

**DATABASE  
PROJECT**

**PHASE 3**

**Bank System**



- create schema
- create table bankAccount
- insert the data to table bankAccount

code :

```

1 • CREATE SCHEMA project;
2
3 • CREATE TABLE project.bankAccount
4   ( accountNO           INT(10) NOT NULL ,
5     bpassword          VARCHAR(20),
6     balance            DECIMAL(30,2),
7     CONSTRAINT bankAccount_PK PRIMARY KEY (accountNO)
8 );
9
10 • INSERT INTO project.bankAccount
11   VALUES (5098 , 'st1111111', 25000.20);
12 • INSERT INTO project.bankAccount
13   VALUES (3572 , 'st222222', 1014455);
14 • INSERT INTO project.bankAccount
15   VALUES (1240 , 'st333333' ,99000.59 );
16 • INSERT INTO project.bankAccount
17   VALUES (6174 , 'st444444',7700);
18 • INSERT INTO project.bankAccount
19   VALUES (8205 , 'st555555',10582.91);

```

output :

✓	1	19:36:36	CREATE SCHEMA project
⚠	2	19:36:39	CREATE TABLE project.bankAccount ( accountNO           INT(10) NOT NULL , bpasswordVARCHAR(20), ... )
✓	3	19:36:45	INSERT INTO project.bankAccount VALUES (5098 , 'st1111111', 25000.20)
✓	4	19:36:45	INSERT INTO project.bankAccount VALUES (3572 , 'st222222', 1014455)
✓	5	19:36:45	INSERT INTO project.bankAccount VALUES (1240 , 'st333333' ,99000.59 )
✓	6	19:36:45	INSERT INTO project.bankAccount VALUES (6174 , 'st444444',7700)
✓	7	19:36:45	INSERT INTO project.bankAccount VALUES (8205 , 'st555555',10582.91)

table :

accountNO	bpassword	balance
1240	st333333	99000.59
3572	st222222	1014455.00
5098	st1111111	25000.20
6174	st444444	7700.00
8205	st555555	10582.91

- create table costumer
- insert the data to table costumer

code :

```

21
22 • CREATE TABLE project.costumer
23   ( CID           INT(10) NOT NULL,
24     accountNO    INT(10),
25     CONSTRAINT costumer_PK PRIMARY KEY (CID),
26     CONSTRAINT costumer_FK FOREIGN KEY (accountNO) REFERENCES bankAccount(accountNO) ON DELETE SET NULL
27 );
28
29 • INSERT INTO project.costumer
30   VALUE(181310 ,5098);
31 • INSERT INTO project.costumer
32   VALUE(29720 ,3572);
33 • INSERT INTO project.costumer
34   VALUE(31098 ,1240);
35 • INSERT INTO project.costumer
36   VALUE(32077,6174 );
37 • INSERT INTO project.costumer
38   VALUE(74906 ,8205 );

```

output :

⚠	9	19:42:23	CREATE TABLE project.costumer ( CID           INT(10) NOT NULL, accountNO  INT(10), CONSTRAINT c...
✓	10	19:42:33	INSERT INTO project.costumer VALUE(181310 ,5098)
✓	11	19:42:33	INSERT INTO project.costumer VALUE(29720 ,3572)
✓	12	19:42:33	INSERT INTO project.costumer VALUE(31098 ,1240)
✓	13	19:42:33	INSERT INTO project.costumer VALUE(32077,6174 )
✓	14	19:42:33	INSERT INTO project.costumer VALUE(74906 ,8205 )

table :

