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INDIVIDUAL PROJECT: A JOB-SHOP ACCOUNTING SYSTEM

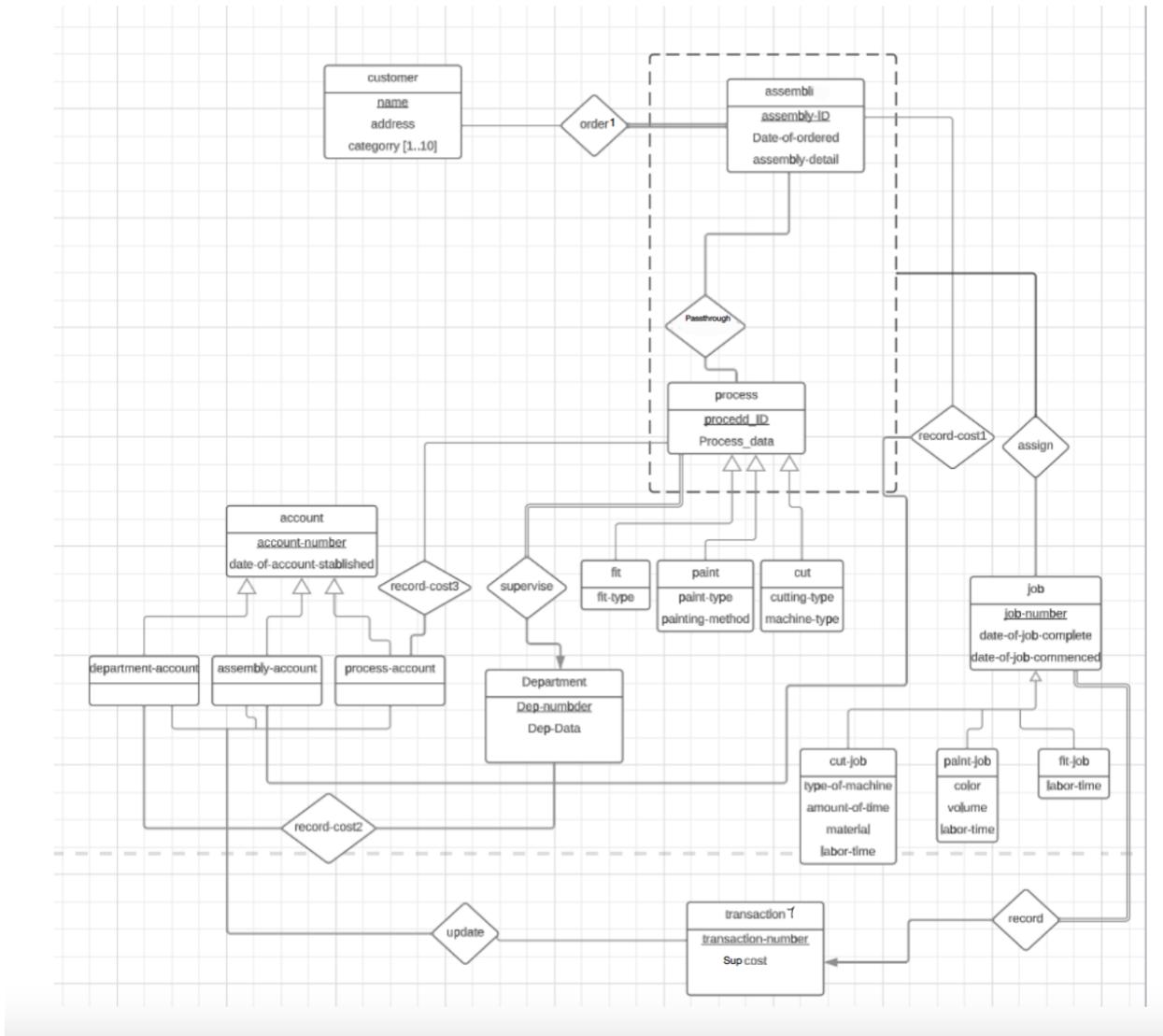
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Task 1.

1.1. ER Diagram



Task2. Relational DataBase

Customer (cname ,caddress ,category)

Order1 (AssemblyId ,cname)

Fit (ProcessId ,Fittype)

Paint (ProcessId ,painttype ,Paintingmethod)

Cut (process-Id, Cuttingtype ,Machinetype)

Assembly (AssemblyId ,dateofordered ,AssemblyDetails)

Process (ProcessId ,ProcessData)

Account (Accountnumber ,dateofaccount)

Departmentaccount (Accountnumber, sup_cost)

Assembly-account (Accountnumber, sup_cost)

Record cost 3(Accountnumber, processId)

Record cost 2 (Accountnumber, depnumber)

Job (Jobnumber ,Dateofjobcommenced ,Dateofjobcompleted)

Cut-job (Jobnumber , typeofmachine ,amountoftime ,material ,labortime)

Paintjob (jobnumber , color, colorvolume ,labortime)

Fitjob (Jobnumber ,labortime)

Processaccount (accountnumber, sup-cost)

Transaction1 (Transactionnumber, sup-cost)

Department (departmentnumber, departmentdata)

Assign(AssemblyId, processId, jobNumber)

Passthrough(AssemblyID, processID)

record(transactionnumber, jobnumber)

Record cost 1 (Accountnumber, AssemblyId)

Supervise (processId, Departmentnumber, Departmentdata)

Update1 (transactionnumber, Accountnumber)

Task 3.

3.1.

Discuss choices of appropriate storage structures for each relational table assuming that all types of storage structures discussed in class (Lecture Topic 4) are available.

For each table, identify the queries (from the list of the given queries) that access the table, the type of each of those queries (insertion, deletion, random search, or range search), the search keys (if any) involved in each of those queries, the frequency of each of those queries, your choice of the file organization for the table, and your detailed justifications. Use the following format to fill out your answers:

Table name	Query# and type	Search key	Query frequency	Selected file organization	justification
Customer	1.) Insert 13.) Range Search	Category	30/Day 100/Day	Index Sequential on Search key Category	For range Search we need Index sequential file organization.
Assemblies	4.) Insert 9)random 11)random	NA	40/Day 200/day 100/day	Heap File Organization	Heap file organization is great for insertions
Assign	6.) insert 14.) Range Search	Job_id	50/Day 1/Month	Heap File Organization	Heap file organization is great for insertions. Range Search is infrequent.

Process	3.) Insert	NA	Infrequent	Heap File Organization	Heap file organization is great for insertions
Department	3.) Insert	NA	Infrequent	Heap File Organization	Heap file organization is great for insertions
Order1	4.) Insert	NA	40/Day	Heap File Organization	Heap file organization is great for insertions
Pass_Through	4.) Insert 11.) Random Search	Process_id	40/Day 100/Day	Extendable hashing with key 'processId'	Extendable hashing is the best for random searches.
Account	5.) Insert 8.) Random Search	Account-Id	10/Day 50/Day	Extendable hashing with key process-id	Extendable hashing is the best for random searches.
Record	8.) Insert	NA	50/Day	Heap File Organization	Heap file organization is great for insertions
Recordcost-2	5.) Insert 8.) Random Search	Account-number	10/Day 50/Day	Extendable hashing with key 'process-id'	Extendable hashing is the best for random searches.
Record cost 1	8.) Random Search	Account_number	10/Day 50/Day	Extendable hashing with key process-id	Extendable hashing is the best for random searches.

Record-dept-cost	5.) Insert 8.) Random Search	Account_number	10/Day 50/Day	Extendable hashing with key process-id process-id	Extendable hashing is the best for random searches
Job	6.) Insert 7.) Random Search 10.) Random Search 14.) Range Search	Job_id Job_id	50/Day 50/Day 20/Day	Extendable hashing with key 'process-id'	Extendable hashing is the best for random searches. Range Search is infrequent.
Cut-job	7.enter 14.Delete 14.range search	Job-number	50/day 1/month 1/month	Heap file	Heap file organization is great for insertions. Range search is infrequent.
Pain-job	7.enter 14. change		50/day 1/month	Heap file	Heap file organization is great for insertions. Random Search is infrequent by comparison.
Fit-job	7.insert		50/day	Heap file	Heap file organization is great for insertions.
Transaction	8.insert		50/day	Heap file	Because it is insert

3.2. Discussion of storage structures for tables (Azure SQL Database)

In Azure SQL Database, the choices for storage structures could vary from the traditional on-premise SQL Server due to the managed nature of the service and its architecture, which is optimized for cloud efficiency and performance.

For each table in Azure SQL Database, the primary considerations for storage structures would be performance, scalability, and cost, which are influenced by the frequency and type of queries run against them.

For instance:

- **Heap Storage:** Tables with frequent insert operations like Job, Fit-job, and Transaction would benefit from heap storage due to its efficiency in handling insertions.
- **Clustered Index:** Tables like Customer that undergo frequent range searches based on a key like Category would be well-suited for clustered indexes which keep rows sorted and efficient for range scans.
- **Non-Clustered Index:** Tables with high read query frequency that require quick data retrieval based on specific columns may use non-clustered indexes.
- **Partitioning:** Large tables with substantial write and read operations may benefit from partitioning, which can help manage and access data more efficiently.

For Assign and Pass-Through tables that need rapid access based on processId, a hashing mechanism could be advantageous.

For blob storage involved with Paintjob and Cut-job, Azure offers different blob types like block, append, and page blobs, which can be chosen based on the type of operation (insert, update, delete) that is most common.

For Record, Recordcost-2, Record cost 1, and Record-dept-cost, extendable hashing might be a good option when there are frequent random search patterns.

It is crucial to monitor performance and adjust the indexing strategies and storage structures as the application scales and as the usage patterns evolve. Azure SQL Database provides dynamic management capabilities and performance tuning recommendations that can further assist in optimizing the storage structures over time

Task4.

```
CREATE TABLE Process (
    processId INT,
    processData VARCHAR(40),
    PRIMARY KEY (processId)
);

CREATE TABLE fit (
    fittype VARCHAR(40),
    processId INT,
    PRIMARY KEY (processId),
    FOREIGN KEY (processId) REFERENCES Process(processId)
);

CREATE TABLE paint (
    painttype VARCHAR(40),
    paintingmethod VARCHAR(40),
    processId INT,
    PRIMARY KEY (processId),
    FOREIGN KEY (processId) REFERENCES Process(processId)
);

CREATE TABLE cut (
    cuttingtype VARCHAR(40),
    machinetype VARCHAR(40),
    processId INT,
    PRIMARY KEY (processId),
    FOREIGN KEY (processId) REFERENCES Process(processId)
);

CREATE TABLE Job (
    jobNumber INT,
    jobtype INT,
    dateofjobcommenced DATE,
    dateofjobcompleted DATE,
```

```

PRIMARY KEY (jobNumber)
);

CREATE TABLE fitjob (
    jobNumber INT,
    labortime INT,
    PRIMARY KEY (jobNumber),
    FOREIGN KEY (jobNumber) REFERENCES Job(jobNumber)
);

CREATE TABLE paintjob (
    jobNumber INT,
    labortime INT,
    color VARCHAR(30),
    colorvolume INT,
    PRIMARY KEY (jobNumber),
    FOREIGN KEY (jobNumber) REFERENCES Job(jobNumber)
);

CREATE TABLE cutjob (
    jobNumber INT,
    labortime INT,
    amountoftime INT,
    typeofmachine VARCHAR(40),
    PRIMARY KEY (jobNumber),
    FOREIGN KEY (jobNumber) REFERENCES Job(jobNumber)
);

CREATE TABLE Assembly (
    AssemblyId INT,
    dateordered DATE,
    AssemblyDetails VARCHAR(80),
    PRIMARY KEY (AssemblyId)
);

CREATE TABLE passthrough (
    AssemblyId INT,
    processId INT,
    PRIMARY KEY (AssemblyId, processId),
    FOREIGN KEY (AssemblyId) REFERENCES Assembly(AssemblyId),
    FOREIGN KEY (processId) REFERENCES Process(processId)
);

```

```

CREATE TABLE account (
    accountnumber INT,
    dateofaccount DATE,
    PRIMARY KEY (accountnumber)
);

CREATE TABLE departmentaccount (
    accountnumber INT,
    sup_cost REAL,
    PRIMARY KEY (accountnumber),
    FOREIGN KEY (accountnumber) REFERENCES account(accountnumber)
);

CREATE TABLE assemblyaccount (
    accountnumber INT,
    sup_cost REAL,
    PRIMARY KEY (accountnumber),
    FOREIGN KEY (accountnumber) REFERENCES account(accountnumber)
);

CREATE TABLE processaccount (
    accountnumber INT,
    sup_cost REAL,
    PRIMARY KEY (accountnumber),
    FOREIGN KEY (accountnumber) REFERENCES account(accountnumber)
);

CREATE TABLE Transaction1 (
    transactionnumber INT ,
    sup_cost REAL,
    PRIMARY KEY (transactionnumber)
);

CREATE TABLE assign (
    AssemblyId INT,
    processId INT,
    jobNumber INT,
    PRIMARY KEY (AssemblyId, processId, jobNumber),
    FOREIGN KEY (AssemblyId) REFERENCES Assembly(AssemblyId),
    FOREIGN KEY (processId) REFERENCES Process(processId),
    FOREIGN KEY (jobNumber) REFERENCES Job(jobNumber)
);

```

```

CREATE TABLE record(
    transactionnumber int,
    jobnumber INT,
    PRIMARY key(transactionnumber, jobnumber)
);

CREATE TABLE customer(
    cname VARCHAR(100),
    caddress VARCHAR(40),
    category INT,
    PRIMARY KEY(cname),
    CONSTRAINT CHK_category CHECK (category IN ('1','2','3','4','5','6','7','8','9','10'))
);

CREATE TABLE order1 (
    AssemblyId INT,
    cname VARCHAR(100),
    PRIMARY KEY (AssemblyId, cname),
    FOREIGN KEY (cname) REFERENCES customer(cname),
    FOREIGN KEY (AssemblyId) REFERENCES Assembly(AssemblyId)
);

CREATE TABLE department (
    departmentnumber INT,
    departmentdata VARCHAR(80),
    PRIMARY KEY (departmentnumber)
);

CREATE TABLE supervise (
    processId INT,
    departmentnumber INT,
    departmentdata VARCHAR(80),
    PRIMARY KEY (processId, departmentnumber),
    FOREIGN KEY (processId) REFERENCES Process(processId),
    FOREIGN KEY (departmentnumber) REFERENCES department(departmentnumber)
);

CREATE TABLE record_dept_cost (
    account_num INT,
    dept_num INT,
    PRIMARY KEY (account_num, dept_num),
    FOREIGN KEY (account_num) REFERENCES departmentaccount(accountnumber),

```

```
    FOREIGN KEY (dept_num) REFERENCES department(departmentnumber)
);
```

```
CREATE TABLE update1(
transactionnumber INT,
accountnumber INT,
FOREIGN KEY (transactionnumber) REFERENCES transaction1(transactionnumber),
FOREIGN KEY (accountnumber) REFERENCES account(accountnumber)
);
```

```
create table record_process_cost(
account_num INT,
process_id INT,
PRIMARY KEY(account_num, process_id),
FOREIGN KEY(account_num) REFERENCES account(accountnumber),
FOREIGN KEY(process_id) REFERENCES process(processId)
);
```

```
CREATE TABLE Record_dep_cost (
Account_Number INT NOT NULL,
Dep_number INT NOT NULL,
CONSTRAINT PK_Record_cost2 PRIMARY KEY (Account_Number, Dep_number),
CONSTRAINT FK_Record_cost2_Account FOREIGN KEY (Account_Number) REFERENCES
account(accountnumber),
CONSTRAINT FK_Record_cost2_Department FOREIGN KEY (Dep_number) REFERENCES
department(departmentnumber)
);
```

```
CREATE TABLE Record_assembly_cost(
Account_Number INT NOT NULL,
Assembly_id INT NOT NULL,
CONSTRAINT PK_Record_Cost1 PRIMARY KEY (Account_Number, Assembly_id),
CONSTRAINT FK_Record_Cost1_Account FOREIGN KEY (Account_Number) REFERENCES
account(accountnumber),
CONSTRAINT FK_Record_Cost1_Assembly FOREIGN KEY (Assembly_id) REFERENCES Assembly(AssemblyId)
);
```

Task 5.

query1)

```
INSERT INTO customer (cname, caddress, category)
VALUES ('ferial', 'tehran', 3);
```

The screenshot shows the SSMS interface with the following details:

- Connections:** task4.sql - naji00...ji0002 | SQLQuery_1 - naji00...ji0002 4
- Servers:** naji0002-sql-server.database.windows.net, cs-dsa-4513-sql-db
- Tables:** dbo.account, dbo.Assembly, dbo.assemblyaccount, dbo.assign, dbo.customer, dbo.cut, dbo.cutjob, dbo.department, dbo.departmentaccount, dbo.fit, dbo.fitjob, dbo.Job, dbo.order1, dbo.paint, dbo.paintjob, dbo.passthrough, dbo.Process, dbo.processaccount, dbo.record, dbo.record_cost, dbo.record_dept_cost, dbo.supervise, dbo.Transaction1, dbo.update1, Dropped Ledger Tables, Views, Synonyms
- Query Editor:** Contains the following T-SQL code:

```
1 INSERT INTO customer (cname, caddress, category)
2 VALUES ('ferial', 'tehran', 3);
```
- Messages:** Started executing query at Line 1 (1 row affected). Total execution time: 00:00:00.093
- Status Bar:** Ln 2, Col 30 Spaces: 4 UTF-8 LF 0 rows MSSQL 00:00:00 naji0002-sql-server.database.windows.net : cs-dsa-4513-sql-db

query 2)

```
4  INSERT INTO department (departmentnumber, departmentdata)
5  VALUES (110, 'Computer Science');
6  |
```

Messages

10:11:13 PM Started executing query at Line 4
(1 row affected)
Total execution time: 00:00:00.104

query 3)

```
8  INSERT INTO Process (processId, processData)
9  VALUES ('1234', 'new process');
10 |
```

Messages

10:15:20 PM Started executing query at Line 8 Design
(1 row affected)
Total execution time: 00:00:00.092

```
12  INSERT INTO department (departmentnumber, departmentdata) .
13  VALUES ('1234', 'new Department Data');
14 |
```

Messages

10:16:49 PM Started executing query at Line 12
(1 row affected)
Total execution time: 00:00:00.089

```
16  INSERT INTO fit (fittype, processId)
17  VALUES ('new', '1234');
18 |
```

Messages

10:19:27 PM Started executing query at Line 16
(1 row affected)
Total execution time: 00:00:00.105

```
19  INSERT INTO paint (painttype, paintingmethod, processId)
20  VALUES ('new Paint Type', 'new Painting Method', '1234');
21
22
```

essages

10:21:38 PM [Started executing query at Line 19](#)
(1 row affected)
Total execution time: 00:00:00.103

```
--  
22  INSERT INTO cut (cuttingtype, machinetype, processId)
23  VALUES ('new Cutting Type', 'new Machine Type', '1234');
24
```

Messages

10:22:41 PM [Started executing query at Line 22](#)
(1 row affected)
Total execution time: 00:00:00.100

query 4)

```
26  INSERT INTO Assembly (AssemblyId, address, dateordered, AssemblyDetails)
27  VALUES ('110', 'tehran', '2020-10-10', 'new Assembly Details');
```

essages

10:29:41 PM [Started executing query at Line 26](#)
(1 row affected)
Total execution time: 00:00:00.092

```
29  INSERT INTO customer (cname, caddress, category)
30  VALUES ('Customer 110', '110 Customer Address', 1);
31
```

essages

11:12:37 PM [Started executing query at Line 29](#)
(1 row affected)
Total execution time: 00:00:00.106

```
33  INSERT INTO order1 (AssemblyId, cname)
34  VALUES ('110', 'Customer 110');
35
```

Messages

11:14:25 PM [Started executing query at Line 33](#)
(1 row affected)
Total execution time: 00:00:00.093

```
INSERT INTO passthrough (AssemblyId, processId)
VALUES ('110', '1234');
```

Messages

7:57 PM [Started executing query at Line 36](#)
(1 row affected)
Total execution time: 00:00:00.091

query 5)

```
39  INSERT INTO account (accountnumber, dateofaccount)
40  VALUES (1234, '2023-04-01');
```

Messages

11:21:31 PM [Started executing query at Line 39](#)
(1 row affected)
Total execution time: 00:00:00.090

```
41  INSERT INTO processaccount (accountnumber, sup_cost)
42  VALUES (1234, 1500.00);
43
```

Messages

11:22:43 PM [Started executing query at Line 41](#)
(1 row affected)
Total execution time: 00:00:00.095

```
44  INSERT INTO assemblyaccount (accountnumber, sup_cost)
45  VALUES (1234, 3000.00);
46 |
```

Messages

11:22:43 PM [Started executing query at Line 41](#)
(1 row affected)
Total execution time: 00:00:00.095

```
47  INSERT INTO departmentaccount (accountnumber, sup_cost)
48  VALUES (1234, 4500.00);
```

Messages

11:24:56 PM [Started executing query at Line 47](#)
(1 row affected)
Total execution time: 00:00:00.101

query 6)

```
50  INSERT INTO Job (jobNumber, dateofjobcommenced)
51  VALUES (777, '2023-04-01');
52 |
```

Messages

11:28:44 PM [Started executing query at Line 50](#)
(1 row affected)
Total execution time: 00:00:00.075

```
53  INSERT INTO assign (AssemblyId, processId, jobNumber)
54  VALUES ('110', '1234', 777);
55 |
```

