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# ASSIGNMENT 1

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CMPG 311



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## Creating Database and Tables

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MySQL 8.0 Command Line Client

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> show databases;
+-----+
| Database |
+-----+
| information_schema |
| mysql |
| performance_schema |
| sakila |
| sys |
| world |
+-----+
6 rows in set (0.71 sec)

mysql>
mysql> create database BidvestBank;
Query OK, 1 row affected (0.64 sec)

mysql> use BidvestBank;
Database changed
mysql> create table BankBranch(
  -> assets varchar(8) not null primary key,
  -> branch_name varchar(20),
  -> branch_city varchar(20)
  -> );
Query OK, 0 rows affected (2.42 sec)

mysql> describe BankBranch;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| assets | varchar(8) | NO | PRI | NULL | |
| branch_name | varchar(20) | YES | | NULL | |
| branch_city | varchar(20) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.25 sec)
```

```
MySQL 8.0 Command Line Client

mysql> show tables;
+-----+
| Tables_in_bidvestbank |
+-----+
| bankbranch |
+-----+
1 row in set (0.54 sec)

mysql> create table Customer(
  -> id int(11) unsigned auto_increment primary key not null,
  -> customer_name varchar(30),
  -> customer_street varchar(30),
  -> customer_city varchar(30)
  -> );
Query OK, 0 rows affected, 1 warning (1.20 sec)

mysql> describe Customer;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| id | int unsigned | NO | PRI | NULL | auto_increment |
| customer_name | varchar(30) | YES | | NULL | |
| customer_street | varchar(30) | YES | | NULL | |
| customer_city | varchar(30) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.13 sec)
```

```
MySQL 8.0 Command Line Client

mysql> create table CustomerAccount(
  -> account_number varchar(12) not null primary key,
  -> branch_name varchar(30),
  -> balance double
  -> );
Query OK, 0 rows affected (1.13 sec)

mysql> describe CustomerAccount;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| account_number | varchar(12) | NO | PRI | NULL | |
| branch_name | varchar(30) | YES | | NULL | |
| balance | double | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> create table Loan(
  -> loan_number varchar(15) not null primary key,
  -> branch_name varchar(30),
  -> amount double
  -> );
Query OK, 0 rows affected (1.03 sec)

mysql> describe Loan
  -> ;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| loan_number | varchar(15) | NO | PRI | NULL | |
| branch_name | varchar(30) | YES | | NULL | |
| amount | double | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.13 sec)

mysql>
```

```
MySQL 8.0 Command Line Client

mysql> create table Depositer(
  -> account_number varchar(15) not null primary key,
  -> customer_name varchar(30)
  -> );
Query OK, 0 rows affected (0.66 sec)

mysql> describe Depositer;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| account_number | varchar(15) | NO | PRI | NULL | |
| customer_name | varchar(30) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.00 sec)

mysql> create table Borrower(
  -> loan_number varchar(15) not null primary key,
  -> customer_name varchar(30)
  -> );
ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near 'varchar(15) not null primary key, customer_name varchar(30) )' at line 2
mysql> create table Borrower(
  -> loan_number varchar(15) not null primary key,
  -> customer_name varchar(30)
  -> );
Query OK, 0 rows affected (0.71 sec)

mysql> describe Borrower;
+-----+-----+-----+-----+-----+-----+
| Field | Type | Null | Key | Default | Extra |
+-----+-----+-----+-----+-----+-----+
| loan_number | varchar(15) | NO | PRI | NULL | |
| customer_name | varchar(30) | YES | | NULL | |
+-----+-----+-----+-----+-----+-----+
2 rows in set (0.00 sec)

mysql>
```

```
MySQL 8.0 Command Line Client

mysql> create table Employee(
  -> id int(11) unsigned auto_increment not null primary key,
  -> employee_name varchar(30),
  -> branch_name varchar(30),
  -> salary double
  -> );
Query OK, 0 rows affected, 1 warning (0.89 sec)

mysql> describe Employee;
+-----+-----+-----+-----+-----+-----+
| Field          | Type          | Null | Key | Default | Extra          |
+-----+-----+-----+-----+-----+-----+
| id             | int unsigned  | NO   | PRI | NULL    | auto_increment |
| employee_name  | varchar(30)   | YES  |     | NULL    |                |
| branch_name    | varchar(30)   | YES  |     | NULL    |                |
| salary         | double        | YES  |     | NULL    |                |
+-----+-----+-----+-----+-----+-----+
4 rows in set (0.00 sec)
```

## Populating Database with Data

### BankBrach