CID	accountNO
31098	1240
29720	3572
181310	5098
32077	6174
74906	8205

- create table costumerInfo
- insert the data to table costumerInfo

code :

```

41 • CREATE TABLE project.costumerInfo
42   ( CID           INT(10) NOT NULL,
43     cname        VARCHAR(30),
44     phoneNO      VARCHAR(15),
45     CONSTRAINT costumerInfo_PK PRIMARY KEY (CID)
46   );
47
48
49 • INSERT INTO project.costumerInfo
50   VALUES(181310,'Ali Mohammad', '+9665055078');
51 • INSERT INTO project.costumerInfo
52   VALUES(29720 , 'Nasser saed' , '+96655085558' );
53 • INSERT INTO project.costumerInfo
54   VALUES(31098 , 'Ahmad Saif', '+96658558058' );
55 • INSERT INTO project.costumerInfo
56   VALUES(32077, 'Hamad Khalid', '+96657985505');
57 • INSERT INTO project.costumerInfo
58   VALUES(74906 , 'Faisal Hasan', '+96659276393');

```

output :

⚠	16	19:50:08	CREATE TABLE project.costumerInfo ( CID           INT(10) NOT NULL, cname        VARCHAR(30), phone...
✓	17	19:50:20	INSERT INTO project.costumerInfo VALUES(181310,'Ali Mohammad', '+9665055078')
✓	18	19:50:20	INSERT INTO project.costumerInfo VALUES(29720 , 'Nasser saed' , '+96655085558' )
✓	19	19:50:20	INSERT INTO project.costumerInfo VALUES(31098 , 'Ahmad Saif', '+96658558058' )
✓	20	19:50:20	INSERT INTO project.costumerInfo VALUES(32077, 'Hamad Khalid', '+96657985505')
✓	21	19:50:20	INSERT INTO project.costumerInfo VALUES(74906 , 'Faisal Hasan', '+96659276393')

table :

CID	cname	phoneNO
29720	Nasser saed	+96655085558
31098	Ahmad Saif	+96658558058
32077	Hamad Khalid	+96657985505
74906	Faisal Hasan	+96659276393
181310	Ali Mohammad	+9665055078

- create table operation
- insert the data to table operation

code :

```

61 • CREATE TABLE project.operation
62   ( accountNO      INT(10),
63     operationNO    INT(20) NOT NULL,
64     operationType  VARCHAR(20) CHECK (operationType IN ('deposit','withdraw','transaction')),
65     operationAmount DECIMAL(10,2),
66     CONSTRAINT operation_PK PRIMARY KEY (operationNO),
67     CONSTRAINT operation_FK FOREIGN KEY (accountNO) REFERENCES bankAccount(accountNO) ON DELETE SET NULL
68   );
69
70 • INSERT INTO project.operation
71   VALUES(5098 , 273036 , 'withdraw', 300 );
72 • INSERT INTO project.operation
73   VALUES(3572, 8297736, 'transaction', 7000 );
74 • INSERT INTO project.operation
75   VALUES(1240, 7383197, 'deposit',500 );
76 • INSERT INTO project.operation
77   VALUES(6174,30383, 'transaction',100 );
78 • INSERT INTO project.operation
79   VALUES(8205,63683, 'deposit',1000);

```

output :

⚠	23	19:56:45	CREATE TABLE project.operation (accountNO INT(10), operationNO INT(20) NOT NULL, operationTyp...
✓	24	19:56:51	INSERT INTO project.operation VALUES(5098 , 273036 , 'withdraw', 300 )
✓	25	19:56:51	INSERT INTO project.operation VALUES(3572, 8297736, 'transaction', 7000 )
✓	26	19:56:51	INSERT INTO project.operation VALUES(1240, 7383197, 'deposit',500 )
✓	27	19:56:51	INSERT INTO project.operation VALUES(6174,30383, 'transaction',100 )
✓	28	19:56:51	INSERT INTO project.operation VALUES(8205,63683, 'deposit',1000)

table :

accountNO	operationNO	operationType	operationAmount
6174	30383	transaction	100.00
8205	63683	deposit	1000.00
5098	273036	withdraw	300.00
1240	7383197	deposit	500.00
3572	8297736	transaction	7000.00