Messages

11:30:31 PM [Started executing query at Line 53](#)
(1 row affected)
Total execution time: 00:00:00.257

query7)

```
56 UPDATE Job
57 SET dateofjobcompleted = '2023-04-15'
58 WHERE jobNumber = 777;
```

Messages

11:34:31 PM Started executing query at Line 56
(1 row affected)
Total execution time: 00:00:00.096

```
60 UPDATE paintjob
61 SET color = 'green', amountoftime = 123
62 WHERE jobNumber = 777;
63
```

Messages

11:36:12 PM Started executing query at Line 60
(0 rows affected)
Total execution time: 00:00:00.076

query 8)

```
64
65 INSERT INTO Transaction1 (transactionnumber, sup_cost)
66 VALUES (555, 500);
67
```

Messages

11:39:01 PM Started executing query at Line 65
(1 row affected)
Total execution time: 00:00:00.111

```
68 UPDATE departmentaccount
69 SET sup_cost = sup_cost + 500;
70
```

Messages

11:40:11 PM Started executing query at Line 68
(1 row affected)
Total execution time: 00:00:00.092

```
71 UPDATE assemblyaccount  
72 SET sup_cost = sup_cost + 500;  
73
```

Messages

11:41:35 PM Started executing query at Line 71
(0 rows affected)
Total execution time: 00:00:00.066

```
74 UPDATE processaccount  
75 SET sup_cost = sup_cost + 500;
```

Messages

11:42:20 PM Started executing query at Line 74
(1 row affected) Design
Total execution time: 00:00:00.097

query9:

```
121 --9  
122  
123 SELECT  
124     SUM(labor_cost) AS total_labor_cost  
125 FROM (  
126     SELECT labortime * 12 AS labor_cost FROM fitjob WHERE jobNumber IN (SELECT jobNumber FROM assign WHERE AssemblyId = 110)  
127     UNION ALL  
128     SELECT labortime * 12 AS labor_cost FROM paintjob WHERE jobNumber IN (SELECT jobNumber FROM assign WHERE AssemblyId = 110)  
129     UNION ALL  
130     SELECT labortime * 12 AS labor_cost FROM cutjob WHERE jobNumber IN (SELECT jobNumber FROM assign WHERE AssemblyId = 110)  
131 ) AS labor_costs;  
132
```

Results	
	total_labor_cost
1	1824

supply costs associated with the assembly:

```
133 --total supply costs associated with the assembly
134
135 SELECT
136     SUM(sup_cost) AS total_supply_cost
137     FROM
138     assemblyaccount
139     WHERE
140         accountnumber IN (SELECT Account_Number FROM Record_Cost1 WHERE Assembly_id = 110);
141
...
...
ist
```

Results Messages

	total_supply_cost
1	4000

sum the labor costs from `fitjob`, `paintjob`, and `cutjob` tables and the supply costs from the `assemblyaccount` table.

```
143
144     SELECT
145         (SELECT SUM(labortime * 12)
146             FROM (SELECT labortime FROM fitjob WHERE jobNumber IN (SELECT jobNumber FROM assign WHERE AssemblyId = 110)
147                     UNION ALL
148                     SELECT labortime FROM paintjob WHERE jobNumber IN (SELECT jobNumber FROM assign WHERE AssemblyId = 110)
149                     UNION ALL
150                     SELECT labortime FROM cutjob WHERE jobNumber IN (SELECT jobNumber FROM assign WHERE AssemblyId = 110)
151                 ) AS labor_costs
152
153     +
154         (SELECT SUM(sup_cost)
155             FROM assemblyaccount
156             WHERE accountnumber IN (SELECT Account_Number FROM Record_Cost1 WHERE Assembly_id = 110)
157
158     AS total_cost;
```

Results Messages

	total_cost
1	5824

query 10)

```
160
161
162 SELECT
163     SUM(labor_time) AS total_labor_time
164 FROM (
165     SELECT f.labortime AS labor_time
166     FROM fitjob f
167     INNER JOIN assign a ON f.jobNumber = a.jobNumber
168     INNER JOIN supervise s ON a.processId = s.processId
169     INNER JOIN Job j ON f.jobNumber = j.jobNumber
170     WHERE s.departmentnumber = 110 AND j.dateofjobcompleted = '2023-04-15'
171     UNION ALL
172     SELECT p.labortime |
173     FROM paintjob p
174     INNER JOIN assign a ON p.jobNumber = a.jobNumber
175     INNER JOIN supervise s ON a.processId = s.processId
176     INNER JOIN Job j ON p.jobNumber = j.jobNumber
177     WHERE s.departmentnumber = 110 AND j.dateofjobcompleted = '2023-04-15'
178     UNION ALL
179     SELECT c.labortime
180     FROM cutjob c
181     INNER JOIN assign a ON c.jobNumber = a.jobNumber
182     INNER JOIN supervise s ON a.processId = s.processId
183     INNER JOIN Job j ON c.jobNumber = j.jobNumber
184     WHERE s.departmentnumber = 110 AND j.dateofjobcompleted = '2023-04-15'
185 ) AS combined_labor_times;
```

Results Messages

	total_labor_time
1	152

query11)

```
188 --query 11
189
190 SELECT
191     p.processId,
192     p.processData,
193     d.departmentnumber,
194     d.departmentdata,
195     j.dateofjobcommenced
196 FROM
197     passthrough pt
198 INNER JOIN
199     Process p ON pt.processId = p.processId
200 INNER JOIN
201     assign a ON pt.processId = a.processId AND pt.AssemblyId = a.AssemblyId
202 INNER JOIN
203     Job j ON a.jobNumber = j.jobNumber
204 LEFT JOIN
205     supervise s ON p.processId = s.processId
206 LEFT JOIN
207     department d ON s.departmentnumber = d.departmentnumber
208 WHERE
209     pt.AssemblyId = 110
210 ORDER BY
211     j.dateofjobcommenced;
```

Results Messages

	processId	processData	departmentnumber	departmentdata	dateofjobcommenced
1	1234	new process	110	Computer Science	2023-04-01

query 12)

```
214    --query 12:  
215  
216    SELECT cname  
217    FROM customer  
218    WHERE category BETWEEN 1 AND 10  
219    ORDER BY cname;  
220
```

Results **Messages**

	cname	▼
1	Customer 110	
2	ferial	

query 13)

```
---  
221    --query 13 :  
222  
223    DELETE FROM cutjob  
224    WHERE jobNumber BETWEEN 100 AND 200;  
225    |  
226
```

Messages

7:52:18 PM Started executing query at Line 222
(0 rows affected)
Total execution time: 00:00:00.142

query 14)

```
227 --query 14:  
228  
229 UPDATE paintjob  
230 SET color = 'yellow'  
231 WHERE jobNumber = 777;  
232
```

Messages

7:56:12 PM Started executing query at Line 228
(1 row affected)
Total execution time: 00:00:00.103

	jobNumber	labortime	color	amountoftime
1	777	123	yellow	123

all tables:

The screenshot shows the SSMS interface with the following details:

- Object Explorer:** On the left, it shows the database structure under "naj002-sql-server.database.windows.net". It lists several tables such as account, Assembly, assemblyaccount, assign, customer, cutjob, department, departmentaccount, fit, fitjob, job, movie_night, order1, paint, paintjob, passthrough, process, processaccount, record, record_assembly_cost, record_cost2, record_dept_cost, record_process_cost, supervise, Transaction1, update1, and Dropped Ledger Tables.
- Results Grid:** The main area displays the results of a query. The first part of the query is:

```
1 select * from account  
2 SELECT * FROM Assembly  
3 SELECT * FROM assemblyaccount
```

The results show account numbers 1 through 18 with their corresponding dates of account creation.

accountnumber	dateofaccount
1	2020-09-09
2	2020-09-09
3	2023-05-04
4	2020-05-05
5	2020-09-09
6	2021-03-04
7	1983-03-02
8	2012-02-03
9	2020-03-03
10	2015-03-03
11	2015-03-03

The second part of the query is:

```
1 accountnumber v dateordered v AssemblyDetails v  
2 SELECT * FROM ordered  
3 SELECT * FROM AssemblyDetails
```

The results show assembly details for accounts 1 through 18.

accountnumber	dateordered	AssemblyDetails
1	2020-02-03	new
2	2020-10-10	good
3	2023-04-04	nice
4	2021-02-08	bad
5	2021-02-08	test
6	1998-03-03	nice nice
7	1876-09-09	test
8	2020-09-09	perfect
9	2021-06-06	awful
10	1987-09-09	bad

The third part of the query is:

```
1 accountnumber v sup_cost v  
2 SELECT * FROM sup  
3 SELECT * FROM cost
```

The results show supplier costs for accounts 1 through 555.

accountnumber	sup_cost
1	0
2	0
3	0
4	0
5	0
6	0
7	0
8	4000

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CONNECTIONS ... SQLQuery_1.sql - disconnected SQLQuery_2 - naji00...j0002) 3 SQLQuery_3 - naji00...j0002) 3 task4Tables1.sql - disconnected 1

Run Cancel Disconnect Change Database: cs-dsa-4513-sql-db Estimated Plan Enable Actual Plan Parse

```
1 select * from assign
2 SELECT * FROM customer
3 SELECT * FROM cut
```

Results Messages

AssemblyId	processId	jobNumber
1	2	15
2	118	1234
		777

crname	caddress	category
melika	lamp	6
nike	kirk	9
mohammad	Lindsay	2
naseem	boyd	5
nana	feri	2
navid	canada	8
nazi	canada	7
nazliq	boyd	1
niki	dof	2
niko	mirdamad	5
nokhod	TEH	2
titi	fofo	3
zahra	Lindsay	4

cuttingtype	machinetype	processId
good	machine	18
cut	cutter	15
cutting type	machine type	16
type1	type2	17
new Cutting Type	new Machine Type	45
new Cutting Type	new Machine Type	1234

AZURE Restricted Mode 4 0

Ln 3, Col 18 Spaces: 4 UTF-8 LF 38 rows MSSQL 00:00:00 naji002-sql-server.database.windows.net : cs-dsa-4513-sql-db

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CONNECTIONS ... SQLQuery_1.sql - disconnected SQLQuery_2 - naji00...j0002) 3 SQLQuery_3 - naji00...j0002) 3 task4Tables1.sql - disconnected 1

Run Cancel Disconnect Change Database: cs-dsa-4513-sql-db Estimated Plan Enable Actual Plan Parse

```
1 select * from cutjob
2 SELECT * FROM department
3
```

Results Messages

jobNumber	labortime	material	amountoftime	typeofmachine
1	7	120	Steel	60
2	8	120	Steel	60

departmentnumber	departmentdata
1	118 Computer Science
2	112 mechanic
3	138 CS
4	167 math
5	342 biomedical
6	543 algebra
7	765 psychology

AZURE Restricted Mode 4 0

Ln 3, Col 1 Spaces: 4 UTF-8 LF 9 rows MSSQL 00:00:00 naji002-sql-server.database.windows.net : cs-dsa-4513-sql-db

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CONNECTIONS ... [SQLQuery_fer1.sql - disconnected](#) [SQLQuery_2 - naji00...j0002](#) [SQLQuery_1 - naji00...j0002](#) 3 [task4Tables1.sql - disconnected](#) 1

Servers [naji0002-sql-server.database.windows.net](#) [\[New Connection\]](#) [\[New Server\]](#) [\[Import\]](#) [\[Export\]](#) [\[Edit\]](#) [\[Delete\]](#)

Tables [dbo.account](#) [dbo.Assembly](#) [dbo.assemblyaccount](#) [dbo.assign](#) [dbo.customer](#) [dbo.out](#) [dbo.cutjob](#) [dbo.department](#) [dbo.departmentaccount](#) [dbo.fit](#) [dbo.fijob](#) [dbo.job](#) [dbo.movie_night](#) [dbo.order1](#) [dbo.paint](#) [dbo.paintjob](#) [dbo.passthrough](#) [dbo.process](#) [dbo.processaccount](#) [dbo.record](#) [dbo.record_assembly_cost](#) [dbo.record_cost2](#) [dbo.record_dept_cost](#) [dbo.record_process_cost](#) [dbo.supervise](#) [dbo.Transaction1](#) [dbo.update1](#) [Dropped Ledger Tables](#) [Views](#) [Synonyms](#) [Programmability](#) [External Resources](#) [Storage](#) [Security](#)

Results **Messages**

```
1 select * from fit
2 SELECT * FROM departmentaccount
3
```

fittype	processId
1	close
2	type1
3	type3
4	new
5	hgf
6	ss
7	dsa
8	type
9	bad
10	new
11	grd

accountnumber	sup_cost
1	0
2	0
3	0
4	550

Ln 1, Col 18 Spaces: 4 UTF-8 LF 15 rows MSSQL 00:00:00 naji0002-sql-server.database.windows.net : cs-dsa-4513-sql-db

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Servers [naji0002-sql-server.database.windows.net](#) [\[New Connection\]](#) [\[New Server\]](#) [\[Import\]](#) [\[Export\]](#) [\[Edit\]](#) [\[Delete\]](#)

Tables [dbo.account](#) [dbo.Assembly](#) [dbo.assemblyaccount](#) [dbo.assign](#) [dbo.customer](#) [dbo.out](#) [dbo.cutjob](#) [dbo.department](#) [dbo.departmentaccount](#) [dbo.fit](#) [dbo.fijob](#) [dbo.job](#) [dbo.movie_night](#) [dbo.order1](#) [dbo.paint](#) [dbo.paintjob](#) [dbo.passthrough](#) [dbo.process](#) [dbo.processaccount](#) [dbo.record](#) [dbo.record_assembly_cost](#) [dbo.record_cost2](#) [dbo.record_dept_cost](#) [dbo.record_process_cost](#) [dbo.supervise](#) [dbo.Transaction1](#) [dbo.update1](#) [Dropped Ledger Tables](#) [Views](#) [Synonyms](#) [Programmability](#) [External Resources](#) [Storage](#) [Security](#)

Results **Messages**

```
1 select * from fitjob
2 SELECT * FROM Job
3 SELECT * FROM order1
```

jobNumber	laborTime
1	23
2	21

jobNumber	dateofjobcommenced	dateofjobcompleted	job_type	laborTime
1	2012-09-09	2021-09-09	1	54
2	2013-09-09	2020-09-09	1	43
3	2028-09-09	2021-09-09	2	23
4	2018-09-09	2021-08-08	2	65
5	2019-09-09	2026-09-09	2	65
6	2013-09-09	2028-05-06	2	32
7	2018-04-04	2023-09-09	3	23
8	2017-04-04	2021-09-09	3	21
9	2023-09-09	NULL	NULL	NULL
10	2023-04-01	2023-04-15	NULL	NULL

AssemblyId	cname
1	ferial
2	john
3	naem
4	navid
5	nazi
6	zahra
7	naem
8	nazi
9	jakie
10	ferial
11	navid
12	Customer 118

Ln 3, Col 21 Spaces: 4 UTF-8 LF 24 rows MSSQL 00:00:00 naji0002-sql-server.database.windows.net : cs-dsa-4513-sql-db

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CONNECTIONS ... [SQLQuery_1.sql - disconnected](#) [SQLQuery_2 - naij00...j0002](#) [SQLQuery_1 - naij00...j0002](#) 3 [task4Tables1.sql - disconnected](#) 1

Run [Cancel](#) [Disconnect](#) [Change](#) Database: [cs-dsa-4513-sql-db](#) [Estimated Plan](#) [Enable Actual Plan](#) [Parse](#)

```

1 select * from paint
2 SELECT * FROM paintjob
3 SELECT * FROM passthrough

```

Results **Messages**

painttype	paintingmethod	processId
tt	dfs	98
spray	jsk	110
drg	ddg	324
spray	spray	654
new Paint Type	new Painting Method	1234
good	hdf	4323

jobNumber	labortime	color	colorvolume
1	5	orange	23
2	6	blue	2
3	7	green	3
4	8	red	4

AssemblyId	processId
1	2
2	2
3	3
4	4
5	4
6	4
7	5
8	6
9	6
10	7
11	7
12	8
13	9
14	9
15	10
16	11
17	110
	1234

AZURE

Restricted Mode 4 ▲ 0

Ln 3, Col 26 Spaces: 4 UTF-8 LF 27 rows MSSQL 00:00:00 naij0002-sql-server.database.windows.net : cs-dsa-4513-sql-db

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CONNECTIONS ... [SQLQuery_1.sql - disconnected](#) [SQLQuery_2 - naij00...j0002](#) [SQLQuery_1 - naij00...j0002](#) 3 [task4Tables1.sql - disconnected](#) 1

Run [Cancel](#) [Disconnect](#) [Change](#) Database: [cs-dsa-4513-sql-db](#) [Estimated Plan](#) [Enable Actual Plan](#) [Parse](#)

```

1 select * from Process
2 SELECT * FROM processaccount
3

```

Results **Messages**

processId	processData
1	xts
2	nice
3	good
4	look
5	nothing
6	nice
7	bad
8	dfr
9	fds
10	test test
11	bad
12	test
13	110
14	sd
15	testtest
16	ds

accountnumber	sup_cost
1	0
2	0
3	0
4	0
5	0
6	2500

AZURE

Restricted Mode 4 ▲ 0

Ln 3, Col 1 Spaces: 4 UTF-8 LF 27 rows MSSQL 00:00:00 naij0002-sql-server.database.windows.net : cs-dsa-4513-sql-db

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CONNECTIONS ... [SQLQuery_1.sql - disconnected](#) [SQLQuery_2 - naij00...j0002](#) 1 • [SQLQuery_3 - naij00...j0002](#) 3 • [task4tables1.sql - disconnected](#) 1 •

SERVERS [naij0002-sql-server.database.windows.net](#) ... [Tables](#) [Views](#) [Synonyms](#) [Programmability](#) [External Resources](#) [Storage](#) [Security](#)

Tables

- > [dbo.account](#)
- > [dbo.Assembly](#)
- > [dbo.assemblyaccount](#)
- > [dbo.assign](#)
- > [dbo.customer](#)
- > [dbo.out](#)
- > [dbo.cutjob](#)
- > [dbo.department](#)
- > [dbo.departmentaccount](#)
- > [dbo.fit](#)
- > [dbo.fjjob](#)
- > [dbo.job](#)
- > [dbo.movie_night](#)
- > [dbo.order1](#)
- > [dbo.paint](#)
- > [dbo.paintjob](#)
- > [dbo.passthrough](#)
- > [dbo.process](#)
- > [dbo.processaccount](#)
- > [dbo.record](#)
- > [dbo.record_assembly_cost](#)
- > [dbo.Record_cost2](#)
- > [dbo.record_dept_cost](#)
- > [dbo.record_process_cost](#)
- > [dbo.supervise](#)
- > [dbo.Transaction1](#)
- > [dbo.update1](#)
- > [Dropped Ledger Tables](#)
- > [Views](#)
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- > [Storage](#)
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RESULTS [Messages](#)

Account_Number	Dep_number
1	555
2	8
3	9
4	11
5	118

Account_Number	Assembly_id
1	7
2	8
3	11
4	17
5	555

Ln 2, Col 36 Spaces: 4 UTF-8 LF 6 rows MSSQL 00:00:00 naij0002-sql-server.database.windows.net : cs-dsa-4513-sql-db

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CONNECTIONS ... [SQLQuery_1.sql - disconnected](#) [SQLQuery_2 - naij00...j0002](#) 1 • [SQLQuery_3 - naij00...j0002](#) 3 • [task4tables1.sql - disconnected](#) 1 •

SERVERS [naij0002-sql-server.database.windows.net](#) ... [Tables](#) [Views](#) [Synonyms](#) [Programmability](#) [External Resources](#) [Storage](#) [Security](#)

Tables

- > [dbo.account](#)
- > [dbo.Assembly](#)
- > [dbo.assemblyaccount](#)
- > [dbo.assign](#)
- > [dbo.customer](#)
- > [dbo.out](#)
- > [dbo.cutjob](#)
- > [dbo.department](#)
- > [dbo.departmentaccount](#)
- > [dbo.fit](#)
- > [dbo.fjjob](#)
- > [dbo.job](#)
- > [dbo.movie_night](#)
- > [dbo.order1](#)
- > [dbo.paint](#)
- > [dbo.paintjob](#)
- > [dbo.passthrough](#)
- > [dbo.process](#)
- > [dbo.processaccount](#)
- > [dbo.record](#)
- > [dbo.record_assembly_cost](#)
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- > [dbo.record_dept_cost](#)
- > [dbo.record_process_cost](#)
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RESULTS [Messages](#)

account_num	process_id
1	13
2	14
3	15
4	555

account_num	dept_num
1	118
2	112
3	112

Ln 2, Col 34 Spaces: 4 UTF-8 LF 7 rows MSSQL 00:00:00 naij0002-sql-server.database.windows.net : cs-dsa-4513-sql-db

```

    Restricted Mode is intended for safe code browsing. Trust this window to enable all features. Manage Learn More
    CONNECTIONS ... SQLQuery_1 - disconnected SQLQuery_2 - naji00...j[0002] SQLQuery_1 - naji00...j[0002] 3 task4Tables1.sql - disconnected 1
    SERVERS naji0002-sql-server.database.windows.net ...
        Tables
            > dbo.account
            > dbo.Assembly
            > dbo.assemblyaccount
            > dbo.assign
            > dbo.customer
            > dbo.order
            > dbo.cutjob
            > dbo.department
            > dbo.departmentaccount
            > dbo.fit
            > dbo.fjob
            > dbo.job
            > dbo.movie_night
            > dbo.order1
            > dbo.paint
            > dbo.paintjob
            > dbo.passthrough
            > dbo.process
            > dbo.processaccount
            > dbo.record
            > dbo.record_assembly_cost
            > dbo.Record_cost2
            > dbo.record_dept_cost
            > dbo.record_process_cost
            > dbo.supervise
            > dbo.Transaction1
            > dbo.update1
            > Dropped Ledger Tables
            > Views
            > Synonyms
            > Programmability
            > External Resources
            > Storage
            > Security
    AZURE
    Restricted Mode 4 0
    Run Cancel Disconnect Change Database: cs-dsa-4513-sql-db Estimated Plan Enable Actual Plan Parse
    1 select * from Transaction1
    2 SELECT * FROM supervise
    3

    Results Messages
    transactionnumber sup_cost
    1 555 500

    processId departmentnumber departmentdata
    1 10 342 biomedical
    2 15 167 math
    3 16 112 mechanic
    4 17 138 CS
    5 78 118 math
    6 99 118 mechanic
    7 245 110 Computer Science
    8 324 118 computer science
    9 654 765 psychology
    10 1234 110 NULL