```
MySQL 8.0 Command Line Client

mysql> describe employee;
+-----+-----+-----+-----+-----+-----+
| Field          | Type          | Null | Key | Default | Extra          |
+-----+-----+-----+-----+-----+-----+
| employee_name  | varchar(30)   | NO   | PRI | NULL    |                |
| branch_name    | varchar(30)   | YES  |     | NULL    |                |
| salary         | double        | YES  |     | NULL    |                |
+-----+-----+-----+-----+-----+-----+
3 rows in set (0.00 sec)

mysql> insert into bankbrach values('Midrand','Johannesburg',7100000);
Query OK, 1 row affected (0.31 sec)

mysql> insert into bankbrach values('Newton','Johannesburg',9000000);
Query OK, 1 row affected (0.16 sec)

mysql> insert into bankbrach values('Mabopane','Pretoria',400000);
Query OK, 1 row affected (0.15 sec)

mysql> insert into bankbrach values('Belgravia','Kimberly',3700000);
Query OK, 1 row affected (0.05 sec)

mysql> insert into bankbrach values('Sunnyside','Pretoria',1700000);
Query OK, 1 row affected (0.18 sec)

mysql> insert into bankbrach values('Amanzimtoti','Durban',300000);
Query OK, 1 row affected (0.24 sec)

mysql> insert into bankbrach values('Universitas','Bloemfontein',2100000);
Query OK, 1 row affected (0.16 sec)

mysql> insert into bankbrach values('Mamelodi','Pretoria',8000000);
Query OK, 1 row affected (0.15 sec)
```

## Customer

```
MySQL 8.0 Command Line Client
Enter password: *****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 18
Server version: 8.0.19 MySQL Community Server - GPL

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Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> use bidvestbank;
Database changed
mysql> insert into customer values('Brooks','Senator','Johannesburg');
Query OK, 1 row affected (0.17 sec)

mysql> insert into customer values('Jooste','North','Kimberly');
Query OK, 1 row affected (0.13 sec)

mysql> insert into customer values('Lombard','Sand Hill','Neslpruit');
Query OK, 1 row affected (0.20 sec)

mysql> insert into customer values('Mokwena','Walnut','Port-Elizabeth');
Query OK, 1 row affected (0.26 sec)

mysql> insert into customer values('Johnson','Mmabatho','Mafikeng');
Query OK, 1 row affected (0.17 sec)

mysql> insert into customer values('Zwane','Main','Mafikeng');
Query OK, 1 row affected (0.05 sec)

mysql> insert into customer values('Lindsay','Park','George');
Query OK, 1 row affected (0.26 sec)

mysql> insert into customer values('Smith','North','Kimberly');
Query OK, 1 row affected (0.18 sec)

mysql> insert into customer values('Dlamini','Putnam','Port-Elizabeth');
Query OK, 1 row affected (0.13 sec)

mysql> insert into customer values('Williams','Nassau','Giyane');
```

## Customer Account

```
MySQL 8.0 Command Line Client

mysql> insert into customeraccount values('A-5324','Newtown',500);
Query OK, 1 row affected (0.06 sec)

mysql> insert into customeraccount values('A-5624','Sunnyside',400);
Query OK, 1 row affected (0.14 sec)

mysql> insert into customeraccount values('A-7794','Midrand',900);
Query OK, 1 row affected (0.18 sec)

mysql> insert into customeraccount values('A-4467','Mabopane',700);
Query OK, 1 row affected (0.15 sec)

mysql> insert into customeraccount values('A-3546','Midrand',750);
Query OK, 1 row affected (0.17 sec)

mysql> insert into customeraccount values('A-3453','Universitas',700);
Query OK, 1 row affected (0.13 sec)

mysql> insert into customeraccount values('A-2542','Mamelodi',350);
Query OK, 1 row affected (0.15 sec)
```

## Loan

```
MySQL 8.0 Command Line Client

mysql> insert into loan values('L-11','Mamelodi',900);
Query OK, 1 row affected (0.16 sec)

mysql> insert into loan values('L-14','Newtown',1500);
Query OK, 1 row affected (0.08 sec)

mysql> insert into loan values('L-15','Sunnyside',1500);
Query OK, 1 row affected (0.15 sec)

mysql> insert into loan values('L-16','Sunnyside',1300);
Query OK, 1 row affected (0.20 sec)

mysql> insert into loan values('L-17','Newtown',1000);
Query OK, 1 row affected (0.15 sec)

mysql> insert into loan values('L-23','Universitas',2000);
Query OK, 1 row affected (0.20 sec)

mysql> insert into loan values('L-93','Mabopane',500);
Query OK, 1 row affected (0.18 sec)
```

## Depositor

```
MySQL 8.0 Command Line Client

mysql> insert into depositor values('A-5624','Johnson');
Query OK, 1 row affected (0.17 sec)

mysql> insert into depositor values('A-7794','Johnson');
Query OK, 1 row affected (0.21 sec)

mysql> insert into depositor values('A-3546','Zwane');
Query OK, 1 row affected (0.13 sec)

mysql> insert into depositor values('A-3453','Lindsay');
Query OK, 1 row affected (0.05 sec)

mysql> insert into depositor values('A-4467','Smith');
Query OK, 1 row affected (0.05 sec)

mysql> insert into depositor values('A-2542','Dlamini');
Query OK, 1 row affected (0.06 sec)
```

## Borrower

