 empid |      ename       |    department
-------+------------------+-----------------
     1 | Gurpreet Singh | Taazaa Trainee
     2 | Karan          | Taazaa Trainee
     3 | Rahul          | Taazaa Trainee
     4 | Das Sukhdev    | Taazaa Trainee
(4 rows)


mickey=#
```

SQL Shell (psql)

```
mickey=# select * from ttools;
 tool_id | tool_name   | tempid | pcode
---------+-------------+--------+-------
       1 | Laptop      |      1 |   101
       2 | headphone   |      1 |   102
       3 | Laptop      |      2 |   103
       4 | Laptop      |      3 |   104
(4 rows)
```

Candidate Key & Alternate Key

- All those key in a table that can be served as a primary key are known as candidate key
- Eg:- in ttools table pcode ,tool_id are the set of candidate key
- All those keys in candidate key that are not taken as primary key in table are known as alternate keys
- Eg:- in ttools table pcode is an alternate key

Super Key & Composite key

- A super key is a group of single or multiple keys which identifies rows in a table.
- A Super key may have additional attributes that are not needed for unique identification.
- Eg:- in ttools table tool_id,tempid,pcode…
- **COMPOSITE KEY** is a combination of two or more columns that uniquely identify rows in a table.
- The combination of columns guarantees uniqueness, though individually uniqueness is not guaranteed. Hence, they are combined to uniquely identify records in a table.
- Eg:- combination of pcode,temp_id…