```

Ln 1, Col 27 Spaces: 4 UTF-8 LF 11 rows MSSQL 00:00:00 naji0002-sql-server.database.windows.net : cs-dsa-4513-sql-db

Task5 and 6.

all queries in Azure SQL:

--1--

```
INSERT INTO customer (cname, caddress, category)
VALUES ('ferial', 'tehran', 3);
```

--2--

```
INSERT INTO department (departmentnumber, departmentdata)
VALUES (110, 'Computer Science');
```

--3--

```
INSERT INTO Process (processId, processData)
```

```
VALUES (1234, 'new process');
```

```
INSERT INTO fit (fittype, processId)
```

```
VALUES ('new', 1234);
```

```
INSERT INTO paint (painttype, paintingmethod, processId)
```

```
VALUES ('new Paint Type', 'new Painting Method', 1234);
```

```
INSERT INTO cut (cuttingtype, machinetype, processId)
```

```
VALUES ('new Cutting Type', 'new Machine Type', 1234);
INSERT INTO supervise (processId, departmentnumber)
VALUES (1234, 110);
```

--4

```
INSERT INTO Assembly (AssemblyId, address, dateordered, AssemblyDetails)
VALUES (110, 'tehran', 2020-10-10 , 'new Assembly Details');
```

```
INSERT INTO customer (cname, caddress, category)
VALUES ('Customer 110', '110 Customer Address',1);
```

```
INSERT INTO order1 (AssemblyId, cname)
VALUES (110, 'Customer 110');
```

```
INSERT INTO passthrough (AssemblyId, processId)
VALUES (110, '1234');
```

--5

```
INSERT INTO account (accountnumber, dateofaccount)
VALUES (555, '2023-05-01');
```

-link with process

```
INSERT INTO record_cost3 (account_num, process_id)
VALUES (555, 1234);
```

```
INSERT INTO processaccount (accountnumber, sup_cost)
VALUES (555, 1500.00);
```

-link with assembly

```
INSERT INTO assemblyaccount (accountnumber, sup_cost)
VALUES (555, 3000.00);
```

```
INSERT INTO Record_Cost1 (Account_Number, Assembly_id)
VALUES (555, 110);
```

--

```
INSERT INTO departmentaccount (accountnumber, sup_cost)
VALUES (555, 4500.00);
```

```
INSERT INTO Record_cost2 (Account_Number, Dep_number) VALUES (555, 110);
DELETE FROM assemblyaccount WHERE accountnumber = 1234 AND sup_cost = 3000;
DELETE FROM departmentaccount WHERE accountnumber = 1234 AND sup_cost = 5000;
```

--6

```
INSERT INTO Job (jobNumber, dateofjobcommenced)
VALUES (777, '2023-04-01');
```

```
INSERT INTO assign (AssemblyId, processId, jobNumber)
VALUES (110, '1234', 777);
```

--7

```
UPDATE Job
SET dateofjobcompleted = '2023-04-15'
WHERE jobNumber = 777;
```

```
INSERT INTO fitjob (jobNumber, labortime)
VALUES (777, 14);
```

```
INSERT INTO cutjob (jobNumber, labortime, color, amountoftime, typeofmachine)
VALUES (777, 15 , 'red', 12 , 'newtype');
```

```
insert into paintjob (jobNumber, labortime, color, amountoftime)
```

```
values (777, 123,'blue', 567)
```

--8

```
INSERT INTO Transaction1 (transactionnumber, sup_cost)
VALUES (555, 500);
```

```
UPDATE departmentaccount
SET sup_cost = sup_cost + 500
WHERE accountnumber = 555;
```

```
UPDATE assemblyaccount
SET sup_cost = sup_cost + 500
WHERE accountnumber = 555;
```

```
UPDATE processaccount
SET sup_cost = sup_cost + 500
WHERE accountnumber = 555;
```

--9

```
SELECT
    SUM(labor_cost) AS total_labor_cost
FROM (
    SELECT labortime * 12 AS labor_cost FROM fitjob WHERE jobNumber IN (SELECT jobNumber FROM assign
    WHERE AssemblyId = 110)
    UNION ALL
    SELECT labortime * 12 AS labor_cost FROM paintjob WHERE jobNumber IN (SELECT jobNumber FROM assign
    WHERE AssemblyId = 110)
    UNION ALL
    SELECT labortime * 12 AS labor_cost FROM cutjob WHERE jobNumber IN (SELECT jobNumber FROM assign
    WHERE AssemblyId = 110)
) AS labor_costs;
```

--total supply costs associated with the assembly

```

SELECT
    SUM(sup_cost) AS total_supply_cost
FROM
    assemblyaccount
WHERE
    accountnumber IN (SELECT Account_Number FROM Record_Cost1 WHERE Assembly_id = 110);

```

```

SELECT
    (SELECT SUM(labortime * 12)
     FROM (SELECT labortime FROM fitjob WHERE jobNumber IN (SELECT jobNumber FROM assign WHERE
AssemblyId = 110)
           UNION ALL
           SELECT labortime FROM paintjob WHERE jobNumber IN (SELECT jobNumber FROM assign WHERE
AssemblyId = 110)
           UNION ALL
           SELECT labortime FROM cutjob WHERE jobNumber IN (SELECT jobNumber FROM assign WHERE
AssemblyId = 110)
           ) AS labor_costs
    )
    +
    (SELECT SUM(sup_cost)
     FROM assemblyaccount
     WHERE accountnumber IN (SELECT Account_Number FROM Record_Cost1 WHERE Assembly_id = 110)
    )
AS total_cost;

```

--10

```

SELECT
    SUM(labor_time) AS total_labor_time
FROM (
    SELECT f.labortime AS labor_time
    FROM fitjob f
    INNER JOIN assign a ON f.jobNumber = a.jobNumber
    INNER JOIN supervise s ON a.processId = s.processId
)

```

```

INNER JOIN Job j ON f.jobNumber = j.jobNumber
WHERE s.departmentnumber = 110 AND j.dateofjobcompleted = '2023-04-15'
UNION ALL
SELECT p.labortime
FROM paintjob p
INNER JOIN assign a ON p.jobNumber = a.jobNumber
INNER JOIN supervise s ON a.processId = s.processId
INNER JOIN Job j ON p.jobNumber = j.jobNumber
WHERE s.departmentnumber = 110 AND j.dateofjobcompleted = '2023-04-15'
UNION ALL
SELECT c.labortime
FROM cutjob c
INNER JOIN assign a ON c.jobNumber = a.jobNumber
INNER JOIN supervise s ON a.processId = s.processId
INNER JOIN Job j ON c.jobNumber = j.jobNumber
WHERE s.departmentnumber = 110 AND j.dateofjobcompleted = '2023-04-15'
) AS combined_labor_times;

```

--query 11

```

SELECT
    p.processId,
    p.processData,
    d.departmentnumber,
    d.departmentdata,
    j.dateofjobcommenced
FROM
    passthrough pt
INNER JOIN
    Process p ON pt.processId = p.processId
INNER JOIN
    assign a ON pt.processId = a.processId AND pt.AssemblyId = a.AssemblyId
INNER JOIN
    Job j ON a.jobNumber = j.jobNumber
LEFT JOIN
    supervise s ON p.processId = s.processId

```

LEFT JOIN

department d **ON** s.departmentnumber = d.departmentnumber

WHERE

pt.AssemblyId = **110**

ORDER BY

j.dateofjobcommenced;

--query 12:

```
SELECT cname
FROM customer
WHERE category BETWEEN 1 AND 10
ORDER BY cname;
```

--query 13 :

```
DELETE FROM cutjob
WHERE jobNumber BETWEEN 100 AND 200;
```

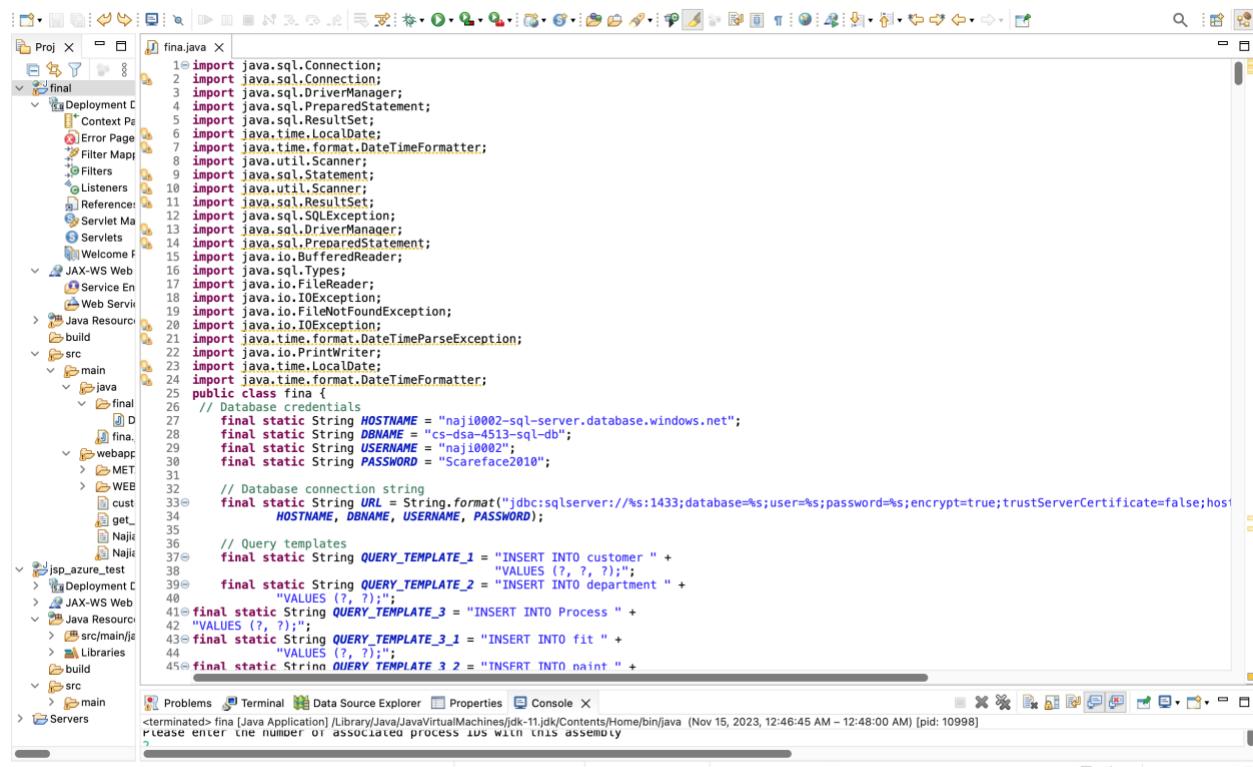
--query 14:

```
UPDATE paintjob
SET color = 'yellow'
WHERE jobNumber = 777;
```

In JAVA:

perform 5 queries for each type:

java code:



The screenshot shows the Eclipse IDE interface with a Java project named "fina" open. The code editor displays a Java class named "fina" with static strings for database credentials and query templates. The project structure on the left includes various deployment configurations, JAX-WS Web services, Java resources, and source code files like "fina.java", "fina.html", and "fina.css". The bottom status bar indicates the code was last saved at 12:48:00 AM on November 15, 2023.

```
1 import java.sql.Connection;
2 import java.sql.DriverManager;
3 import java.sql.PreparedStatement;
4 import java.sql.ResultSet;
5 import java.sql.Time;
6 import java.time.LocalDate;
7 import java.time.format.DateTimeFormatter;
8 import java.util.Scanner;
9 import java.sql.Statement;
10 import java.util.Scanner;
11 import java.sql.ResultSet;
12 import java.sql.SQLException;
13 import java.sql.DriverManager;
14 import java.sql.PreparedStatement;
15 import java.io.BufferedReader;
16 import java.sql.Types;
17 import java.io.FileReader;
18 import java.io.IOException;
19 import java.io.FileNotFoundException;
20 import java.io.IOException;
21 import java.time.format.DateTimeParseException;
22 import java.io.PrintWriter;
23 import java.time.LocalDate;
24 import java.time.format.DateTimeFormatter;
25 public class fina {
26     // Database credentials
27     final static String HOSTNAME = "naj10002-sql-server.database.windows.net";
28     final static String DBNAME = "cs-dsa-4513-sql-db";
29     final static String USERNAME = "naj10002";
30     final static String PASSWORD = "Scareface2010";
31
32     // Database connection string
33     final static String URL = String.format("jdbc:sqlserver:// %s:1433;database=%s;user=%s;password=%s;encrypt=true;trustServerCertificate=false;hostName=%s", HOSTNAME, DBNAME, USERNAME, PASSWORD);
34
35     // Query templates
36     final static String QUERY_TEMPLATE_1 = "INSERT INTO customer " +
37         "VALUES (?, ?, ?);";
38     final static String QUERY_TEMPLATE_2 = "INSERT INTO department " +
39         "VALUES (?, ?);";
40     final static String QUERY_TEMPLATE_3 = "INSERT INTO Process " +
41         "VALUES (?, ?);";
42     final static String QUERY_TEMPLATE_3_1 = "INSERT INTO fit " +
43         "VALUES (?, ?);";
44     final static String QUERY_TEMPLATE_3_2 = "INSFRINT INTO paint " +
```

Proj X

```

final static String QUERY_TEMPLATE_1 = "INSERT INTO cut " +
VALUES (?, ?, ?);"
final static String QUERY_TEMPLATE_2 = "INSERT INTO supervise " +
VALUES (?, ?, ?);"
final static String QUERY_TEMPLATE_3 = "INSERT INTO assembly " +
VALUES (?, ?, ?);"
final static String QUERY_TEMPLATE_4 = "INSERT INTO order1 " +
VALUES (?, ?, ?);"
final static String QUERY_TEMPLATE_5 = "INSERT INTO passthrough " +
VALUES (?, ?, ?);"
final static String QUERY_TEMPLATE_6 = "INSERT INTO account " +
VALUES (?, ?, ?);"
final static String QUERY_TEMPLATE_7 = "INSERT INTO departmentaccount " +
VALUES (?, ?, ?);"
final static String QUERY_TEMPLATE_8 = "INSERT INTO assemblyaccount " +
VALUES (?, ?, ?);"
final static String QUERY_TEMPLATE_9 = "INSERT INTO processaccount " +
VALUES (?, ?, ?);"
final static String QUERY_TEMPLATE_10 = "INSERT INTO record_dept_cost " +
VALUES (?, ?, ?);"
final static String QUERY_TEMPLATE_11 = "INSERT INTO record_assembly_cost " +
VALUES (?, ?, ?);"
final static String QUERY_TEMPLATE_12 = "INSERT INTO record_process_cost " +
VALUES (?, ?, ?);"
final static String QUERY_TEMPLATE_13 = "UPDATE job " +
SET datefjobcompleted = (?), job_type = (?), labortime = (?) +
WHERE jobNumber = (?);"
final static String QUERY_TEMPLATE_14 = "INSERT into cutjob " +
VALUES (? ,? ,? ,?);"
final static String QUERY_TEMPLATE_15 = "INSERT into paintjob " +
VALUES (? ,? ,? ,?);"
final static String QUERY_TEMPLATE_16 = "INSERT into fitjob " +
VALUES (? ,? ,? ,?);"
final static String QUERY_TEMPLATE_17 = "INSERT into transaction1 " +
VALUES (? ,? );"
final static String QUERY_TEMPLATE_18 = "INSERT into record " +
VALUES (? ,? );"
final static String QUERY_TEMPLATE_19 = "SELECT Assemblyid, processId from assign " +

```

Problems Terminal Data Source Explorer Properties Console

<terminated> fina [Java Application] /Library/Java/JavaVirtualMachines/jdk-11.jdk/Contents/Home/bin/java (Nov 15, 2023, 12:46:45 AM - 12:48:00 AM) [pid: 10998]

Please enter the number of associated process 105 with this assembly

Writable Smart Insert 448 : 11 : 18421

Proj X

```

final static String QUERY_TEMPLATE_8_1 = "SELECT departmentnumber FROM supervise " +
"WHERE processid=(?);"
final static String QUERY_TEMPLATE_8_2 = "SELECT account_num FROM record_dept_cost " +
"WHERE dept_num=(?);"
final static String QUERY_TEMPLATE_8_3 = "SELECT account_num FROM record_assembly_cost " +
"WHERE assembly_id=(?);"
final static String QUERY_TEMPLATE_8_4 = "SELECT account_num FROM record_process_cost " +
"WHERE process_id=(?);"
final static String QUERY_TEMPLATE_8_5 = "SELECT departmentnumber FROM departmentaccount " +
"WHERE accountnumber=(?);"
final static String QUERY_TEMPLATE_8_6 = "SELECT sup_cost FROM assemblyaccount " +
"WHERE accountnumber=(?);"
final static String QUERY_TEMPLATE_8_7 = "SELECT sup_cost FROM processaccount " +
"WHERE accountnumber=(?);"
final static String QUERY_TEMPLATE_8_8 = "UPDATE departmentaccount " +
"SET sup_cost = (?)" +
"Where accountnumber = (?);"
final static String QUERY_TEMPLATE_8_9 = "UPDATE processaccount " +
"SET sup_cost = (?)" +
"Where accountnumber = (?);"
final static String QUERY_TEMPLATE_8_10 = "UPDATE assemblyaccount " +
"SET sup_cost = (?)" +
"Where accountnumber = (?);"
final static String QUERY_TEMPLATE_8_11 = "UPDATE departmentaccount " +
"SET sup_cost = (?)" +
"Where accountnumber = (?);"
final static String QUERY_TEMPLATE_8_12 = "UPDATE processaccount " +
"SET sup_cost = (?)" +
"Where accountnumber = (?);"
final static String QUERY_TEMPLATE_8_13 = "UPDATE assemblyaccount " +
"SET sup_cost = (?)" +
"Where accountnumber = (?);"
final static String QUERY_TEMPLATE_8_14 = "UPDATE paintjob " +
"SET color = (?)" +
"Where jobnumber = (?);"
final static String PROMPT =
"\nPlease select one of the options below: \n" +
"1) Enter new customer; \n" +

```

Problems Terminal Data Source Explorer Properties Console

<terminated> fina [Java Application] /Library/Java/JavaVirtualMachines/jdk-11.jdk/Contents/Home/bin/java (Nov 15, 2023, 12:46:45 AM - 12:48:00 AM) [pid: 10998]

Please enter the number of associated process 105 with this assembly

Writable Smart Insert 448 : 11 : 18421

```

135 "1) Enter new customer: \n" +
136 "2) Enter a new department; \n" +
137 "3) Enter a new Process; \n" +
138 "4) Enter a new Assembly; \n" +
139 "5) Enter a new Account Number:\n" +
140 "6) Enter a new Job:\n" +
141 "7) At the completion of a job, enter the date it completed: \n" +
142 "8) Enter a transaction-no and its sup-cost and update all the costs: \n" +
143 "9) Retrieve the total cost incurred on an assembly-id \n" +
144 "10)Retrieve total labor time within a Department for a given day: \n" +
145 "11)Retrieve the process through which a given assembly-id has passed: \n" +
146 "12)Retrieve the customers (in name order) whose category is in a given range: \n" +
147 "13)Delete all cut-jobs whose job-no is in a given range: \n" +
148 "14)Change the color of a given paint job\n" +
149 "15)Import: enter new customers from a file: \n" +
150 "16)Export: Retrieve the customers \n" +
151 "17) Quit!";
152
153@public static void main(String[] args) throws SQLException {
154     System.out.println("WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM");
155
156     final Scanner sc = new Scanner(System.in); // Scanner is used to collect the user input
157     String option = ""; // Initialize user option selection as nothing
158     while (!option.equals("3")) { // As user for options until option 3 is selected
159         System.out.println(PROMPT); // Print the available options
160         option = sc.next(); // Read in the user option selection
161
162         switch (option) { // Switch between different options
163             case "1": // Insert a new student option
164                 // Collect the new student data from the user
165                 System.out.print("Please enter customer name:");
166                 final String cname = sc.nextLine(); // Read in the user input of student ID
167
168                 sc.nextLine();
169                 System.out.print("Please enter customer address:");
170                 // Preceding nextInt, nextFloat, etc. do not consume new line characters from the user input.
171                 // We call nextLine to consume that newline character, so that subsequent nextLine doesn't return nothing.
172                 //sc.nextLine();
173                 final String caddress = sc.nextLine(); // Read in user input of student First Name (white-spaces allowed).
174
175                 System.out.print("Please enter customer category:");
176                 // No need to call nextLine extra time here, because the preceding nextLine consumed the newline character.
177                 final float category = sc.nextFloat(); // Read in user input of student Last Name (white-spaces allowed).
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```