- create table accountInfo
- insert the data to table accountInfo

code :

```

81 • CREATE TABLE project.accountInfo
82   ( accountNO      INT(10) NOT NULL,
83     balance        DECIMAL(30,2),
84     CONSTRAINT accountInfo_PK PRIMARY KEY (accountNO)
85 );
86
87 • INSERT INTO project.accountInfo
88   VALUES(5098 , 24700.20 );
89 • INSERT INTO project.accountInfo
90   VALUES(3572, 1007455.00 );
91 • INSERT INTO project.accountInfo
92   VALUES(1240, 99500.95);
93 • INSERT INTO project.accountInfo
94   VALUES(6174 , 7600);
95 • INSERT INTO project.accountInfo
96   VALUES(8205, 11682.91);

```

output :

⚠	30	19:59:56	CREATE TABLE project.accountInfo (accountNO INT(10) NOT NULL, balance DECIMAL(30,2), CO...
✓	31	20:00:03	INSERT INTO project.accountInfo VALUES(5098 , 24700.20 )
✓	32	20:00:03	INSERT INTO project.accountInfo VALUES(3572, 1007455.00 )
✓	33	20:00:03	INSERT INTO project.accountInfo VALUES(1240, 99500.95)
✓	34	20:00:03	INSERT INTO project.accountInfo VALUES(6174 , 7600)
✓	35	20:00:03	INSERT INTO project.accountInfo VALUES(8205, 11682.91)

table :

accountNO	balance
1240	99500.95
3572	1007455.00
5098	24700.20
6174	7600.00
8205	11682.91

- create table transactionInfo
- insert the data to table transactionInfo

code :

```

99 • CREATE TABLE project.transactionInfo
100    ( operationNO      INT(20) NOT NULL,
101      operationType   VARCHAR(20) CHECK (operationType IN ('deposit','withdraw','transaction')),
102      operationAmount DECIMAL(10,2),
103      from_account    INT(10),
104      to_account      INT(10),
105      CONSTRAINT transactionInfo_PK PRIMARY KEY (operationNO)
106    );
107
108 • INSERT INTO project.transactionInfo
109   VALUES( 273036 , 'withdraw', 300 , null , null);
110 • INSERT INTO project.transactionInfo
111   VALUES( 8297736 , 'transaction', 7000 , 3572 , 5098);
112 • INSERT INTO project.transactionInfo
113   VALUES( 7383197 , 'deposit', 500 , null , null);
114 • INSERT INTO project.transactionInfo
115   VALUES( 2732116 , 'withdraw', 700 , null , null);
116 • INSERT INTO project.transactionInfo
117   VALUES( 30383 , 'transaction', 100 , 6174, 8205 );
118 • INSERT INTO project.transactionInfo
119   VALUES( 63683 , 'deposit',1000, null , null);

```

output :

⚠	38	20:05:05	CREATE TABLE project.transactionInfo (operationNOINT(20) NOT NULL, operationType VARCHAR(20) C...
✓	39	20:05:14	INSERT INTO project.transactionInfo VALUES( 273036 , 'withdraw', 300 , null , null)
✓	40	20:05:14	INSERT INTO project.transactionInfo VALUES( 8297736 , 'transaction', 7000 , 3572 , 5098)
✓	41	20:05:14	INSERT INTO project.transactionInfo VALUES( 7383197 , 'deposit', 500 , null , null)
✓	42	20:05:14	INSERT INTO project.transactionInfo VALUES( 2732116 , 'withdraw', 700 , null , null)
✓	43	20:05:14	INSERT INTO project.transactionInfo VALUES( 30383 , 'transaction', 100 , 6174, 8205 )
✓	44	20:05:14	INSERT INTO project.transactionInfo VALUES( 63683 , 'deposit',1000, null , null)

table :

operationNO	operationType	operationAmount	from_account	to_account
30383	transaction	100.00	6174	8205
63683	deposit	1000.00	NULL	NULL
273036	withdraw	300.00	NULL	NULL
2732116	withdraw	700.00	NULL	NULL
7383197	deposit	500.00	NULL	NULL
8297736	transaction	7000.00	3572	5098