```
MySQL 8.0 Command Line Client

mysql> insert into borrower values('L-16','Modise');
Query OK, 1 row affected (0.16 sec)

mysql> insert into borrower values('L-93','Jooste');
Query OK, 1 row affected (0.17 sec)

mysql> insert into borrower values('L-15','Johnson');
Query OK, 1 row affected (0.15 sec)

mysql> insert into borrower values('L-14','Jackson');
Query OK, 1 row affected (0.14 sec)

mysql> insert into borrower values('L-17','Zwane');
Query OK, 1 row affected (0.14 sec)

mysql> insert into borrower values('L-11','Smith');
Query OK, 1 row affected (0.43 sec)

mysql> insert into borrower values('L-23','Smith');
Query OK, 1 row affected (0.15 sec)

mysql> insert into borrower values('L-18','William');
Query OK, 1 row affected (0.17 sec)
```

## Employee

```
MySQL 8.0 Command Line Client

mysql> insert into employee values('Modise','Sunnyside',1500);
Query OK, 1 row affected (0.18 sec)

mysql> insert into employee values('Brown','Sunnyside',1300);
Query OK, 1 row affected (0.32 sec)

mysql> insert into employee values('Gopal','Sunnyside',5300);
Query OK, 1 row affected (0.15 sec)

mysql> insert into employee values('Johnson','Newtown',1500);
Query OK, 1 row affected (0.43 sec)

mysql> insert into employee values('Loreena','Newtown',1300);
Query OK, 1 row affected (0.15 sec)

mysql> insert into employee values('Rao','Austin',1500);
Query OK, 1 row affected (0.15 sec)

mysql> insert into employee values('Sato','Auston',1600);
Query OK, 1 row affected (0.17 sec)
```

## 4.

```
MySQL 8.0 Command Line Client

Enter password: *****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 22
Server version: 8.0.19 MySQL Community Server - GPL

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owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> use bidvestbank;
Database changed
mysql> select * from customeraccount where balance < 700;
+-----+-----+-----+
| account_number | branch_name | balance |
+-----+-----+-----+
| A-2542         | Mamelodi    | 350     |
| A-5324         | Newtown     | 500     |
| A-5624         | Sunnyside   | 400     |
+-----+-----+-----+
3 rows in set (0.11 sec)

mysql> select customer_name from customer where customer_city = 'Johannesburg';
+-----+
| customer_name |
+-----+
| Brooks        |
+-----+
1 row in set (0.00 sec)

mysql> select * from employee where salary > 1500 and branch_name <> 'Newtown';
+-----+-----+-----+
| employee_name | branch_name | salary |
+-----+-----+-----+
| Gopal         | Sunnyside   | 5300   |
| Sato          | Auston      | 1600   |
+-----+-----+-----+
2 rows in set (0.00 sec)

mysql> select avg(salary) as avg_salary from employee;
```

```
MySQL 8.0 Command Line Client

mysql> select avg(salary) as avg_salary from employee;
+-----+
| avg_salary |
+-----+
|      2000 |
+-----+
1 row in set (0.15 sec)

mysql> select max(assets) from bankbrach;
+-----+
| max(assets) |
+-----+
|    9000000 |
+-----+
1 row in set (0.40 sec)
```

## 5.

```
MySQL 8.0 Command Line Client

1 row in set (0.40 sec)

mysql> select employee_name from employee where branch_name = 'Sunnyside';
+-----+
| employee_name |
+-----+
| Brown         |
| Gopal         |
| Modise        |
+-----+
3 rows in set (0.03 sec)

mysql> select * from borrower;
+-----+-----+
| loan_number | customer_name |
+-----+-----+
| L-11        | Smith         |
| L-14        | Jackson       |
| L-15        | Johnson       |
| L-16        | Modise        |
| L-17        | Zwane         |
| L-18        | William       |
| L-23        | Smith         |
| L-93        | Jooste        |
+-----+-----+
8 rows in set (0.23 sec)

mysql> select account_number from customeraccount where balance > 900;
Empty set (0.02 sec)

mysql> select account_number,balance from customeraccount where balance > 600 and b
ranch_name = 'Newtown';
Empty set (0.00 sec)
```



```
MySQL 8.0 Command Line Client

mysql> select account_number from customeraccount where balance > 900;
Empty set (0.02 sec)

mysql> select account_number,balance from customeraccount where balance > 600 and b
ranch_name = 'Newtown';
Empty set (0.00 sec)

mysql> select branch_name,assets from bankbrach;
+-----+-----+
| branch_name | assets |
+-----+-----+
| Amanzimtoti | 300000 |
| Belgravia   | 3700000 |
| Mabopane    | 400000 |
| Mamelodi    | 8000000 |
| Midrand     | 7100000 |
| Newton      | 9000000 |
| Sunnyside   | 1700000 |
| Universitas | 2100000 |
+-----+-----+
8 rows in set (0.00 sec)

mysql>
```