```

180 System.out.println("Connecting to the database...");
181 // Get a database connection and prepare a query statement
182 try (final Connection connection = DriverManager.getConnection(URL)) {
183     try {
184         final PreparedStatement statement = connection.prepareStatement(QUERY_TEMPLATE_1);
185         // Populate the query template with the data collected from the user
186         System.out.print(cname);
187         statement.setString(1, cname);
188         statement.setString(2, caddress);
189         statement.setFloat(3, category);
190
191         System.out.println("Dispatching the query...");
192         // Actually execute the populated query
193         final int rows_inserted = statement.executeUpdate();
194         System.out.println(String.format("Done. %d rows inserted.", rows_inserted));
195     }
196     catch (Exception e) {
197         e.printStackTrace();
198     }
199     break;
200     case "2":
201         System.out.println("Please enter department number");
202         final int departmentnumber = sc.nextInt(); // Read in the user input of student ID
203
204         //sc.nextLine();
205         System.out.print("Please enter department data:");
206         // Preceding nextInt, nextFloat, etc. do not consume new line characters from the user input.
207         // We call nextLine to consume that newline character, so that subsequent nextLine doesn't return nothing.
208         sc.nextLine();
209         final String departmentdata = sc.nextLine(); // Read in user input of student First Name (white-spaces allowed).
210
211         System.out.println("Connecting to the database...");
212         // Get a database connection and prepare a query statement
213         try (final Connection connection = DriverManager.getConnection(URL)) {
214             try {
215                 final PreparedStatement statement = connection.prepareStatement(QUERY_TEMPLATE_2);
216                 // Populate the query template with the data collected from the user
217                 statement.setInt(1, departmentnumber);
218                 statement.setString(2, departmentdata);
219
220                 System.out.println("Dispatching the query...");
221                 // Actually execute the populated query
222                 final int rows_inserted = statement.executeUpdate();
223                 System.out.println(String.format("Done. %d rows inserted.", rows_inserted));
224             }
225         }
226     }
227 }

```

The image displays two screenshots of a Java IDE interface, likely Eclipse, showing the code editor and terminal window.

Code Editor (Top Screenshot):

```

226 }
227
228 break;
229 case "3": // Insert a new process option
230     // Collect the new process data from the user
231     System.out.println("Please enter process Id:");
232     final int processId = sc.nextInt(); // Read in the user input of student ID
233     sc.nextLine();
234     System.out.println("Please enter the process Data:");
235     final String processData = sc.nextLine();
236
237     sc.nextLine();
238     System.out.println("Please enter the Supervising Department ID:");
239     final int deptnum = sc.nextInt();
240     sc.nextLine();
241     System.out.println("Please enter the Department data:");
242     final String deptData = sc.nextLine();
243
244     System.out.println("Please enter : 1. For Fit , 2. For Paint , 3. for Cut Process:");
245     final int processmodel = sc.nextInt();
246     sc.nextLine();
247     if (processmodel == 1) {
248         //Fit Process
249         System.out.println("Please enter Fit type:");
250         final String fitype = sc.nextLine();
251         sc.nextLine();
252         System.out.println("Connecting to the database...");
253         // Get a database connection and prepare a query statement
254         try (final Connection connection = DriverManager.getConnection(URL)) {
255             try {
256                 final PreparedStatement statement1 = connection.prepareStatement(QUERY_TEMPLATE_3));
257                 // Populate the query template with the data collected from the user
258                 statement1.setInt(1, processId);
259                 statement1.setString(2, processData);
260
261                 System.out.println("Dispatching the query...");
262                 // Actually execute the populated query
263                 final int rows_inserted = statement1.executeUpdate();
264                 System.out.println(String.format("Done. %d rows inserted in \"process\" table.", rows_inserted));
265             } catch (SQLException e) {
266                 e.printStackTrace();
267             }
268         } catch (SQLException e) {
269             e.printStackTrace();
270         }
271     }

```

Terminal Window (Bottom Screenshot):

```

<terminated>-fina [Java Application] /Library/Java/JavaVirtualMachines/jdk-11.jdk/Contents/Home/bin/java (Nov 15, 2023, 12:46:45 AM - 12:48:00 AM) [pid: 10998]
Please enter the number of associated process 105 with this assembly
?

```

The code in both screenshots is identical, showing a Java application named "fina" that interacts with a database to insert data based on user input. The terminal shows the application has terminated with a status of 10998.

Proj X

```

314 // Populate the query template with the data collected from the user
315 statement2.setInt(3, processId);
316 statement2.setString(1, paintype);
317 statement2.setString(2, paintingmethod);
318 System.out.println("Dispatching the query...");
319 final int rows_inserted = statement2.executeUpdate();
320 System.out.println("Executing Statement 3(2)...");
321 System.out.println(String.format("Done. %d rows inserted.", rows_inserted));
322
323 }
324
325 }
326 }
327
328 }
329
330 }
331 else {
332 // information for Cutting
333 System.out.println("Please enter the Cutting Type:");
334 final String cuttingType = sc.nextLine();
335 System.out.println("Please enter the Machine Type:");
336 final String machineType = sc.nextLine();
337 System.out.println("Connecting to the database...");
338 // Get a database connection and prepare a query statement
339 try (final Connection connection = DriverManager.getConnection(URL)) {
340
341 try {
342 final PreparedStatement statement1 = connection.prepareStatement(QUERY_TEMPLATE_3) {
343 // Populate the query template with the data collected from the user
344
345 statement1.setInt(1, processId);
346 statement1.setString(2, processData);
347
348 System.out.println("Dispatching the query...");
349 final int rows_inserted = statement1.executeUpdate();
350 System.out.println(String.format("Done. %d rows inserted in process table.", rows_inserted));
351
352 }
353 }
354
355 try {
356 final PreparedStatement statement3 = connection.prepareStatement(QUERY_TEMPLATE_3_3) {
357 // Populate the query template with the data collected from the user
358
359 }
360 }
361 }
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```

Proj X

final

```

400 System.out.println("Please enter the assembly details:");
401 final String assemblyDetails = sc.nextLine();
402
403 System.out.println("Please enter the associated Customer Name:");
404 final String assemblyCustomerName = sc.nextLine();
405
406 System.out.println("Please enter the number of associated process IDs with this assembly");
407 final int numAssemblies = sc.nextInt();
408 sc.nextLine();
409
410 int[] assemblyRep = new int[numAssemblies];
411 for (int j = 0; j < numAssemblies; j++) {
412     System.out.print("Enter the " + j + "th process ID:\n");
413     assemblyRep[j] = sc.nextInt();
414     sc.nextLine();
415 }
416
417 try (final Connection connection = DriverManager.getConnection(URL)) {
418     try (final PreparedStatement statement4 = connection.prepareStatement(QUERY_TEMPLATE_4_1)) {
419         statement4.setInt(1, assemblyId);
420         statement4.setDate(2, dateOrdered); // Set the date here
421         statement4.setString(3, assemblyDetails);
422
423         System.out.println("Dispatching the query 4(1)...");
424         final int rowsInserted = statement4.executeUpdate();
425         System.out.println(String.format("Done. %d rows inserted in Assembly table.", rowsInserted));
426     }
427
428     try (final PreparedStatement statement5 = connection.prepareStatement(QUERY_TEMPLATE_4_2)) {
429         statement5.setInt(1, assemblyId);
430         statement5.setString(2, assemblyCustomerName);
431
432         System.out.println("Dispatching the query 4(2)...");
433         final int rowsInserted = statement5.executeUpdate();
434         System.out.println(String.format("Done. %d rows inserted in order1 table.", rowsInserted));
435     }
436
437     try (final PreparedStatement statement6 = connection.prepareStatement(QUERY_TEMPLATE_4_3)) {
438         for (int i = 0; i < numAssemblies; i++) {
439             statement6.setInt(1, assemblyId);
440             statement6.setInt(2, assemblyRep[i]);
441
442             System.out.println("Dispatching the query 4(3)...");
443             final int rowsInserted = statement6.executeUpdate();
444             System.out.println(String.format("Done. %d rows inserted in passthrough table.", rowsInserted));
445         }
446     }
447     break;
448 case "5":
449     System.out.println("Enter a new Account number:");
450     final int accountNumber = sc.nextInt();
451     sc.nextLine();
452
453     System.out.println("Enter the date of account commencement (yyyy-MM-dd):");
454     String dateString = sc.nextLine();
455     java.sql.Date accountDate = java.sql.Date.valueOf(dateString);
456
457     System.out.println("Enter the account type (1, 2, 3): 1. Department Account, 2. Assembly Account, 3. Process Account:");
458     final int accountType = sc.nextInt();
459     sc.nextLine();
460
461     if (accountType == 1) {
462         System.out.println("Enter the department number associated with the account:");
463         final int deptNo = sc.nextInt();
464         sc.nextLine();
465
466         System.out.println("Connecting to the database...");
467         try (final Connection connection = DriverManager.getConnection(URL)) {
468             try (final PreparedStatement statement1 = connection.prepareStatement(QUERY_TEMPLATE_5_1)) {
469                 statement1.setInt(1, accountNumber);
470                 statement1.setDate(2, accountDate);
471                 int rowsInserted = statement1.executeUpdate();
472                 System.out.println(String.format("Done. %d rows inserted in account table.", rowsInserted));
473             }
474
475             try (final PreparedStatement statement2 = connection.prepareStatement(QUERY_TEMPLATE_5_2)) {
476                 statement2.setInt(1, accountNumber);
477                 statement2.setFloat(2, 0); // Assuming this is a placeholder for some value
478                 int rowsInserted = statement2.executeUpdate();
479                 System.out.println(String.format("Done. %d rows inserted in department account table.", rowsInserted));
480             }
481
482             try (final PreparedStatement statement3 = connection.prepareStatement(QUERY_TEMPLATE_5_5)) {
483                 statement3.setInt(1, accountNumber);
484                 statement3.setInt(2, deptNo);
485                 int rowsInserted = statement3.executeUpdate();
486                 System.out.println(String.format("Done. %d rows inserted in record dept cost table.", rowsInserted));
487             }
488         }
489     } else if (accountType == 2) {
490
491     }
492 }

```

Proj X

final

```

446 }
447 break;
448 case "5":
449 System.out.println("Enter a new Account number:");
450 final int accountNumber = sc.nextInt();
451 sc.nextLine();
452
453 System.out.println("Enter the date of account commencement (yyyy-MM-dd):");
454 String dateString = sc.nextLine();
455 java.sql.Date accountDate = java.sql.Date.valueOf(dateString);
456
457 System.out.println("Enter the account type (1, 2, 3): 1. Department Account, 2. Assembly Account, 3. Process Account:");
458 final int accountType = sc.nextInt();
459 sc.nextLine();
460
461 if (accountType == 1) {
462     System.out.println("Enter the department number associated with the account:");
463     final int deptNo = sc.nextInt();
464     sc.nextLine();
465
466     System.out.println("Connecting to the database...");
467     try (final Connection connection = DriverManager.getConnection(URL)) {
468         try (final PreparedStatement statement1 = connection.prepareStatement(QUERY_TEMPLATE_5_1)) {
469             statement1.setInt(1, accountNumber);
470             statement1.setDate(2, accountDate);
471             int rowsInserted = statement1.executeUpdate();
472             System.out.println(String.format("Done. %d rows inserted in account table.", rowsInserted));
473         }
474
475         try (final PreparedStatement statement2 = connection.prepareStatement(QUERY_TEMPLATE_5_2)) {
476             statement2.setInt(1, accountNumber);
477             statement2.setFloat(2, 0); // Assuming this is a placeholder for some value
478             int rowsInserted = statement2.executeUpdate();
479             System.out.println(String.format("Done. %d rows inserted in department account table.", rowsInserted));
480         }
481
482         try (final PreparedStatement statement3 = connection.prepareStatement(QUERY_TEMPLATE_5_5)) {
483             statement3.setInt(1, accountNumber);
484             statement3.setInt(2, deptNo);
485             int rowsInserted = statement3.executeUpdate();
486             System.out.println(String.format("Done. %d rows inserted in record dept cost table.", rowsInserted));
487         }
488     }
489 } else if (accountType == 2) {
490
491 }

```

The screenshot shows the NetBeans IDE interface with the following details:

- Project Tree:** On the left, under the "Proj X" tab, there are several projects listed:
 - fina.java**: The current file being edited.
 - JAX-WS Web**
 - Java Resource**
 - jsp_azure_test**
 - Deployment E**
 - Java Resource**
 - Servers**
- Code Editor:** The main window displays Java code for a JSP application. The code uses JDBC to interact with a database, specifically inserting rows into tables like "account table", "assembly account table", "record assembly cost table", and "process account table". It includes try-catch blocks for handling database connections and prepared statements. The code also includes logic to check if an account type is 3 and to print process IDs.
- Bottom Bar:** The bottom navigation bar includes links for Problems, Terminal, Data Source Explorer, Properties, and Console. The Console tab is active, showing the output of the terminal command: "terminated| fina [Java Application] |/Library/Java/JavaVirtualMachines/sdk-11.jdk/Contents/Home/bin/java (Nov 15, 2023, 12:46:45 AM - 12:48:00 AM) [pid: 10998] Please enter the number of associated process 105 with this assembly |".

The screenshot shows the Eclipse IDE interface with the following details:

- Project Explorer (Proj X):** Shows the project structure with a file named `fina.java` selected.
- Code Editor (fina.java):** Displays Java code for a database operation. The code uses JDBC to execute SQL statements and print results to the console. It handles cases for job numbers 5, 6, and 7, and includes logic for dispatching update queries.
- Terminal:** Shows the command-line output from running the application. It includes the Java command, the date and time of execution, and the process ID (pid: 10998). The terminal also prompts the user to enter the number of associated processes for a specific assembly ID.

```
Writable Smart Insert 448:11:18421
Proj X fina.java
556
557     try (final PreparedStatement statement3 = connection.prepareStatement(QUERY_TEMPLATE_5_7)) {
558         statement3.setInt(1, accountNumber);
559         statement3.setInt(2, processid);
560         int rowsInserted = statement3.executeUpdate();
561         System.out.println(String.format("Done. %d rows inserted in record process cost table.", rowsInserted));
562     }
563 }
564 break;
565
566 case "6":
567     System.out.println("Please enter new Job Number:");
568     final int jobNum = sc.nextInt();
569     sc.nextLine();
570
571     System.out.println("Please enter the date of job commenced (yyyy-MM-dd):");
572     String dateJobCommencedStr = sc.nextLine();
573     // Convert the date string into a java.sql.Date object
574     java.sql.Date dateJobCommenced = java.sql.Date.valueOf(dateJobCommencedStr);
575
576     System.out.println("Please enter the Process ID for this job:");
577     final int processID = sc.nextInt();
578     sc.nextLine();
579
580     System.out.println("Enter the Assembly ID of the process for this job:");
581     final int assemblyID = sc.nextInt();
582     sc.nextLine();
583
584     try (final Connection connection = DriverManager.getConnection(URL)) {
585         try (final PreparedStatement statement = connection.prepareStatement(QUERY_TEMPLATE_6_1)) {
586             statement.setInt(1, jobNum);
587
588             statement.setDate(2, dateJobCommenced); // Set the date of job commenced
589             statement.setNull(3, java.sql.Types.DATE);
590             statement.setNull(4, Types.NULL); // Set the job type
591             statement.setNull(5, Types.NULL); // Set the labor time
592
593             System.out.println("Dispatching the update query...");
594             int rows_inserted = statement.executeUpdate();
595             System.out.println(String.format("Done. %d rows updated in Job table.", rows_inserted));
596         }
597     }
598 }
```

Problems Terminal Data Source Explorer Properties Console X
terminated: fina [Java Application] /Library/Java/JavaVirtualMachines/dk11.jdk/Contents/Home/bin/java (Nov 15, 2023, 12:46:45 AM - 12:48:00 AM) [pid: 10998]
Please enter the number of associated process lns with this assembly

Proj X

fina.java

```

581     final PreparedStatement statement2 = connection.prepareStatement(QUERY_TEMPLATE_6_2)) {
582         // Populate the query template with the data collected from the user
583         statement2.setInt(1, assemblyID);
584         statement2.setInt(3, jobNum);
585         statement2.setInt(2, processID);
586         System.out.println("Dispatching the query 6(2)...");
587         // Actually execute the populated query
588         final int rows_inserted = statement2.executeUpdate();
589         System.out.println(String.format("Done. %d rows inserted in assign table..", rows_inserted));
590     }
591 }
592
593 break;
594
595
596
597
598
599
600
601 case "7":
602 System.out.println("Please enter the Job Number which is in case 6:");
603 final int jobnum = sc.nextInt();
604 sc.nextLine();
605
606 System.out.println("Please enter the date the job completed (yyyy-MM-dd):");
607 String dateJobCompletedStr = sc.nextLine();
608 java.sql.Date dateJobCompleted = java.sql.Date.valueOf(dateJobCompletedStr);
609
610
611 System.out.println("Please enter type of Job(1,2,3): 1.Cut Job, 2. Paint Job , 3.Fit Job");
612 final int type = sc.nextInt();
613 sc.nextLine();
614
615 if (type == 1)
616 {
617 System.out.println("Please enter the type of Machine :");
618 final String machinetype = sc.nextLine();
619 System.out.println(" enter the amount of time in hours:");
620 final int time = sc.nextInt();
621 sc.nextLine();
622 System.out.println("Please enter the material :");
623 final String material = sc.nextLine();
624 System.out.println("Please enter the labor time in hours:");
625 final int laborTime1 = sc.nextInt();

```

Problems Terminal Data Source Explorer Properties Console

<terminated> fina [Java Application] /Library/Java/JavaVirtualMachines/jdk-11.jdk/Contents/Home/bin/java (Nov 15, 2023, 12:46:45 AM - 12:48:00 AM) [pid: 10998]

Please enter the number of associated process 105 with this assembly

Writable Smart Insert 448 : 11 : 18421

Proj X

fina.java

```

628
629 System.out.println("Connecting to the database...");
630 // Get a database connection and prepare a query statement
631 try (final Connection connection = DriverManager.getConnection(URL)) {
632     try {
633         final PreparedStatement statement1 = connection.prepareStatement(QUERY_TEMPLATE_7_1)) {
634             // Populate the query template with the data collected from the user
635             //System.out.print(cname);
636             statement1.setDate(1, dateJobCompleted); // dateJobCompleted should be a date
637             statement1.setInt(2, type); // job_type is an integer
638             statement1.setInt(3, laborTime1); // laborTime1 is an integer
639             statement1.setInt(4, jobnum); // jobNumber is an integer
640             System.out.println("Dispatching the query 7(1)...");
641             // Actually execute the populated query
642             final int rows_inserted = statement1.executeUpdate();
643             System.out.println(String.format("Done. %d rows inserted in Job table..", rows_inserted));
644         }
645     }
646
647     try {
648         final PreparedStatement statement3 = connection.prepareStatement(QUERY_TEMPLATE_7_2)) {
649             // Populate the query template with the data collected from the user
650             //System.out.print(cname);
651             statement3.setInt(1, jobnum);
652             statement3.setInt(2, laborTime1);
653             statement3.setString(3, material);
654             statement3.setInt(4, time);
655             statement3.setString(5, machinetype);
656             System.out.println("Dispatching the query 6(3)...");
657             // Actually execute the populated query
658             final int rows_inserted = statement3.executeUpdate();
659             System.out.println(String.format("Done. %d rows inserted in cutjob table..", rows_inserted));
660         }
661     }
662 }
663
664 else if (type == 2)
665 {
666     System.out.println("Please enter the color:");
667     final String color = sc.nextLine();
668
669     System.out.println("Please enter the volume of paint :");
670     final int volume = sc.nextInt();
671     sc.nextLine();
672 }

```

Problems Terminal Data Source Explorer Properties Console

<terminated> fina [Java Application] /Library/Java/JavaVirtualMachines/jdk-11.jdk/Contents/Home/bin/java (Nov 15, 2023, 12:46:45 AM - 12:48:00 AM) [pid: 10998]

Please enter the number of associated process 105 with this assembly

Writable Smart Insert 448 : 11 : 18421

Proj X

```

672 System.out.println("Please enter the labor time in hours:");
674 final int laborTime1 = sc.nextInt();
675 sc.nextLine();
676 System.out.println("Connecting to the database...");
678 // Get a database connection and prepare a query statement
679 try (final Connection connection = DriverManager.getConnection(URL)) {
680     try {
681         final PreparedStatement statement1 = connection.prepareStatement(QUERY_TEMPLATE_7_1));
682         // Populate the query template with the data collected from the user
683         //System.out.print(cname);
684         statement1.setDate(1, dateJobCompleted); // dateJobCompleted should be a date
685         statement1.setInt(2, type); // job_type is an integer
686         statement1.setInt(3, laborTime1); // laboreTime is an integer
687         statement1.setInt(4, jobnum); // jobNumber is an integer
688         System.out.println("Dispatching the query 7(1)...");
689         // Actually execute the populated query
690         final int rowsInserted = statement1.executeUpdate();
691         System.out.println(String.format("Done. %d rows inserted in Job table..", rowsInserted));
692     }
693     try {
694         final PreparedStatement statement3 = connection.prepareStatement(QUERY_TEMPLATE_7_3));
695         // Populate the query template with the data collected from the user
696         //System.out.print(cname);
697         statement3.setString(3, color);
698         statement3.setInt(4, volume);
699         statement3.setInt(1, jobnum);
700         statement3.setInt(2, laborTime1);
701         System.out.println("Dispatching the query 7(3)...");
702         // Actually execute the populated query
703         final int rowsInserted = statement3.executeUpdate();
704         System.out.println(String.format("Done. %d rows inserted in painjob table..", rowsInserted));
705     }
706     catch (Exception e) {
707         System.out.println("An error occurred while executing the query: " + e.getMessage());
708     }
709 }
710 }
711 }
712 }
713 else {
714 }
715 System.out.println("Please enter the number of associated process ID's with this assembly");
716 final int laborTime1 = sc.nextInt();