- create table chatbot
- insert the data to table chatbot

code :

```

123 • CREATE TABLE project.chatBot
124   ( accountNO      INT(10),
125     complaints     VARCHAR(30),
126     suggestion     VARCHAR(30),
127     evaluation      DECIMAL(5,2),
128     CONSTRAINT chatBot_FK FOREIGN KEY (accountNO) REFERENCES bankAccount(accountNO) ON DELETE SET NULL
129   );
130
131 • INSERT INTO project.chatBot
132   VALUES(5098, 'the process is slow','develop the device' , 4.0);
133 • INSERT INTO project.chatBot
134   VALUES(3572, 'nothing', 'noting ', 5);
135 • INSERT INTO project.chatBot
136   VALUES(1240, 'the withdraw was complex ', 'improve your service' ,4);
137 • INSERT INTO project.chatBot
138   VALUES(6174, 'the transaction is slow ', 'update the system ' , 3);
139 • INSERT INTO project.chatBot
140   VALUES(8205, 'nothing', 'noting ', 5);

```

output :

⚠	46	20:10:01	CREATE TABLE project.chatBot ( accountNO      INT(10), complaintsVARCHAR(30), suggestion     VARCH...
✓	47	20:10:07	INSERT INTO project.chatBot VALUES(5098, 'the process is slow','develop the device' , 4.0)
✓	48	20:10:07	INSERT INTO project.chatBot VALUES(3572, 'nothing', 'noting ', 5)
✓	49	20:10:07	INSERT INTO project.chatBot VALUES(1240, 'the withdraw was complex ', 'improve your service' ,4)
✓	50	20:10:07	INSERT INTO project.chatBot VALUES(6174, 'the transaction is slow ', 'update the system ' , 3)
✓	51	20:10:07	INSERT INTO project.chatBot VALUES(8205, 'nothing', 'noting ', 5)

table :

accountNO	complaints	suggestion	evaluation
5098	the process is slow	develop the device	4.00
3572	nothing	noting	5.00
1240	the withdraw was complex	improve your service	4.00
6174	the transaction is slow	update the system	3.00
8205	nothing	noting	5.00

## • update

code :

```
142 • UPDATE project.bankAccount  
143     SET bpassword = 'st0000000'  
144     WHERE bpassword='st1111111';  
145  
146 • SELECT *  
147     FROM project.bankAccount;
```

output :

```
53 20:21:47 UPDATE project.bankAccount SET bpassword = 'st0000000' WHERE bpassword='st1111111'  
54 20:21:57 SELECT * FROM project.bankAccount LIMIT 0, 1000
```

table :

accountNO	bpassword	balance
1240	st333333	99000.59
3572	st222222	1014455.00
5098	st0000000	25000.20
6174	st444444	7700.00
8205	st555555	10582.91

## • delete

code :

```
149 • DELETE FROM project.costumer  
150     WHERE CID = 181310;  
151  
152 • SELECT *  
153     FROM project.costumer;
```

output :

```
55 20:27:09 DELETE FROM project.costumer WHERE CID = 181310  
56 20:27:16 SELECT * FROM project.costumer LIMIT 0, 1000
```

table :

CID	accountNO
31098	1240
29720	3572
32077	6174
74906	8205

- **order by**

code :

```
155 •   SELECT *
156     FROM project.costumer
157     ORDER BY CID DESC;
```

output :

```
✓ 57 20:30:53 SELECT * FROM project.costumer ORDER BY CID DESC LIMIT 0, 1000
```

table :

CID	accountNO
74906	8205
32077	6174
31098	1240
29720	3572

- **subqueries**

code :

```
159 •   SELECT *
160     FROM project.bankAccount
161     WHERE accountNO IN ( SELECT DISTINCT accountNO
162         FROM project.operation
163         WHERE balance <= 10000);
```

output :

```
✓ 58 20:34:20 SELECT * FROM project.bankAccount WHERE accountNO IN ( SELECT DISTINCT accountNO FROM pr...
```

table :