```

Problems Terminal Data Source Explorer Properties Console

<terminated> fina [Java Application] /Library/Java/JavaVirtualMachines/jdk-11.jdk/Contents/Home/bin/java (Nov 15, 2023, 12:46:45 AM - 12:48:00 AM) [pid: 10998]

Please enter the number of associated process ID's with this assembly

Proj X

```

718 System.out.println("Connecting to the database...");
719 // Get a database connection and prepare a query statement
720 try (final Connection connection = DriverManager.getConnection(URL)) {
721     try {
722         final PreparedStatement statement1 = connection.prepareStatement(QUERY_TEMPLATE_7_1));
723         // Populate the query template with the data collected from the user
724         statement1.setDate(1, dateJobCompleted); // dateJobCompleted should be a date
725         statement1.setInt(2, type); // job_type is an integer
726         statement1.setInt(3, laboreTime); // laboreTime is an integer
727         statement1.setInt(4, jobnum); // jobNumber is an integer
728         System.out.println("Dispatching the query 7(1)...");
729         // Actually execute the populated query
730         final int rowsInserted = statement1.executeUpdate();
731         System.out.println(String.format("Done. %d rows inserted in Job table..", rowsInserted));
732     }
733     try {
734         final PreparedStatement statement3 = connection.prepareStatement(QUERY_TEMPLATE_7_4));
735         // Populate the query template with the data collected from the user
736         //System.out.print(cname);
737         statement3.setInt(1, jobnum);
738         statement3.setInt(2, laboreTime1);
739         System.out.println("Dispatching the query 7(4)...");
740         // Actually execute the populated query
741         final int rowsInserted = statement3.executeUpdate();
742         System.out.println(String.format("Done. %d rows inserted in fitjob table..", rowsInserted));
743     }
744     catch (Exception e) {
745         System.out.println("An error occurred while executing the query: " + e.getMessage());
746     }
747 }
748 }
749 }
750 }
751 break;
752 case "11":
753 System.out.println("Please enter the assembly ID which has passed so far :");
754 final int aID = sc.nextInt();
755 sc.nextLine();
756
757 try (final Connection connection = DriverManager.getConnection(URL)) {
758     try {
759         final PreparedStatement statement1 = connection.prepareStatement(QUERY_TEMPLATE_11));
760         statement1.setInt(1, aID);
761         System.out.println("Dispatching the query 11...");
762     }
763     catch (Exception e) {
764         System.out.println("An error occurred while executing the query: " + e.getMessage());
765     }
766 }

```

Problems Terminal Data Source Explorer Properties Console

<terminated> fina [Java Application] /Library/Java/JavaVirtualMachines/jdk-11.jdk/Contents/Home/bin/java (Nov 15, 2023, 12:46:45 AM - 12:48:00 AM) [pid: 10998]

Please enter the number of associated process ID's with this assembly

Proj X

```

fina.java X
762 ResultSet rs1 = statement1.executeQuery();
763 System.out.println("Process ID Department Number");
764 while(rs1.next()) {
765     System.out.println(rs1.getInt(1) + "\t" + rs1.getInt(2));
766 }
767 }
768 }
769 break;
770
771 case "10":
772     System.out.println("Please enter the Department number that you want find the labor cost:");
773     final int department = sc.nextInt();
774     sc.nextLine();
775
776     System.out.println("Please enter the date the job completed (yyyy-MM-dd):");
777     String comdateStr = sc.nextLine();
778     java.sql.Date comdate = java.sql.Date.valueOf(comdateStr);
779     sc.nextLine();
780
781     // Determining the Processes supervised by the given Department:
782     try (final Connection connection = DriverManager.getConnection(URL)) {
783         try (final PreparedStatement statement1 = connection.prepareStatement(QUERY_TEMPLATE_10_1)) {
784             statement1.setInt(1, department);
785             // Populate the query template with the data collected from the user
786             System.out.println("Dispatching the query 10(1)...");
```

Proj X

```

fina.java X
800             ResultSet rs = statement1.executeQuery();
801
802             int psize = 0;
803             int jsize = 0;
804             int[] iarr = new int[77];
805             int[] jjj = new int[77];
806             int pindex = 0;
807             int jindex = 0;
808             while (rs.next()) {
809                 int prcid = rs.getInt("processId");
810                 iarr[pindex] = prcid;
811                 pindex++;
812                 psize++;
813             }
814
815             for (int i = 0; i < psize; i++) {
816                 System.out.println(iarr[i]);
817                 try (final PreparedStatement statement2 = connection.prepareStatement(QUERY_TEMPLATE_10_2)) {
818                     statement2.setInt(1, iarr[i]);
819                     System.out.println("Dispatching the query 10(2)...");
```

Proj X

```

852 final int maximum = sc.nextInt();
853 sc.nextLine();
854 System.out.println("Connecting to the database...");
855 // Get the database connection, create statement and execute it right away, as no user input need be collected
856 try (final Connection connection = DriverManager.getConnection(URL)) {
857 System.out.println("Dispatching the query...");
858 try (
859 final PreparedStatement statement2 = connection.prepareStatement(QUERY_TEMPLATE_12)) {
860
861 statement2.setInt(1, minimum);
862 statement2.setInt(2, maximum);
863 System.out.println("Dispatching the query 13...");
864 ResultSet rs1 = statement2.executeQuery();
865 System.out.println("Contents of the customer table:");
866 System.out.println("name | address | Category");
867
868 // Unpack the tuples returned by the database and print them out to the user
869 while (rs1.next()) {
870
871 String name = rs1.getString("cname");
872 String address = rs1.getString("caddress");
873 int cat = rs1.getInt("category");
874 System.out.println(name + "\t" + address + "\t\t" + cat);
875 //resultSet.getString(2);
876 //resultSet.getString(3)
877 }
878 }
879 }
880
881 }
882 break;
883 case "13":
884 System.out.println("minimum for job number:");
885 final int minjobnum = sc.nextInt();
886 sc.nextLine();
887 System.out.println("maximum for job number:");
888 final int maxjobnum = sc.nextInt();
889 sc.nextLine();
890 System.out.println("Connecting to the database...");
891 // Get the database connection, create statement and execute it right away, as no user input need be collected
892 try (final Connection connection = DriverManager.getConnection(URL)) {
893 try (
894 final PreparedStatement statement1 = connection.prepareStatement(QUERY_TEMPLATE_13_1)) {
895 // Populate the query template with the data collected from the user
896

```

Problems Terminal Data Source Explorer Properties Console

<terminated> fina [Java Application] /Library/Java/JavaVirtualMachines/jdk-11.jdk/Contents/Home/bin/java (Nov 15, 2023, 12:46:45 AM - 12:48:00 AM) [pid: 10998]

Please enter the number of associated process 105 with this assembly

Proj X

```

89 System.out.println("Dispatching the query 13(1)...");
90 // Actually execute the populated query
91 final int rows_inserted = statement1.executeUpdate();
92 System.out.println(String.format("Done. %d rows deleted in cutjob table..", rows_inserted));
93 }
94
95 try (
96 final PreparedStatement statement2 = connection.prepareStatement(QUERY_TEMPLATE_13_2)) {
97 // Populate the query template with the data collected from the user
98
99 statement2.setInt(1, minjobnum);
100 statement2.setInt(2, maxjobnum);
101 System.out.println("Dispatching the query 13(2)...");
102 // Actually execute the populated query
103 final int rows_inserted = statement2.executeUpdate();
104 System.out.println(String.format("Done. %d rows deleted in assign table..", rows_inserted));
105 }
106 try (
107 final PreparedStatement statement3 = connection.prepareStatement(QUERY_TEMPLATE_13_3)) {
108 // Populate the query template with the data collected from the user
109
110 statement3.setInt(1, minjobnum);
111 statement3.setInt(2, maxjobnum);
112 System.out.println("Dispatching the query 13(3)...");
113 // Actually execute the populated query
114 final int rows_inserted = statement3.executeUpdate();
115 System.out.println(String.format("Done. %d rows deleted in job table..", rows_inserted));
116 }
117 }
118
119 break;
120 case "14":
121 System.out.println("enter job number that you want change color:");
122 final int jobnum = sc.nextInt();
123 sc.nextLine();
124 System.out.println("enter new color:");
125 final String color = sc.nextLine();
126 System.out.println("Connecting to the database...");
127 // Get the database connection, create statement and execute it right away, as no user input need be collected
128 try (final Connection connection = DriverManager.getConnection(URL)) {
129 try (
130 final PreparedStatement statement1 = connection.prepareStatement(QUERY_TEMPLATE_14)) {
131 // Populate the query template with the data collected from the user
132 statement1.setString(1, color);
133 statement1.setInt(2, jobnum);
134 System.out.println("Modifying the query 14 ..");

```

Problems Terminal Data Source Explorer Properties Console

<terminated> fina [Java Application] /Library/Java/JavaVirtualMachines/jdk-11.jdk/Contents/Home/bin/java (Nov 15, 2023, 12:46:45 AM - 12:48:00 AM) [pid: 10998]

Please enter the number of associated process 105 with this assembly

Proj X

```

1 fina.java X
944 // Actually execute the populated query
945 final int rows_inserted = statement1.executeUpdate();
946 System.out.println(String.format("Done. %d rows updated in painjob table..", rows_inserted));
947 }
948 }
949 break;
950 case "15":
951 System.out.println("Where is path of file you want to enter?");
952 sc.nextLine();
953 final String file = sc.nextLine();
954 BufferedReader br;
955 String line = "";
956 String split = "\n";
957 try {
958 br = new BufferedReader(new FileReader(file));
959 try (final Connection connection = DriverManager.getConnection(URL)) {
960 while ((line = br.readLine()) != null) {
961 String[] customer = line.split(split);
962 try {
963 final PreparedStatement statement1 = connection.prepareStatement(QUERY_TEMPLATE_1));
964 // Populate the query template with the data collected from the user
965 statement1.setString1(customer[0]);
966 statement1.setString2(customer[1]);
967 statement1.setInt3(Integer.parseInt(customer[2]));
968 System.out.println("Dispatching the query 1...");
969 final int rows_inserted = statement1.executeUpdate();
970 System.out.println(String.format("Done. %d rows inserted in customer table..", rows_inserted));
971 }
972 }
973 br.close();
974 } catch (FileNotFoundException e) {
975 e.printStackTrace();
976 } catch (IOException e) {
977 e.printStackTrace();
978 }
979 }
980 }
981 } catch (FileNotFoundException e) {
982 e.printStackTrace();
983 }
984 System.out.println("The specified file was not found: " + e.getMessage());
985 } catch (IOException e) {
986 System.out.println("IO error: " + e.getMessage());
987 e.printStackTrace();
988 }
989 }
990 }
991 }
992 }
993 }
994 }
995 }
996 }
997 }
998 }
999 }
1000 }
1001 }
1002 }
1003 }
1004 }
1005 }
1006 }
1007 }
1008 }
1009 }
1010 }
1011 }
1012 }
1013 }
1014 }
1015 }
1016 }
1017 }
1018 }
1019 }
1020 }
1021 }
1022 }
1023 }
1024 }
1025 }
1026 }
1027 }
1028 }
1029 }
1030 }
1031 }
1032 }
1033 }
1034 }
1035 }
1036 }
1037 }
1038 }
1039 }
1040 }
1041 }
1042 }
1043 }
1044 }
1045 }
1046 }
1047 }
1048 }
1049 }
1050 }

```

Problems Terminal Data Source Explorer Properties Console X

<terminated> fina [Java Application] /Library/Java/JavaVirtualMachines/jdk-11.jdk/Contents/Home/bin/java (Nov 15, 2023, 12:46:45 AM - 12:48:00 AM) [pid: 10998]

Please enter the number or associated process 1098 with this assembly

Writable Smart Insert 786 : 62 : 32874

Proj X

```

1 fina.java X
1000 statement2.setInt1(mincategory);
1001 statement2.setInt2(maxcategory);
1002 System.out.println("Dispatching the query 12...");
1003 ResultSet tre = statement2.executeQuery();
1004
1005 try (PrintWriter rrr = new PrintWriter(fileName + ".csv")) {
1006 while (tre.next()) {
1007 StringBuilder sub = new StringBuilder();
1008 String name = tre.getString("cname");
1009 sub.append("\\"").append(name).append("\\").append(',');
1010 String address = tre.getString("caddress");
1011 sub.append("\\"").append(address).append("\\").append(',');
1012 int cat = tre.getInt("category");
1013 sub.append(cat);
1014 sub.append("\n");
1015 rrr.write(sub.toString());
1016 }
1017 } catch (FileNotFoundException e) {
1018 e.printStackTrace();
1019 }
1020 }
1021 }
1022 }
1023 }
1024 }
1025 }
1026 }
1027 }
1028 }
1029 }
1030 }
1031 }
1032 }
1033 }
1034 }
1035 }
1036 }
1037 }
1038 }
1039 }
1040 }
1041 }
1042 }
1043 }
1044 }
1045 }
1046 }
1047 }
1048 }
1049 }
1050 }

```

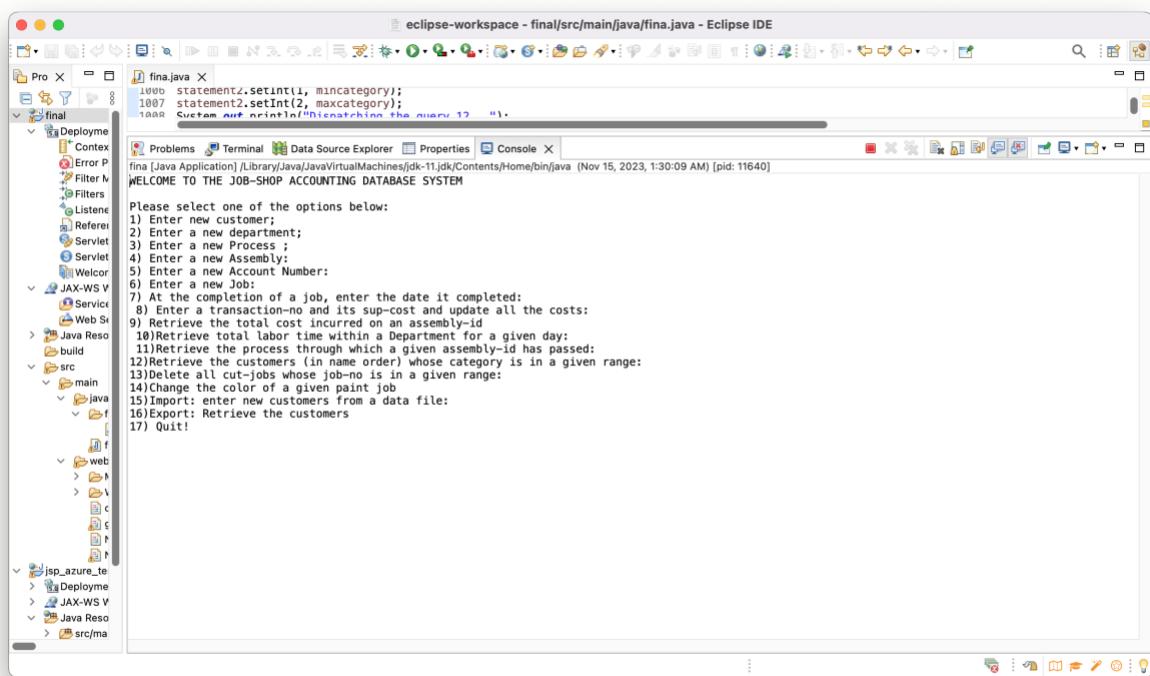
Problems Terminal Data Source Explorer Properties Console X

<terminated> fina [Java Application] /Library/Java/JavaVirtualMachines/jdk-11.jdk/Contents/Home/bin/java (Nov 15, 2023, 12:46:45 AM - 12:48:00 AM) [pid: 10998]

Please enter the number or associated process 1098 with this assembly

Writable Smart Insert 1015 : 64 : 41483

run the code successfully:



query 1:

1-1)

```
1
Please enter customer cname:
john
Please enter customer address:
norman
Please enter customer category:
1
Connecting to the database...
johnDispatching the query...
Done. 1 rows inserted.
```

1-2)

```

1 Please enter customer cname:
zahra
Please enter customer address:
Lindsay
Please enter customer category:
4
Connecting to the database...
zahraDispatching the query...
Done. 1 rows inserted.

```

1-3)

```

1 Please enter customer cname:
naeem
Please enter customer address:
boyd
Please enter customer category:
5
Connecting to the database...
naeemDispatching the query...
Done. 1 rows inserted.

```

1-4)

```

1 Please enter customer cname:
nazi
Please enter customer address:
canada
Please enter customer category:
7
Connecting to the database...
naziDispatching the query...
Done. 1 rows inserted.

```

1-5)

```

1 Please enter customer cname:
navid
Please enter customer address:
canada
Please enter customer category:
8
Connecting to the database...
navidDispatching the query...
Done. 1 rows inserted.

```

Please select one of the options below:

result:

The screenshot shows the SSMS interface with the following details:

- Connections:** SQLQuery_1 - naji0002-sql-server.database.windows.net.cs-dsa-4513-sql-db (naji0002)
- Servers:** naji0002-sql-server
- Tables:** A tree view showing various tables like dbo.account, dbo.Assembly, etc.
- Query Editor:** Contains the query: `SELECT * from customer`
- Results Grid:** Displays the following data:

	cname	caddress	category
1	Customer 110	110 Customer Address	1
2	ferial	tehran	3
3	jakie	moore	2
4	john	norman	1
5	naeem	boyd	5
6	navid	canada	8
7	nazi	canada	7
8	zahra	Lindsay	4

query 2)

2-1)

```
2
Please enter department number
130
Please enter department data:
CS
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted.

Please select one of the options below:
1) Enter new customer;
2) Enter a new department;
3) Enter a new Process ;
4) Enter a new Assembly;
5) Enter a new Account Number;
6) Enter a new Job;
7) At the completion of a job, enter the date it completed;
8) Enter a transaction-no and its sup-cost and update all the costs;
9) Retrieve the total cost incurred on an assembly-id
10)Retrieve total labor time within a Department for a given day:
11)Retrieve the process through which a given assembly-id has passed;
```

2-2)

```
AUT/ QUALI:
2
Please enter department number
167
Please enter department data:
math
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted.

Please select one of the options below:
1) Enter new customer;
2) Enter a new department;
3) Enter a new Process ;
4) Enter a new Assembly;
5) Enter a new Account Number;
6) Enter a new Job;
7) At the completion of a job, enter the date it completed;
8) Enter a transaction-no and its sup-cost and update all the costs;
9) Retrieve the total cost incurred on an assembly-id
10)Retrieve total labor time within a Department for a given day:
11)Retrieve the process through which a given assembly-id has passed;
```

2-3)

```
AUT/ QUALI:
2
Please enter department number
765
Please enter department data:
psychology
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted.

Please select one of the options below:
1) Enter new customer;
2) Enter a new department;
3) Enter a new Process ;
4) Enter a new Assembly;
5) Enter a new Account Number;
6) Enter a new Job;
7) At the completion of a job, enter the date it completed;
8) Enter a transaction-no and its sup-cost and update all the costs;
9) Retrieve the total cost incurred on an assembly-id
10)Retrieve total labor time within a Department for a given day:
11)Retrieve the process through which a given assembly-id has passed;
```

2-4)

```

2
Please enter department number
543
Please enter department data:
algebra
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted.

Please select one of the options below:
1) Enter new customer;
2) Enter a new department;
3) Enter a new Process ;
4) Enter a new Assembly;
5) Enter a new Account Number;
6) Enter a new Job;
7) At the completion of a job, enter the date it completed;
8) Enter a transaction-no and its sup-cost and update all the costs;
9) Retrieve the total cost incurred on an assembly-id
10)Retrieve total labor time within a Department for a given day;
11)Retrieve the process through which a given assembly-id has passed;
12)Retrieve the jobs completed during given date in a given department;

```

2-5)

```

2
Please enter department number
342
Please enter department data:
biomedical
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted.

Please select one of the options below:
1) Enter new customer;
2) Enter a new department;
3) Enter a new Process ;
4) Enter a new Assembly;
5) Enter a new Account Number;
6) Enter a new Job;
7) At the completion of a job, enter the date it completed;
8) Enter a transaction-no and its sup-cost and update all the costs;
9) Retrieve the total cost incurred on an assembly-id
10)Retrieve total labor time within a Department for a given day;
11)Retrieve the process through which a given assembly-id has passed;
12)Retrieve the jobs completed during given date in a given department;

```

result:

The screenshot shows the SSMS interface with the following details:

- Connections:** SQLQuery_ferial.sql - disconnected, SQLQuery_1 - naji00...ji0002 (selected), task4tables.sql - disconnected.
- Servers:** naji00...ji0002 (selected).
- Tables:** department
- Results:** A grid showing the following data:

	departmentnumber	departmentdata
1	110	Computer Science
2	112	mechanic
3	130	CS
4	167	math
5	342	biomedical
6	543	algebra
7	765	psychology

3)

3-1

The screenshot shows the Eclipse IDE interface. On the left is the Project Explorer with a 'final' project selected. In the center-left is the code editor showing `DataHandler.java` and `fina.java`. The code in `fina.java` contains static string templates for database insertions. To the right of the code editor is a terminal window showing the output of a Java application. The terminal output includes:

```

<terminated> fina [Java Application] /Library/Java/JavaVirtualMachines/jdk-11.jdk/Contents/Home/bin/java (Nov 12, 2023, 6:17:22 PM – 6:17:47 PM) [pid: 2644]
14)Delete all cut-jobs whose job_id is in a given range:
15)Change the color of a given paint job:
16)Import: enter new customers from a data file:
17)Export: Retrieve the customers
18)Quit!
3
Please enter process Id:
5443
Please enter the process Data:
45
Please enter the Supervising Department ID:
453
Please enter the Department data:
gfd
Please enter : 1. For Fit , 2. For Paint , 3. for Cut Process:
1
Please enter Fit type:
gfd
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted in "process" table.
Dispatching the query...
Done. 1 rows inserted.
Dispatching the query...

```

results:

The screenshot shows the SQL Server Management Studio (SSMS) interface. The left pane displays the Object Explorer with a tree view of the database structure, including tables like `dbo.account`, `dbo.cutjob`, and `dbo.Job`. The right pane shows the results of a query run against the database. The query was:

```

3 select * from Process
4 select * from fit

```

The results grid shows the following data:

	fittype	processId
1	close	1
2	new	34
3	dsa	123
4	bad	321
5	new	1234
6	gfd	5443

SQLQuery_1 - naji0002-sql-server.database.windows.net.cs-dsa-4513-sql-db (naji0002)

Restricted Mode is intended for safe code browsing. Trust this window to enable all features. [Manage](#) [Learn More](#)

CONNECTIONS

- ... [SQLQuery_ferrial.sql - disconnected](#) [SQLQuery_1 - naji00...ji0002](#) [task4tables.sql - disconnected](#)
- [Run](#) [Cancel](#) [Disconnect](#) [Change](#) Database: [cs-dsa-4513-sql-db](#) [Estimated Plan](#) [Enable Actual Plan](#) [Parse](#)

3 `select * from Process`
4 `select * from fit`

processId	processData
1	xts
2	dfr
3	fds
4	sd
5	ds
6	new process
7	dsf
8	45

SERVERS

- naji0002-sql-server.database.windows.net.cs-dsa-4513-sql-db (naji0002)
- Tables
 - dbo.account
 - dbo.Assembly
 - dbo.assemblyaccount
 - dbo.assign
 - dbo.customer
 - dbo.cut
 - dbo.cutjob
 - dbo.department
 - dbo.departmentaccount
 - dbo.fit
 - dbo.fitjob
 - dbo.Job
 - Columns
 - Keys
 - Constraints
 - Triggers
 - Indexes
 - Statistics
 - dbo.movie_night
 - dbo.order1
 - dbo.paint
 - dbo.paintjob
 - dbo.supervise

AZURE

Restricted Mode [0 ▲ 0](#) Ln 4, Col 1 (22 selected) Spaces: 4 UTF-8 LF 8 rows MSSQL 00:00:00 naji0002-sql-server.database.windows.net : cs-dsa-4513-sql-db

3-2)

```

3
Please enter process Id:
99
Please enter the process Data:
test

Please enter the Supervising Department ID:
110
Please enter the Department data:
mechanic
Please enter : 1. For Fit , 2. For Paint , 3. for Cut Process:
1
Please enter Fit type:
ss

Connecting to the database...
Dispatching the query...
Done. 1 rows inserted in "process" table.
Dispatching the query...
Done. 1 rows inserted.
Dispatching the query 3(4)...
Done. 1 rows inserted in supervise table.

```

results:

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CONNECTIONS ... SQLQuery_1.sql - disconnected SQLQuery_1 - naij00..._j0002 task4tables.sql - disconnected Database: cs-dsa-4513-sql-db Estimated Plan Enable Actual Plan Parse

SERVERS naij0002-sql-server.database.windows.net ... Run Cancel Disconnect Change Database: cs-dsa-4513-sql-db Estimated Plan Enable Actual Plan Parse

Tables

- > dbo.account
- > dbo.Assembly
- > dbo.assemblyaccount
- > dbo.assign
- > dbo.customer
- > dbo.cut
- > dbo.cutjob
- > dbo.department
- > dbo.departmentaccount
- > dbo.fit
- > dbo.job
- > dbo.job
- > dbo.movie_night
- > dbo.order1
- > dbo.paint
- > dbo.paintjob
- > dbo.pastthrough
- > dbo.Process
- > dbo.Processaccount
- > dbo.Record
- > dbo.Record_Cost1
- > dbo.Record_Cost2
- > dbo.record_cost3
- > dbo.supervise
- > dbo.Transaction1
- > dbo.update1

Results Messages

processId	processData
1	xts
2	34
3	45
4	99
5	123
6	321
7	1234
8	4323
9	5443

fittype	processId
close	1
new	34
ss	99
dsa	123
bad	321
new	1234
grd	5443

processId	departmentnumber	departmentdata
1	110	mechanic
2	110	NULL

AZURE Restricted Mode 0 ▲ 0 Ln 2, Col 1 Spaces: 4 UTF-8 LF 18 rows MSSQL 00:00:00 naij0002-sql-server.database.windows.net : cs-dsa-4513-sql-db

3-3)

```

3
Please enter process Id:
78
Please enter the process Data:
test test

Please enter the Supervising Department ID:
110
Please enter the Department data:
math
Please enter : 1. For Fit , 2. For Paint , 3. for Cut Process:
1
Please enter Fit type:
hgf

Connecting to the database...
Dispatching the query...
Done. 1 rows inserted in "process" table.
Dispatching the query...
Done. 1 rows inserted.
Dispatching the query 3(4)...
Done. 1 rows inserted in supervise table.

```

result:

The screenshot shows the SSMS interface with the following details:

- Connections:** SQLQuery_1 - disconnected
- Database:** cs-dsa-4513-sql-db
- Tables:** A list of tables including dbo.account, dbo.Assembly, dbo.assignment, dbo.customer, dbo.cut, dbo.cutJob, dbo.department, dbo.departmentaccount, dbo.fil, dbo.filJob, dbo.job, dbo.movie_night, dbo.order1, dbo.paint, dbo.paintJob, dbo.pushThrough, dbo.Process, and dbo.processaccount.
- Results Grid:** Shows data for the 'process' table with columns processId, processData, and filtype. The data is as follows:

processId	processData	filtype
1	xts	
2	dfr	
3	fds	
4	test test	
5	test	
6	sd	
7	31	
8	1234	new process
9	4323	dsf
10	5443	45
- Results Grid:** Shows data for the 'processaccount' table with columns filtype, processId, and close. The data is as follows:

filtype	processId	close
Close	1	
new	34	
hgt	78	
ts	99	
dsa	123	
bad	321	
new	1234	
grd	5443	
- Results Grid:** Shows data for the 'process' table with columns processId, departmentNumber, and departmentData. The data is as follows:

processId	departmentNumber	departmentData
1	110	math
2	99	mechanic
3	1234	NULL

3-4:

```

3
Please enter process Id:
324
Please enter the process Data:
fds

Please enter the Supervising Department ID:
110
Please enter the Department data:
computer science
Please enter : 1. For Fit , 2. For Paint , 3. for Cut Proces:
2
Please enter Paint type:
dfg
Please enter Paint method:
ddg
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted in the process table.
Dispatching the query...
Executing Statement 3(2)...
Done. 1 rows inserted.
Dispatching the query 3(4)...
Done. 1 rows inserted in supervise table.

```

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CONNECTIONS ... SQLQuery_1.sql - disconnected SQLQuery_1 - naij00..._j0002) task4tables.sql - disconnected Database: cs-dsa-4513-sql-db Estimated Plan Enable Actual Plan Parse

SERVICES

Tables

```

1
2
3 select * from process
4 select * from paint
5 select * from supervise
6 select * from department

```

Results Messages

	processId	processData
1	1	xts
2	34	dfr
3	45	fds
4	78	test test
5	98	bad
6	99	test
7	118	
8	123	sd
9	321	ds
10	324	fds

	paintType	paintingMethod	processId
1	tt	dfs	98
2	spray	jsk	118
3	dfg	ddg	324
4	new Paint Type	new Painting Method	1234
5	good	hdf	4323

	processId	departmentNumber	departmentData
1	78	118	math
2	99	118	mechanic
3	324	118	computer science
4	1234	118	NULL

	departmentNumber	departmentData
1	110	Computer Science
2	112	mechanic
3	138	CS
4	167	math
5	342	biomedical
6	543	algebra
7	765	psychology

AZURE Restricted Mode 0 ▲ 0

Ln 6, Col 25 Spaces: 4 UTF-8 LF 29 rows MSSQL 00:00:00 naij002-sql-server.database.windows.net: cs-dsa-4513-sql-db

3-5)

```

3
Please enter process Id:
654
Please enter the process Data:
good

Please enter the Supervising Department ID:
765
Please enter the Department data:
psychology
Please enter : 1. For Fit , 2. For Paint , 3. for Cut Proces
2
Please enter Paint type:
spray
Please enter Paint method:
spray
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted in the process table.
Dispatching the query...
Executing Statement 3(2)...
Done. 1 rows inserted.
Dispatching the query 3(4)...
Done. 1 rows inserted in supervise table.

```

result:

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CONNECTIONS SQLQuery_1.sql - disconnected SQLQuery_1 - naij00..._j0002 task4tables.sql - disconnected Database: cs-dsa-4513-sql-db Estimated Plan Enable Actual Plan Parse

SERVERS naij0002-sql-server.database.windows...

Tables

- > dbo.account
- > dbo.Assembly
- > dbo.assemblyaccount
- > dbo.assign
- > dbo.customer
- > dbo.o
- > dbo.cutjob
- > dbo.department
- > dbo.departmentaccount
- > dbo.fit
- > dbo.rjjob
- > dbo.job
- > dbo.Columns
- > dbo.Keys
- > dbo.Constraints
- > dbo.Triggers
- > dbo.Indexes
- > dbo.Statistics
- > dbo.movie_night
- > dbo.order1
- > dbo.paint
- > dbo.paintjob
- > dbo.pastthrough
- > dbo.Process
- > dbo.Processaccount
- > dbo.Columns
- > dbo.Keys
- > dbo.Constraints
- > dbo.Triggers
- > dbo.Indexes
- > dbo.Statistics
- > dbo.Record
- > dbo.Record_Cost1
- > dbo.Record_Cost2
- > dbo.record_cost3
- > dbo.record_dept_cost
- > dbo.supervise
- > dbo.Transaction1
- > dbo.update1

Messages

```
1
2
3 select * from Process
```

processId	processData
1	xts
2	34
3	45
4	78
5	98
6	99
7	118
8	123
9	321
10	324

painttype	paintingmethod	processId
1	dfs	98
2	spray	118
3	dfg	324
4	spray	654
5	new Paint Type	new Painting Method
6	good	4323

processId	departmentnumber	departmentdata
1	78	118
2	99	118
3	324	118
4	654	765
5	1234	118
		NULL

departmentnumber	departmentdata
1	118
2	132
3	138
4	167
5	342
6	543
7	765

AZURE Restricted Mode 0 □ 0

Ln 5, Col 24 Spaces: 4 UTF-8 LF 32 rows MSSQL 00:00:00 naij0002-sql-server.database.windows.net: cs-dsa-4513-sql-db

3-6)

```
3 -----
Please enter process Id:
10
Please enter the process Data:
nice

Please enter the Supervising Department ID:
342
Please enter the Department data:
biomedical
Please enter : 1. For Fit , 2. For Paint , 3. for Cut Proce
3
Please enter the Cutting Type:
good
Please enter the Machine Type:
machine
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted in process table.
Dispatching the query...
Done. 1 rows inserted.
Dispatching the query 3(4)...
Done. 1 rows inserted in supervise table.
```

3-7)

```
3 -----
Please enter process Id:
15
Please enter the process Data:
good

Please enter the Supervising Department ID:
167
Please enter the Department data:
math
Please enter : 1. For Fit , 2. For Paint , 3. for Cut Proce
3
Please enter the Cutting Type:
cut
Please enter the Machine Type:
cutter
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted in process table.
Dispatching the query...
Done. 1 rows inserted.
Dispatching the query 3(4)...
Done. 1 rows inserted in supervise table.
```

3-8)

```

3
Please enter process Id:
16
Please enter the process Data:
look

Please enter the Supervising Department ID:
112
Please enter the Department data:
mechanic
Please enter : 1. For Fit , 2. For Paint , 3. for Cut Proce
3
Please enter the Cutting Type:
cutting type
Please enter the Machine Type:
machine type
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted in process table.
Dispatching the query...
Done. 1 rows inserted.
Dispatching the query 3(4)...
Done. 1 rows inserted in supervise table.

```

3-9)

```

3
Please enter process Id:
17
Please enter the process Data:
nothing

Please enter the Supervising Department ID:
130
Please enter the Department data:
CS
Please enter : 1. For Fit , 2. For Paint , 3. for Cut P
3
Please enter the Cutting Type:
type1
Please enter the Machine Type:
type2
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted in process table.
Dispatching the query...
Done. 1 rows inserted.
Dispatching the query 3(4)...
Done. 1 rows inserted in supervise table.

```

results of 3-6 to 3-9:

The screenshot shows the SSMS interface with the following details:

- Object Explorer:** Shows the database structure with nodes for SERVERS, Tables, Views, and Procedures.
- Results Pane:** Displays the results of six SQL queries. The first five queries are identical, showing data from the process, supervise, and department tables. The sixth query shows data from the cuttingtype, machinetype, and processid columns.

	cuttingtype	machinetype	processId
1	good	machine	18
2	cut	cutter	15
3	cutting type	machine type	16
4	type1	type2	17
5	new Cutting Type	new Machine Type	45
6	new Cutting Type	new Machine Type	1234

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CONNECTIONS ... SQLQuery_feriel.sql - disconnected SQLQuery_1 - naji00_j0002 task4tables.sql - disconnected Database: cs-dsa-4513-sql-db Estimated Plan Enable Actual Plan Parse

4 select * from cut
5 select * from supervise
6 select * from department

Results Messages

processId	departmentnumber	departmentdata
1	342	biomedical
2	167	math
3	112	mechanic
4	17	CS
5	118	math
6	99	mechanic
7	324	computer science
8	654	psychology
9	1234	NULL

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CONNECTIONS ... SQLQuery_feriel.sql - disconnected SQLQuery_1 - naji00_j0002 task4tables.sql - disconnected Database: cs-dsa-4513-sql-db Estimated Plan Enable Actual Plan Parse

4 select * from cut
5 select * from supervise
6 select * from department

Results Messages

departmentnumber	departmentdata
118	Computer Science
112	mechanic
138	CS
167	math
342	biomedical
543	algebra
765	psychology

Restricted Mode is intended for safe code browsing. Trust this window to enable all features. Manage Learn More

CONNECTIONS ... SQLQuery_1.sql - disconnected SQLQuery_1 - naij00..._j0002 task4tables.sql - disconnected

Run Cancel Disconnect Change Database: cs-dsa-4513-sql-db Estimated Plan Enable Actual Plan Parse

4 select * from cut
5 select * from supervise
6 select * from department
7 select * from Process

SERVICES

naij0002-sql-server.database.windows.net

Tables
 > dbo.account
 > dbo.Assembly
 > dbo.Assemblyaccount
 > dbo.assign
 > dbo.customer
 > dbo.cut
 > dbo.cutjob
 > dbo.department
 > dbo.departmentaccount
 > dbo.fit
 > dbo.job
 > dbo.job
 > Columns
 > Keys
 > Constraints
 > Triggers
 > Indexes
 > Statistics

dbo.movie_night
 dbo.order1
 dbo.paint
 dbo.paintjob
 dbo.paststhrough
 dbo.Process
 dbo.Processaccount
 > Columns
 > Keys
 > Constraints
 > Triggers
 > Indexes
 > Statistics

dbo.record
 dbo.Record_Cost1
 dbo.Record_Cost2
 dbo.record_cost3
 dbo.record_dept_cost
 dbo.supervise
 dbo.Transaction1
 dbo.update1

processId processData

processId	processData
1	xts
2	nice
3	good
4	look
5	nothing
6	nice
7	bad
8	dfr
9	fds
10	test test
11	bad
12	test
13	110
14	sd
15	testtest
16	ds
17	fds
18	good
19	1234
20	new process
21	dsf
22	45

AZURE

Ln 7, Col 22 (21 selected) Spaces: 4 UTF-8 LF 21 rows MSSQL 00:00:00 naij0002-sql-server.database.windows.net: cs-dsa-4513-sql-db

3-10)

```
3
Please enter process Id:
245
Please enter the process Data:
testtest

Please enter the Supervising Department ID:
110
Please enter the Department data:
Computer Science
Please enter : 1. For Fit , 2. For Paint , 3. for Cut F
1
Please enter Fit type:
type

Connecting to the database...
Dispatching the query...
Done. 1 rows inserted in "process" table.
Dispatching the query...
Done. 1 rows inserted.
Dispatching the query 3(4)...
Done. 1 rows inserted in supervise table.
```

result:

Restricted Mode is intended for safe code browsing. Trust this window to enable all features. Manage Learn More

CONNECTIONS ... SQLQuery_ferital.sql - disconnected SQLQuery_1 - naij00..._j0002 task4tables.sql - disconnected Database: cs-dsa-4513-sql-db Estimated Plan Enable Actual Plan Parse

Run Cancel Disconnect Change Database: cs-dsa-4513-sql-db Estimated Plan Enable Actual Plan Parse

4 select * from cut
5 select * from supervise
6 select * from department
7 select * from Process

Tables
dbo.account
dbo.Assembly
dbo.assemblyaccount
dbo.assign
dbo.customer
dbo.cut
dbo.cutjob
dbo.department
dbo.departmentaccount
dbo.fit
dbo.filjob
dbo.job
Columns
Keys
Constraints
Triggers
Indexes
Statistics
dbo.movie_night
dbo.order1
dbo.paint
dbo.paintjob
dbo.pastthrough
dbo.Process
dbo.processaccount
Columns
Keys
Constraints
Triggers
Indexes
Statistics
dbo.record
dbo.Record_Cost1
dbo.Record_Cost2
dbo.record_cost3
dbo.record_dept_cost
dbo.supervise
dbo.Transaction1
dbo.update1

processId processData

1	1	xts
2	18	nice
3	15	good
4	16	look
5	17	nothing
6	18	nice
7	19	bad
8	34	dfr
9	45	fds
10	78	test test
11	98	bad
12	99	test
13	110	
14	123	sd
15	245	testtest
16	321	ds
17	324	fds
18	654	good
19	1234	new process
20	4323	dsf
21	5443	45

AZURE

Ln 7, Col 22 (21 selected) Spaces: 4 UTF-8 LF 21 rows MSSQL 00:00:00 naij002-sql-server.database.windows.net : cs-dsa-4513-sql-db

Restricted Mode is intended for safe code browsing. Trust this window to enable all features. Manage Learn More

CONNECTIONS ... SQLQuery_ferital.sql - disconnected SQLQuery_1 - naij00..._j0002 task4tables.sql - disconnected Database: cs-dsa-4513-sql-db Estimated Plan Enable Actual Plan Parse

Run Cancel Disconnect Change Database: cs-dsa-4513-sql-db Estimated Plan Enable Actual Plan Parse

1 close 1
2 type1 18
3 type3 19
4 new 34
5 hgf 78
6 ss 99
7 dsa 123
8 type 245
9 bad 321
10 new 1234
11 grd 5443

fittype processId

1	close	1
2	type1	18
3	type3	19
4	new	34
5	hgf	78
6	ss	99
7	dsa	123
8	type	245
9	bad	321
10	new	1234
11	grd	5443

processId departmentnumber departmentdata

1	18	342	biomedical
2	15	167	math
3	16	112	mechanic
4	17	138	CS
5	78	110	math
6	99	110	mechanic
7	245	110	Computer Science
8	324	110	computer science
9	654	765	psychology
10	1234	110	NULL

departmentnumber departmentdata

1	110	Computer Science
2	112	mechanic
3	138	CS
4	167	math
5	342	biomedical
6	543	algebra
7	765	psychology

AZURE

Ln 6, Col 25 (66 selected) Spaces: 4 UTF-8 LF 28 rows MSSQL 00:00:00 naij002-sql-server.database.windows.net : cs-dsa-4513-sql-db

query4)

Screenshots showing the testing of query 4:
4-1)

```
4
Enter a new Assembly ID:
2
Please enter the Date of ordered of assembly (yyyy-MM-d
2028-10-10
Please enter the Assembly details:
good
Please enter the associated Customer Name:
john
Please enter the number of associated process IDs with
2
Enter the 1th process ID:
18
Enter the 2th process ID:
19
Dispatching the query 4(1)...
Done. 1 rows inserted in Assembly table.
Dispatching the query 4(2)...
Done. 1 rows inserted in order1 table.
Dispatching the query 4(3)...
Done. 1 rows inserted in passthrough table.
Dispatching the query 4(3)...
Done. 1 rows inserted in passthrough table.
```

4-2)

```
4
Enter a new Assembly ID:
3
Please enter the Date of ordered of assembly (yyyy-l
2023-04-04
Please enter the Assembly details:
nice
Please enter the associated Customer Name:
naeem
Please enter the number of associated process IDs w
1
Enter the 1th process ID:
16
Dispatching the query 4(1)...
Done. 1 rows inserted in Assembly table.
Dispatching the query 4(2)...
Done. 1 rows inserted in order1 table.
Dispatching the query 4(3)...
Done. 1 rows inserted in passthrough table.
```

4-3)

eclipse-workspace - final/src/main/java/fina.java - Eclipse IDE

```

final static String QUERY_TEMPLATE_4_1 = "INSERT INTO assembly " +
44 "VALUES (?, ?, ?);";
45 final static String QUERY_TEMPLATE_4_2 ="INSERT into order1 " +
46 "VALUES (?, ?);";
47 final static String QUERY_TEMPLATE_4_3 ="INSERT into passthrough " +
48 "VALUES (?, ?);";
49 final static String QUERY_TEMPLATE_5_1 ="INSERT into account " +
50 "VALUES (?, ?);";
51 final static String QUERY_TEMPLATE_5_2 ="UPDATE passthrough SET account_id = ? WHERE assembly_id = ?"