accountNO	bpassword	balance
6174	st444444	7700.00

- group by

code :

```
165 •   SELECT balance,accountNO, COUNT(accountNO) AS count  
166     FROM project.bankAccount  
167     GROUP BY balance  
168     ORDER BY balance ;
```

output :

```
✓ 59 20:37:15 SELECT balance,accountNO, COUNT(accountNO) AS count FROM project.bankAccount GROUP BY balanc...
```

table :

balance	accountNO	count
7700.00	6174	1
10582.91	8205	1
25000.20	5098	1
99000.59	1240	1
1014455.00	3572	1

code :

```
170 •   SELECT evaluation,accountNO, COUNT(accountNO) AS count  
171     FROM project.chatBot  
172     GROUP BY evaluation  
173     ORDER BY evaluation;
```

output :

```
✓ 60 20:41:20 SELECT evaluation,accountNO, COUNT(accountNO) AS count FROM project.chatBot GROUP BY evaluatio...
```

table :

evaluation	accountNO	count
3.00	6174	1
4.00	5098	2
5.00	3572	2

- group by

code :

```
175 •   SELECT cname,phoneNO, COUNT(CID) AS count  
176     FROM project.costumerInfo  
177     GROUP BY cname  
178     ORDER BY cname;
```

output :

```
✓ 61 20:44:13 SELECT cname,phoneNO, COUNT(CID) AS count FROM project.costumerInfo GROUP BY cname ORDER B...
```

table :

cname	phoneNO	count
Ahmad Saif	+96658558058	1
Ali Mohammad	+9665055078	1
Faisal Hasan	+96659276393	1
Hamad Khalid	+96657985505	1
Nasser saed	+96655085558	1

code :

```
180 •   SELECT accountNO,operationNO,operationType, COUNT(accountNO) AS count  
181     FROM project.operation  
182     GROUP BY operationType  
183     ORDER BY operationType;
```

output :

```
✓ 62 20:47:23 SELECT accountNO,operationNO,operationType, COUNT(accountNO) AS count FROM project.operation GR...
```

table :

accountNO	operationNO	operationType	count
8205	63683	deposit	2
6174	30383	transaction	2
5098	273036	withdraw	1

- having

code :

```
185 •   SELECT balance,accountNO, COUNT(accountNO) AS count  
186     FROM project.bankAccount  
187     GROUP BY balance  
188     HAVING (balance) <9900 ;  
189  
190 •   SELECT evaluation,accountNO, COUNT(accountNO) AS count  
191     FROM project.chatbot  
192     GROUP BY evaluation  
193     HAVING (evaluation) <=3 ;  
194  
195 •   SELECT accountNO,operationAmount,COUNT(accountNO) AS count  
196     FROM project.operation  
197     GROUP BY operationAmount  
198     HAVING (operationAmount) > 600 ;
```

output :

```
✓ 63 20:49:46 SELECT balance,accountNO,COUNT(accountNO) AS count FROM project.bankAccount GROUP BY balanc...  
✓ 64 20:50:31 SELECT evaluation,accountNO,COUNT(accountNO) AS count FROM project.chatbot GROUP BY evaluati...  
✓ 65 20:51:06 SELECT accountNO,operationAmount,COUNT(accountNO) AS count FROM project.operation GROUP BY op...
```

table :

balance	accountNO	count
7700.00	6174	1

evaluation	accountNO	count
3.00	6174	1

accountNO	operationAmount	count
8205	1000.00	1
3572	7000.00	1

- join  
where

code :

```
200 •   SELECT b.accountNO , bpassword, balance , c.accountNO , CID
201     FROM project.bankAccount b , project.costumer c
202     WHERE b.accountNO = c.accountNO;
```

output :

```
✓ 66 20:53:54 SELECT b.accountNO , bpassword, balance , c.accountNO , CID FROM project.bankAccount b , project.cost...
```

table :

accountNO	bpassword	balance	accountNO	CID
1240	st333333	99000.59	1240	31098
3572	st222222	1014455.00	3572	29720
6174	st444444	7700.00	6174	32077
8205	st555555	10582.91	8205	74906