```

Problems Servers Terminal Data Source Explorer Properties Console

fina [Java Application] /Library/Java/JavaVirtualMachines/jdk-11.jdk/Contents/Home/bin/java (Nov 12, 2023, 7:34:02 PM) [pid: 2956]

```

4
Enter a new Assembly ID:
4
Please enter the Date of ordered of assembly (yyyy-MM-dd):
2021-02-08
Please enter the Assembly details:
bad
Please enter the associated Customer Name:
navid
Please enter the number of associated process IDs with this assembly
3
Enter the 1th process ID:
1
Enter the 2th process ID:
10
Enter the 3th process ID:
15
Dispatching the query 4(1)...
Done. 1 rows inserted in Assembly table.
Dispatching the query 4(2)...
Done. 1 rows inserted in order1 table.
Dispatching the query 4(3)...
Done. 1 rows inserted in passthrough table.
Dispatching the query 4(3)...
Done. 1 rows inserted in passthrough table.
Dispatching the query 4(3)...
Done. 1 rows inserted in passthrough table.

```

4-4)

```

4
Enter a new Assembly ID:
5
Please enter the Date of ordered of assembly (yyyy-MM-d
2021-02-08
Please enter the Assembly details:
test
Please enter the associated Customer Name:
nazi
Please enter the number of associated process IDs with
1
Enter the 1th process ID:
245
Dispatching the query 4(1)...
Done. 1 rows inserted in Assembly table.
Dispatching the query 4(2)...
Done. 1 rows inserted in order1 table.
Dispatching the query 4(3)...
Done. 1 rows inserted in passthrough table.

```

4-5)

```

4
Enter a new Assembly ID:
6
Please enter the Date of ordered of assembly (yyyy-MM-dd):
1998-03-03
Please enter the Assembly details:
nice nice
Please enter the associated Customer Name:
zahra
Please enter the number of associated process IDs with this as:
2
Enter the 1th process ID:
78
Enter the 2th process ID:
38
Dispatching the query 4(1)...
Done. 1 rows inserted in Assembly table.
Dispatching the query 4(2)...
Done. 1 rows inserted in order1 table.
Dispatching the query 4(3)...
Done. 1 rows inserted in passthrough table.
Dispatching the query 4(3)...
Done. 1 rows inserted in passthrough table.

```

4-6)

```

4
Enter a new Assembly ID:
7
Please enter the Date of ordered of assembly (yyyy-MM-dd):
1876-09-09
Please enter the Assembly details:
test
Please enter the associated Customer Name:
naem
Please enter the number of associated process IDs with this assembly
2
Enter the 1th process ID:
1
Enter the 2th process ID:
10
Dispatching the query 4(1)...
Done. 1 rows inserted in Assembly table.
Dispatching the query 4(2)...
Done. 1 rows inserted in order1 table.
Dispatching the query 4(3)...
Done. 1 rows inserted in passthrough table.
Dispatching the query 4(3)...
Done. 1 rows inserted in passthrough table.

```

4-7)

```

4
Enter a new Assembly ID:
8
Please enter the Date of ordered of assembly (yyyy-MM-dd):
2020-09-09
Please enter the Assembly details:
perfect
Please enter the associated Customer Name:
nazi
Please enter the number of associated process IDs with this assembly
1
Enter the 1th process ID:
1
Dispatching the query 4(1)...
Done. 1 rows inserted in Assembly table.
Dispatching the query 4(2)...
Done. 1 rows inserted in order1 table.
Dispatching the query 4(3)...
Done. 1 rows inserted in passthrough table.

Please select one of the options below:

```

4-8)

```

4
Enter a new Assembly ID:
9
Please enter the Date of ordered of assembly (yyyy-MM-dd):
2021-06-06
Please enter the Assembly details:
awful
Please enter the associated Customer Name:
jake
Please enter the number of associated process IDs with this assembly
2
Enter the 1th process ID:
34
Enter the 2th process ID:
45
Dispatching the query 4(1)...
Done. 1 rows inserted in Assembly table.
Dispatching the query 4(2)...
Done. 1 rows inserted in order1 table.
Dispatching the query 4(3)...
Done. 1 rows inserted in passthrough table.
Dispatching the query 4(3)...
Done. 1 rows inserted in passthrough table.

Please select one of the options below:

```

4-9)

```

4
Enter a new Assembly ID:
10
Please enter the Date of ordered of assembly (yyyy-MM-dd):
1987-09-09
Please enter the Assembly details:
bad
Please enter the associated Customer Name:
ferial
Please enter the number of associated process IDs with this assembly
1
Enter the 1th process ID:
10
Dispatching the query 4(1)...
Done. 1 rows inserted in Assembly table.
Dispatching the query 4(2)...
Done. 1 rows inserted in order1 table.
Dispatching the query 4(3)...
Done. 1 rows inserted in passthrough table.

Please select one of the options below:
1) Enter new customer;

```

4-10)

```

4 Enter a new Assembly ID:
11
Please enter the Date of ordered of assembly (yyyy-MM-dd):
1896-06-06
Please enter the Assembly details:
nice
Please enter the associated Customer Name:
navid
Please enter the number of associated process IDs with this assembly
1
Enter the 1th process ID:
17
Dispatching the query 4(1)...
Done. 1 rows inserted in Assembly table.
Dispatching the query 4(2)...
Done. 1 rows inserted in order1 table.
Dispatching the query 4(3)...
Done. 1 rows inserted in passthrough table.

```

results after 10 queries:

```

2
3 select * from Assembly
4 select * from customer
5 SELECT * from order1
6 SELECT * from Assembly
7 select * from Process
8 DELETE FROM Assembly
9 WHERE AssemblyId = 110;
10

```

Results Messages

	AssemblyId	dateordered	AssemblyDetails
1	1	2020-02-03	new
2	2	2020-10-10	good
3	3	2023-04-04	nice
4	4	2021-02-08	bad
5	5	2021-02-08	test
6	6	1998-03-03	nice nice
7	7	1876-09-09	test
8	8	2020-09-09	perfect
9	9	2021-06-06	awful
10	10	1987-09-09	bad
11	11	1896-06-06	nice
12	110	2020-10-10	new Assembly Details

```

4
3 select * from Assembly
4 select * from customer
5 SELECT * from order1
6 SELECT * from Assembly
7 select * from Process
8 DELETE column AssemblyId(PK, int, not null)
9 WHERE AssemblyId = 110;
10

```

Results Messages

	AssemblyId	cname
1	1	ferial
2	2	john
3	3	naeem
4	4	navid
5	5	nazi
6	6	zahra
7	7	naeem
8	8	nazi
9	9	jakie
10	10	ferial
11	11	navid
12	110	Customer 110

pass-through table:

Run Cancel Disconnect Change

Database: cs-dsa-4513-sql-db

Results Messages

	AssemblyId	processId
1	2	18
2	2	19
3	3	16
4	4	1
5	4	Results grid
6	4	15
7	5	245
8	6	78
9	6	98
10	7	1
11	7	10
12	8	1
13	9	34
14	9	45
15	10	10
16	11	17
17	110	1234

query 5)

Create a new account and associate it with the process, assembly, or department to which it is applicable(10 queries for)

```

5 Enter a new Account number:
15 Enter the date of account commencement (yyyy-MM-dd):
2018-09-09
Enter the account type (1, 2, 3): 1. Department Account, 2. Assembly Account,
3
Enter the associated Process ID:
45
Done. 1 rows inserted in account table.
Done. 1 rows inserted in process account table.
Done. 1 rows inserted in record process cost table.

```

account table)

5 `SELECT * from account`

Results Messages

	accountnumber	dateofaccount
1	1	2020-09-09
2	2	2020-09-09
3	3	2023-05-04
4	4	2020-05-05
5	5	3020-09-09
6	6	2021-03-04
7	7	1983-03-02
8	8	2012-02-03
9	10	2020-03-03
10	11	2015-03-03
11	12	2012-03-04
12	13	2021-03-03
13	14	2013-09-04
14	15	2018-09-09
15	17	2021-07-07
16	555	2023-05-01
17	1234	2023-04-01

process account table :

6 `SELECT * from processaccount`

Results Messages

	accountnumber	sup_cost
1	3	0
2	12	0
3	13	0
4	14	0
5	15	0
6	555	2500

assembly account table :

2	<code>SELECT * from assemblyaccount</code>
<hr/>	
Results	Messages
	accountnumber ▾ sup_cost ▾
1	2 0
2	5 0
3	7 0 Results grid
4	8 0
5	10 0
6	11 0
7	17 0
8	555 4000

departmentaccount:

1	<code>select * from departmentaccount</code>
<hr/>	
Results	Messages
	accountnumber ▾ sup_cost ▾
1	1 0
2	4 0
3	6 0
4	555 5500

query6)

```

6 Please enter new Job Number:
9 Please enter the date of job commenced (yyyy-MM-dd):
2018-04-01
Please enter the Process ID for this job:
16
Enter the Assembly ID of the process for this job:
4
Dispatching the update query...
Done. 1 rows updated in Job table.
Dispatching the query 6(2)...
Done. 1 rows inserted in assign table..
Please select one of the options below:
11 Enter new customer:

```

```

6 Please enter new Job Number:
18 Please enter the date of job commenced (yyyy-MM-dd):
2017-04-04
Please enter the Process ID for this job:
15
Enter the Assembly ID of the process for this job:
15
Dispatching the update query...
Done. 1 rows updated in Job table.
Dispatching the query 6(2)...

```

Writable	Smart Insert	572 : 52 : 24794
----------	--------------	------------------

job table :

Results Messages

	jobNumber	dateofjobcommenced	dateofjobcompleted	job_type	laborTime
1	1	2020-09-09	NULL	NULL	NULL
2	2	2012-09-09	NULL	NULL	NULL
3	3	2013-09-09	NULL	NULL	NULL
4	4	2014-09-09	NULL	NULL	NULL
5	5	2020-09-09	NULL	NULL	NULL
6	6	2018-09-09	NULL	NULL	NULL
7	7	2019-09-09	NULL	NULL	NULL
8	8	2013-09-09	NULL	NULL	NULL
9	9	2018-04-04	NULL	NULL	NULL
10	10	2017-04-04	NULL	NULL	NULL
11	777	2023-04-01	2023-04-15	NULL	NULL

assign table:

Results Messages

	AssemblyId	processId	jobNumber
1	1	1	1
2	2	10	2
3	2	15	10
4	3	15	3
5	3	78	5
6	4	16	9
7	5	17	4
8	7	45	6
9	8	34	7
10	9	18	8
11	110	1234	777

query7)

```

7 Please enter the Job Number which is in case 6:
10 Please enter the date the job completed (yyyy-MM-dd):
2020-04-04
Please enter type of Job(1,2,3): 1.Cut Job, 2. Paint Job , 3.Fit Job
3
Please enter the labor time in hours:
43
Connecting to the database...
Dispatching the query 7(1)...
Done. 1 rows inserted in Job table..
Dispatching the query 7(4)...
Done. 1 rows inserted in fitjob table..

Please select one of the options below:
1) Enter new customer;

```

jobtable)

se.window...

	2	SELECT * from assemblyaccount
	3	SELECT * from cutjob
	4	SELECT * from paintjob
	5	SELECT * from fitjob
	6	
∅	7	SELECT * FROM Process
	8	SELECT * from Job
	9	

Results Messages

	jobNumber	dateofjobcommenced	dateofjobcompleted	job_type	laborTime
1	1	2020-09-09	2023-09-09	1	32
2	2	2012-09-09	2021-09-09	1	54
3	3	2013-09-09	2020-09-09	1	43
4	4	2014-09-09	3030-09-09	1	76
5	5	2020-09-09	2021-09-09	2	23
6	6	2018-09-09	2021-08-08	2	65
7	7	2019-09-09	2026-09-09	2	65
8	8	2013-09-09	2020-05-06	2	32
9	9	2018-04-04	2023-09-09	3	23
10	10	2017-04-04	2021-09-09	3	21
11	777	2023-04-01	2023-04-15	NULL	NULL

cutjob table:

SQLQuery_1 - naji0002-sql-server.database.windows.net.cs-dsa-4513-sql-db (naji0002)

Restricted Mode is intended for safe code browsing. Trust this window to enable all features. Manage Learn More

CONNECTIONS

Servers: naji0002-sql-server.database.windows.net

Tables:

- > dbo.account
- > dbo.Assembly
- > dbo.assemblyaccount
- > dbo.assign
- > dbo.customer
- > dbo.cut
- > dbo.cutjob
- > dbo.department
- > dbo.departmentaccount
- > dbo.fit
- > dbo.fitjob
- > dbo.Job
- > Columns
- > Keys
- > Constraints
- > Triggers
- > Indexes
- > Statistics
- > dbo.movie_night
- > dbo.order1
- > dbo.paint
- > dbo.paintjob

AZURE

SQLQuery_1 - naji0002-sql-server.database.windows.net.cs-dsa-4513-sql-db (naji0002) 1 | task4tables1.sql - disconnected 1

Run Cancel Disconnect Change Database: cs-dsa-4513-sql-db Estimated Plan Enable Actual Plan Parse

```

1 select * from departmentaccount
2 SELECT * from assemblyaccount
3 SELECT * from cutjob
4 SELECT * from paintjob
5 SELECT * from fitjob
6
7 SELECT * FROM Process
8 SELECT * from Job

```

Results Messages

jobNumber	labortime	material	amountoftime	typeofmachine
1	32	wood	21	metal
2	54	plastic	21	car
3	43	metal	43	toyota
4	76	wood	21	camry

Ln 4, Col 1 (21 selected) Spaces: 4 UTF-8 LF 4 rows MSSQL 00:00:00 naji0002-sql-server.database.windows.net : cs-dsa-4513-sql-db

paintjob:

2 SELECT * from assemblyaccount

3 SELECT * from cutjob

4 **SELECT * from paintjob**

5 SELECT * from fitjob

6

7 SELECT * FROM Process

8 SELECT * from Job

Results Messages

jobNumber	labortime	color	colorvolume
1	23	blue	23
2	65	gray	2
3	65	black	3
4	32	red	4

```
fitjob:  
se.window...  
2   SELECT * from assemblyaccount  
3   SELECT * from cutjob  
4   SELECT * from paintjob  
5   SELECT * from fitjob  
6   |  
7   SELECT * FROM Process  
8   SELECT * from Job  
9
```

Results Messages

	jobNumber	labortime
1	9	23
2	10	21

query8)

```
8
Please enter a new Transaction Number:
1
Please enter the cost of the transaction:
23.5
Please enter the corresponding Job Number:
2
Connecting to the database...
Dispatching the query 8(a)...
Done. 1 rows inserted in "transaction1" table..
Dispatching the query 8(b)...
Done. 1 rows inserted in "record" table..
Dispatching the query 8(c)...
Assembly ID: 2
Dispatching the query 8(f)...
assembly account: 89
Dispatching query 8(i)...
Dispatching query 8(L)....
Done. 1 rows inserted in "Assembly Account" table..
Process ID: 2
Dispatching the query 8(g)...
Process Account: 101
Dispatching query 8(j)...
8.0
Dispatching query 8(m)....
Done. 1 rows inserted in "Process Account" table..
Dispatching the query 8(d)...
Department ID: 22
Dispatching the query 8(e)...
Department Account: 66
Dispatching query 8(h)...
Dispatching query 8(K)....
Done. 1 rows inserted in "departmentaccount" table..
```

results:

transaction_id	sup_cost
1	555

query9-1)

17) Quit!

9

Please enter Assembly ID:

1

Connecting to the database...

Dispatching the query...

Details-1 for Assembly ID 1: 200.00

	AssemblyId	dateordered	AssemblyDetails
1	1	2020-02-03	new
2	2	2020-10-10	good
3	3	2023-04-04	nice
4	4	2021-02-08	bad
5	5	2021-02-08	test
6	6	1998-03-03	nice nice
7	7	1976-00-00	test

3 queries for 10)

1)

```

10
Please enter the Department number that you want find the labor cost:
342
Please enter the date the job completed (yyyy-MM-dd):
2021-09-09

Dispatching the query 1...
10
Dispatching the query 10(2)...
2
Dispatching the query 10(c)...
The total labor time for 342 department for jobs completed during the 202

```

2)

```

10
Please enter the Department number that you want find the labor cost:
110
Please enter the date the job completed (yyyy-MM-dd):
2021-09-09

Dispatching the query 1...
78
Dispatching the query 10(2)...
99
Dispatching the query 10(2)...
245
Dispatching the query 10(2)...
324
Dispatching the query 10(2)...
1234
Dispatching the query 10(2)...
5
Dispatching the query 10(c)...
777
Dispatching the query 10(c)...
The total labor time for 110 department for jobs completed during the 2021-09-09 date is: 23 hours.

```

3)

```

10
Please enter the Department number that you want find the labor cost:
130
Please enter the date the job completed (yyyy-MM-dd):
3030-09-09

Dispatching the query 1...
17
Dispatching the query 10(2)...
4
Dispatching the query 10(c)...
The total labor time for 130 department for jobs completed during the 3030-09-09 date is: 76 hours.

Please select one of the options below:
1) Enter new customer:

```

query 11)

1)

```
--, ----  
11  
Please enter the assembly ID which has passed so far :  
  
6  
Dispatching the query 11...  
Process ID Department Number  
10      342  
15      167  
16      112  
17      130  
78      110  
99      110  
245     110  
324     110  
654     765  
1234    110  
  
Please select one of the options below:  
1) Enter new customer;  
2) Enter a new department;  
3) Enter a new Process ;  
4) Enter a new Assembly:  
5) Enter a new Account Number:  
6) Enter a new Job:  
7) At the completion of a job, enter the date it completed:  
8) Enter a transaction-no and its sup-cost and update all the costs:  
9) Retrieve the total cost incurred on an assembly-id  
10)Retrieve total labor time within a Department for a given day:  
11)Retrieve the process through which a given assembly-id has passed:
```

2)

```
11  
Please enter the assembly ID which has passed so far :  
1  
Dispatching the query 11...  
Process ID Department Number  
10      342  
15      167  
16      112  
17      130  
78      110  
99      110  
245     110  
324     110  
654     765  
1234    110  
  
Please select one of the options below:  
1) Enter new customer;  
2) Enter a new department;  
3) Enter a new Process ;  
4) Enter a new Assembly:  
5) Enter a new Account Number:  
6) Enter a new Job:  
7) At the completion of a job, enter the date it completed:  
8) Enter a transaction-no and its sup-cost and update all the costs:  
9) Retrieve the total cost incurred on an assembly-id  
10)Retrieve total labor time within a Department for a given day:  
11)Retrieve the process through which a given assembly-id has passed:
```

3)

```
Problems Servers Terminal Data Source Explorer Properties Console X
fina [Java Application] /Library/Java/JavaVirtualMachines/jdk-11.jdk/Contents/Home/bin/java (Nov 13, 2023, 9:48:39 PM) [pid: 5413]
18) Quit!
11
Please enter the assembly ID which has passed so far :
3
Dispatching the query 11...
Process ID Department Number
10      342
15      167
16      112
17      130
78      110
99      110
245     110
324     110
654     765
1234    110

Please select one of the options below:
1) Enter new customer;
2) Enter a new department;
3) Enter a new Process ;
4) Enter a new Assembly;
5) Enter a new Account Number:
6) Enter a new Job;
7) At the completion of a job, enter the date it completed:
8) Enter a transaction-no and its sup-cost and update all the costs:
9) Retrieve the total cost incurred on an assembly-id
10)Retrieve total labor time within a Department for a given day:
```

query12)

12-1)

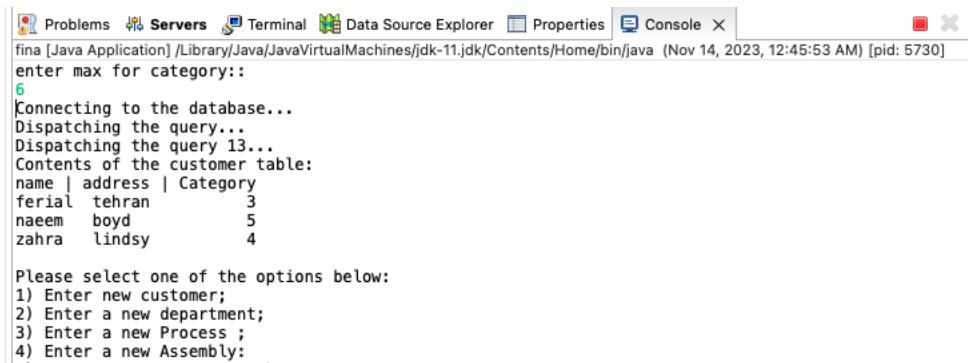
```
14)Change the color of a given paint job
15)Import: enter new customers from a data file:
16)Export: Retrieve the customers
17) Quit!
12
enter min for category:
2
enter max for category::
6
Connecting to the database...
Dispatching the query...
Dispatching the query 13...
Contents of the customer table:
name | address | Category
ferial  tehran      3
jakie   moore       2
naeem   boyd        5
zahra   lindsay     4
```

12-2)

```
fina [Java Application] /Library/Java/JavaVirtualMachines/jdk-11.jdk/Contents/Home/bin/java (Nov 14, 202
Dispatching the query...
Dispatching the query 13...
Contents of the customer table:
name | address | Category
Customer 110    110 Customer Address           1
ferial  tehran      3
jakiie moore       2
john   norman       1
naeem   boyd         5
zahra   lindsay     4

Please select one of the options below:
1) Enter new customer;
2) Enter a new department;
3) Enter a new Process ;
4) Enter a new Assembly;
5) Enter a new Account Number:
6) Enter a new Job:
```

12-3)



```
Problems Servers Terminal Data Source Explorer Properties Console X
fina [Java Application] /Library/Java/JavaVirtualMachines/jdk-11.jdk/Contents/Home/bin/java (Nov 14, 2023, 12:45:53 AM) [pid: 5730]
enter max for category:
6
Connecting to the database...
Dispatching the query...
Dispatching the query 13...
Contents of the customer table:
name | address | Category
ferial  tehran      3
naeem   boyd         5
zahra   lindsay     4

Please select one of the options below:
1) Enter new customer;
2) Enter a new department;
3) Enter a new Process ;
4) Enter a new Assembly;
```

13)

13-1:

```
10)Retrieve total labor time within a department for a given day:
11)Retrieve the process through which a given assembly-id has passed:
12)Retrieve the customers (in name order) whose category is in a given range:
13)Delete all cut-jobs whose job-no is in a given range:
14)Change the color of a given paint job
15)Import: enter new customers from a data file:
16)Export: Retrieve the customers
17) Quit!
13
minimum for job number:
1
maximum for job number:
7
Connecting to the database...
Dispatching the query 13(1)...
Done. 2 rows deleted in cutjob table..
Dispatching the query 13(2)...
Done. 0 rows deleted in assign table..
Dispatching the query 13(3)...
```

13-2:

```

12)Retrieve the customers (in name order) whose category is in a given range;
13)Delete all cut-jobs whose job-no is in a given range;
14)Change the color of a given paint job
15)Import: enter new customers from a data file;
16)Export: Retrieve the customers
17) Quit!
13
minimum for job number:
3
maximum for job number:
5
Connecting to the database...
Dispatching the query 13(1)...
Done. 0 rows deleted in cutjob table..
Dispatching the query 13(2)...
Done. 0 rows deleted in assign table..
Dispatching the query 13(3)...
Done. 1 rows deleted in job table..

```

13-3:

```

13)Delete all cut-jobs whose job-no is in a given range;
14)Change the color of a given paint job
15)Import: enter new customers from a data file;
16)Export: Retrieve the customers
17) Quit!
13
minimum for job number:
0
maximum for job number:
2
Connecting to the database...
Dispatching the query 13(1)...
Done. 1 rows deleted in cutjob table..
Dispatching the query 13(2)...
Done. 1 rows deleted in assign table..
Dispatching the query 13(3)...
Done. 1 rows deleted in job table..

```

Please select one of the options below:

cutjob table at the end:

18

Results Messages					
	jobNumber	labortime	material	amountoftime	typeofmachine
1	7	120	Steel	60	car
2	8	120	Steel	60	car

14)

for job number 5 color was blue I change it to orange.

Results Messages

	jobNumber	labortime	color	colorvolume
1	5	23	blue	23
2	6	65	gray	2
3	7	65	black	3
4	8	32	red	4

The screenshot shows a Java application window with two tabs: "Results" and "Messages". The "Results" tab displays a table with four rows and five columns: jobNumber, labortime, color, and colorvolume. The "Messages" tab shows a terminal session with the following text:

```

fina [Java Application] /Library/Java/JavaVirtualMachines/jdk-11.jdk/Contents/Home/bin/java (Nov 14, 2023, 12:58:51 PM) [pid: 6466]
14)Change the color of a given paint job
15)Import: enter new customers from a data file:
16)Export: Retrieve the customers
17) Quit!
14
enter job number that you want change color:
5
enter new color:
orange
Connecting to the database...
Dispatching the query 14...
Done. 1 rows updated in painjob table..

```

Results Messages

	jobNumber	labortime	color	colorvolume
1	5	23	orange	23
2	6	65	gray	2
3	7	65	black	3
4	8	32	red	4

14-2)

for jobnumber 6 the color is gray I want to change it to blue:

Results Messages

	jobNumber	labortime	color	colorvolume
1	5	23	orange	23
2	6	65	gray	2
3	7	65	black	3
4	8	32	red	4

- 11) Retrieve the process through which a given assembly-ID has passed:
- 12) Retrieve the customers (in name order) whose category is in a given range:
- 13) Delete all cut-jobs whose job-no is in a given range:
- 14) Change the color of a given paint job
- 15) Import: enter new customers from a data file:
- 16) Export: Retrieve the customers
- 17) Quit!

```
14
enter job number that you want change color:
6
enter new color:
blue
Connecting to the database...
Dispatching the query 14...
Done. 1 rows updated in painjob table..
```

13 VALUES (5, 120, 'Steel', 60, 'car')

Results Messages

	jobNumber	labortime	color	colorvolume
1	5	23	orange	23
2	6	65	blue	2
3	7	65	black	3
4	8	32	red	4

14-3)
for jobnumber7 the color is black I want to change it to green:

```
-- 13 VALUES (5, 120, 'Steel', 60, 'car')
```

Results Messages

	jobNumber	labortime	color	colorvolume
1	5	23	orange	23
2	6	65	blue	2
3	7	65	black	3
4	8	32	red	4

9) Retrieve the total cost incurred on an assembly-id
10) Retrieve total labor time within a Department for a given day:
11) Retrieve the process through which a given assembly-id has passed:
12) Retrieve the customers (in name order) whose category is in a given range:
13) Delete all cut-jobs whose job-no is in a given range:
14) Change the color of a given paint job
15) Import: enter new customers from a data file:
16) Export: Retrieve the customers
17) Quit!
14
enter job number that you want change color:
7
enter new color:
green
Connecting to the database...
Dispatching the query 14...
Done. 1 rows updated in painjob table..

```
-- 13 VALUES (5, 120, 'Steel', 60, 'car')
```

Results Messages

	jobNumber	labortime	color	colorvolume
1	5	23	orange	23
2	6	65	blue	2
3	7	65	green	3
4	8	32	red	4

part 7)

show all customer:

15-import)

```
fina [Java Application] /Library/Java/JavaVirtualMachines/jdk-11.jdk/Contents/  
4) Enter a new Assembly:  
5) Enter a new Account Number:  
6) Enter a new Job:  
7) At the completion of a job, enter the date it complet  
8) Enter a transaction-no and its sup-cost and update a  
9) Retrieve the total cost incurred on an assembly-id  
10)Retrieve total labor time within a Department for a  
11)Retrieve the process through which a given assembly-  
12)Retrieve the customers (in name order) whose category  
13)Delete all cut-jobs whose job-no is in a given range:  
14)Change the color of a given paint job  
15)Import: enter new customers from a data file:  
16)Export: Retrieve the customers  
17) Quit!
```

15

Where is path of file you want to enter?:

test2.csv

```
Dispatching the query 1...  
Done. 1 rows inserted in customer table..  
Dispatching the query 1...  
Done. 1 rows inserted in customer table..  
Dispatching the query 1...  
Done. 1 rows inserted in customer table..  
Dispatching the query 1...  
Done. 1 rows inserted in customer table..  
Dispatching the query 1...  
Done. 1 rows inserted in customer table..  
Dispatching the query 1...  
Done. 1 rows inserted in customer table..  
Dispatching the query 1...  
Done. 1 rows inserted in customer table..  
Dispatching the query 1...  
Done. 1 rows inserted in customer table..
```

result:

AutoSave OFF

Home Insert Draw Page L

Paste Calibri (Body)

B I U

× Possible Data Loss Some features

	A	B	C
1	dodo	seool	2
2	dodok	teh	2
3	jakie	moore	2
4	kado	boyd	2
5	mohammad	lindsay	2
6	nana	feri	2
7	niki	dof	2
8	nokhod	TEH	2
9			

16_export)

```
fina [Java Application] /Library/Java/JavaVirtualMachines/jdk-11.jdk/Contents/Home/bin/java (Nov 14, 2023, 10:43:  
15)Delete all cut-jobs whose job-no is in a given range:  
14)Change the color of a given paint job  
15)Import: enter new customers from a data file:  
16)Export: Retrieve the customers  
17) Quit!  
16  
enter min for category:  
2  
enter max for category:  
7  
enter output file name  
test  
Connecting to the database...  
Dispatching the query...  
Dispatching the query 12...  
  
Please select one of the options below:  
1) Enter new customer;  
2) Enter a new department;  
3) Enter a new Process ;  
4) Enter a new Assembly:  
5) Enter a new Account Number:  
6) Enter a new Job:  
7) At the completion of a job, enter the date it completed:  
8) Enter a transaction-no and its sup-cost and update all the costs:  
9) Retrieve the total cost incurred on an assembly-id  
10)Retrieve total labor time within a Department for a given day:  
11)Retrieve the process through which a given assembly-id has passed:  
12)Retrieve the customers (in name order) whose category is in a given range:  
13)Delete all cut-jobs whose job-no is in a given range:  
14)Change the color of a given paint job  
15)Import: enter new customers from a data file:  
16)Export: Retrieve the customers  
17) Quit!
```

result:

A screenshot of a Microsoft Word document. The ribbon at the top shows 'Home' as the active tab. The 'Clipboard' group contains icons for Paste, Cut, Copy, and Undo/Redo. The 'Font' group shows 'Calibri (Body)' and '12'. The 'Text' group includes bold (B), italic (I), underline (U), and font color (orange). A status bar at the bottom displays a warning: 'Possible Data Loss Some features might be unavailable'.

	A	B	C	D
1	dodo	seool		2
2	dodok	teh		2
3	ferial	tehran		3
4	jakie	moore		2
5	jimmy	bipar		5
6	kado	boyd		2
7	melika	lamp		6
8	mohammad	lindsay		2
9	naeem	boyd		5
10	nana	feri		2
11	niki	dof		2
12	nikoo	mirdamad		5
13	nokhod	TEH		2
14	titi	fofo		3
15	zahra	lindsay		4
16				
17				
18				

17-exit:

```
// At the completion of a job, enter the date it completed:  
8) Enter a transaction-no and its sup-cost and update all t  
9) Retrieve the total cost incurred on an assembly-id  
10) Retrieve total labor time within a Department for a give  
11) Retrieve the process through which a given assembly-id ha  
12) Retrieve the customers (in name order) whose category is .  
13) Delete all cut-jobs whose job-no is in a given range:  
14) Change the color of a given paint job  
15) Import: enter new customers from a data file:  
16) Export: Retrieve the customers  
17) Quit!  
17  
Exiting! bye!
```

errors:

- error with Datatype:

```
1  INSERT INTO Fit (ProcessId, Fittype) VALUES ('value1', 'value2');  
2  
3  
4  
5  
6
```

Messages

```
11:33:59 AM    Started executing query at Line 1  
                Msg 245, Level 16, State 1, Line 1  
                Conversion failed when converting the varchar value 'value1' to data type int.  
                Total execution time: 00:00:00.062
```

-Error for unavailable processid:

```
1  INSERT INTO Fit (ProcessId, Fittype) VALUES (792, 'value2');
2
3
4
5
6
```

Messages

11:35:02 AM [Started executing query at Line 1](#)
Msg 547, Level 16, State 0, Line 1
The INSERT statement conflicted with the FOREIGN KEY constraint "FK_fit__processid_695C9DA1". The conflict occurred in database "cs-dsa-4513-sql-db", table "dbo.process", column 'processid'.
The statement has been terminated.
Total execution time: 00:00:00.096

-error for outrange customer insert:

```
1  INSERT INTO customer (cname, caddress, category) VALUES ('Name', 'Address', 12);
2
3
4
5
```

Messages

11:27:05 AM [Started executing query at Line 1](#)
Msg 547, Level 16, State 0, Line 1
The INSERT statement conflicted with the CHECK constraint "CHK_category". The conflict occurred in database "cs-dsa-4513-sql-db", table "dbo.customer", column 'category'.
The statement has been terminated.
Total execution time: 00:00:00.104

-error for category:

```
<terminated> fina [Java Application] /Library/Java/JavaVirtualMachines/jdk-11.jdk/Contents/Home/bin/java (Nov 14, 2023, 10:56:23 PM – 10:56:43 PM) [pid: 9996]
Please select one of the options below:
1) Enter new customer;
2) Enter a new department;
3) Enter a new Process ;
4) Enter a new Assembly;
5) Enter a new Account Number;
6) Enter a new Job;
7) At the completion of a job, enter the date it completed;
8) Enter a transaction-no and its sup-cost and update all the costs;
9) Retrieve the total cost incurred on an assembly-id
10)Retrieve total labor time within a Department for a given day;
11)Retrieve the process through which a given assembly-id has passed;
12)Retrieve the customers (in name order) whose category is in a given range;
13)Delete all cut-jobs whose job-no is in a given range;
14)Change the color of a given paint job
15)Import: enter new customers from a data file;
16)Export: Retrieve the customers
17) Quit!
1
Please enter customer cname:
niloofar
Please enter customer address:
tehran
Please enter customer category:
121
Connecting to the database...
niloofar@dispatching the query...
Exception in thread "main" com.microsoft.sqlserver.jdbc.SQLServerException: The INSERT statement conflicted with the CHECK constraint "CHK_category". The conflict occurred in database "master", table "Customer". This statement has been terminated.
        at com.microsoft.sqlserver.jdbc.SQLServerException.makeFromDatabaseError(SQLServerException.java:259)
        at com.microsoft.sqlserver.jdbc.SQLServerStatement.getNextResult(SQLServerStatement.java:1695)
        at com.microsoft.sqlserver.jdbc.SQLServerPreparedStatement.doExecutePreparedStatement(SQLServerPreparedStatement.java:648)
        at com.microsoft.sqlserver.jdbc.SQLServerPreparedStatement$RepStmt$ExecCmd.doExecute(SQLServerPreparedStatement.java:567)
        at com.microsoft.sqlserver.jdbc.TDSCommand.execute(IOBuffer.java:7675)
        at com.microsoft.sqlserver.jdbc.SQLServerConnection.executeCommand(SQLServerConnection.java:4137)
        at com.microsoft.sqlserver.jdbc.SQLServerStatement.executeCommand(SQLServerStatement.java:272)
        at com.microsoft.sqlserver.jdbc.SQLServerStatement.executeStatement(SQLServerStatement.java:246)
        at com.microsoft.sqlserver.jdbc.SQLServerPreparedStatement.executeUpdate(SQLServerPreparedStatement.java:512)
        at fina.main(fina.java:193)
```

-error for date type:

```

180 System.out.println("Connecting to the database...");
181 // Get a database connection and prepare a query statement
182 try (final Connection connection = DriverManager.getConnection(URL)) {
183     try (
184         final PreparedStatement statement = connection.prepareStatement("QUERY TEMPLATE 1"))
        
```

Problems Terminal Data Source Explorer Properties Console X

<terminated> fina [Java Application] /Library/Java/JavaVirtualMachines/jdk-11.jdk/Contents/Home/bin/java (Nov 14, 2023, 11:03:13 PM – WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM

Please select one of the options below:

- 1) Enter new customer;
- 2) Enter a new department;
- 3) Enter a new Process ;
- 4) Enter a new Assembly:
- 5) Enter a new Account Number:
- 6) Enter a new Job:
- 7) At the completion of a job, enter the date it completed:
- 8) Enter a transaction-no and its sup-cost and update all the costs:
- 9) Retrieve the total cost incurred on an assembly-id
- 10) Retrieve total labor time within a Department for a given day:
- 11) Retrieve the process through which a given assembly-id has passed:
- 12) Retrieve the customers (in name order) whose category is in a given range:
- 13) Delete all cut-jobs whose job-no is in a given range:
- 14) Change the color of a given paint job
- 15) Import: enter new customers from a data file:
- 16) Export: Retrieve the customers
- 17) Quit!

6

Please enter new Job Number:

67

Please enter the date of job commenced (yyyy-MM-dd):

20200909

Exception in thread "main" java.lang.IllegalArgumentException
at java.sql/java.sql.Date.valueOf(Date.java:141)
at fina.main(fina.java:555)

- conflict with foreign key

```

184 final PreparedStatement statement = connection.prepareStatement("QUERY TEMPLATE 1"));
        
```

Problems Terminal Data Source Explorer Properties Console X

<terminated> fina [Java Application] /Library/Java/JavaVirtualMachines/jdk-11.jdk/Contents/Home/bin/java (Nov 14, 2023, 11:06:10 PM – 11:06:40 PM) [pid: 10106]

9) Retrieve the total cost incurred on an assembly-id

10) Retrieve total labor time within a Department for a given day:

11) Retrieve the process through which a given assembly-id has passed:

12) Retrieve the customers (in name order) whose category is in a given range:

13) Delete all cut-jobs whose job-no is in a given range:

14) Change the color of a given paint job

15) Import: enter new customers from a data file:

16) Export: Retrieve the customers

17) Quit!

6

Please enter new Job Number:

436

Please enter the date of job commenced (yyyy-MM-dd):

2023-09-09

Please enter the Process ID for this job:

24

Enter the Assembly ID of the process for this job:

21

Dispatching the update query...

Done. 1 rows updated in Job table.

Dispatching the query 6(2)...

Exception in thread "main" com.microsoft.sqlserver.jdbc.SQLServerException: The INSERT statement conflicted with the FOREIGN KEY constraint "FK__assign".
at com.microsoft.sqlserver.jdbc.SQLServerException.makeFromDatabaseError(SQLServerException.java:259)
at com.microsoft.sqlserver.jdbc.SQLServerStatement.getNextResult(SQLServerStatement.java:1695)
at com.microsoft.sqlserver.jdbc.SQLServerPreparedStatement.doExecutePreparedStatement(SQLServerPreparedStatement.java:648)
at com.microsoft.sqlserver.jdbc.SQLServerPreparedStatement\$PrepStmtExecCmd.doExecute(SQLServerPreparedStatement.java:567)
at com.microsoft.sqlserver.jdbc.TDSCommand.execute(IOBuffer.java:7675)
at com.microsoft.sqlserver.jdbc.SQLServerConnection.executeCommand(SQLServerConnection.java:4137)
at com.microsoft.sqlserver.jdbc.SQLServerStatement.executeCommand(SQLServerStatement.java:272)
at com.microsoft.sqlserver.jdbc.SQLServerStatement.executeUpdate(SQLServerStatement.java:246)
at com.microsoft.sqlserver.jdbc.SQLServerPreparedStatement.executeUpdate(SQLServerPreparedStatement.java:512)
at fina.main(fina.java:589)

task7)

show the table customer completely:

cname	caddress	category
Customer 110	110 Customer Address	1
dodo	seool	2
dodok	teh	2
ferial	tehran	3
jakie	moore	2
john	norman	1
kado	boyd	2
lolo	mey	9
mohammad	lindsay	2
naeem	boyd	5
nana	feri	2
navid	canada	8
nazi	canada	7
naziq	boyd	1
niki	dof	2
nokhod	TEH	2
titi	fofo	3
zahra	lindsay	4

7-1)

doing query 12 on it :

1<category<=7

cname	caddress	category
dodo	seool	2
dodok	teh	2
ferial	tehran	3
jakie	moore	2
kado	boyd	2
mohammad	lindsay	2
naeem	boyd	5
nana	feri	2
nazi	canada	7
niki	dof	2
nokhod	TEH	2
titi	fofo	3
zahra	lindsay	4

doing query 1)

insert customer:

The Customer Table:

- cname: mike
- caddress: kirk
- category: 9

New Customer successfully inserted.

[See all Customers.](#)

I also add melika I forgot to get screenshot for it.

The Customer Table:

- cname: nikoo
- caddress: mirdamad
- category: 5

New Customer successfully inserted.

[See all Customers.](#)

The Customer Table:

- cname: jimmy
- caddress: bipar
- category: 5

New Customer successfully inserted.

[See all Customers.](#)

again query 12)

ename	caddress	category
dodo	seool	2
dodok	teh	2
ferial	tehran	3
jakie	moore	2
jimmy	bipar	5
kado	boyd	2
melika	lamp	6
mohammad	lindsay	2
naeem	boyd	5
nana	feri	2
nazi	canada	7
niki	dof	2
nikoo	mirdamad	5
nokhod	TEH	2
titi	fofo	3
zahra	lindsay	4