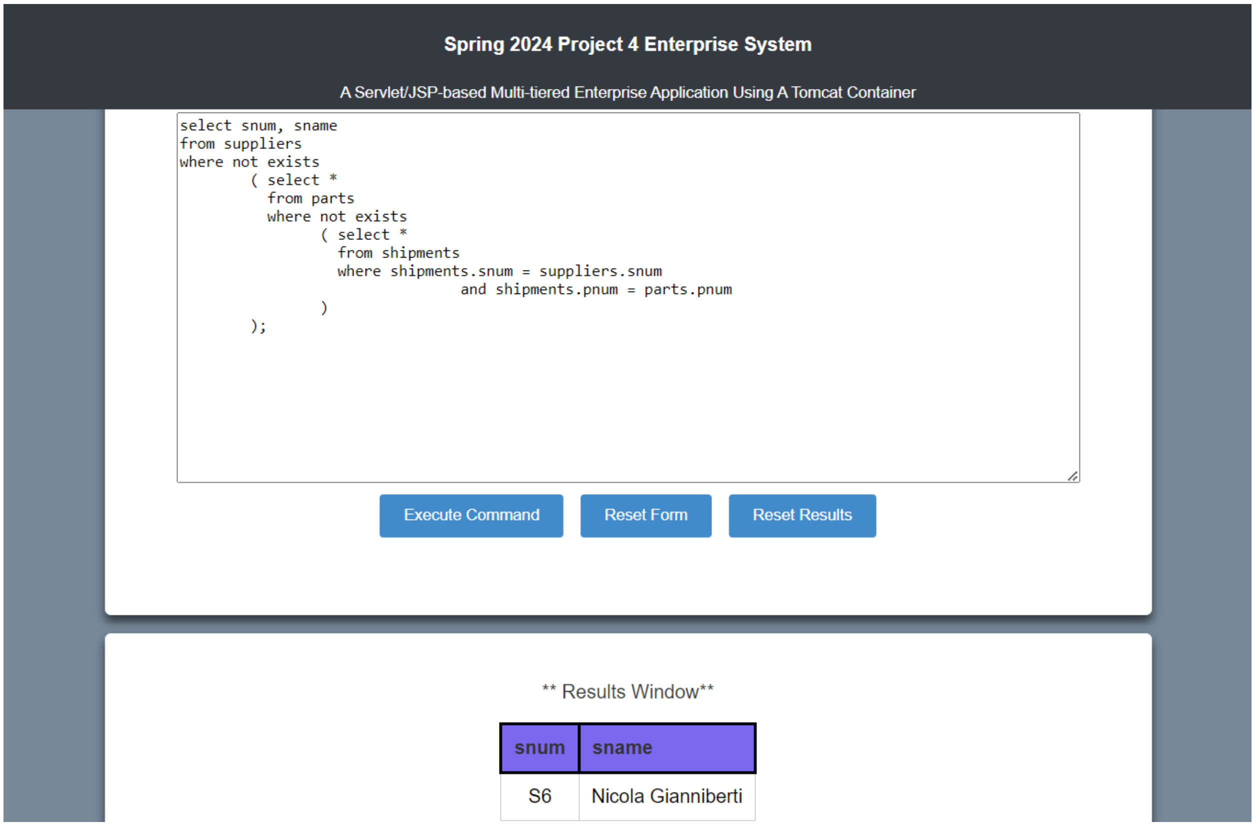
Root Commands

Command 1



Spring 2024 Project 4 Enterprise System

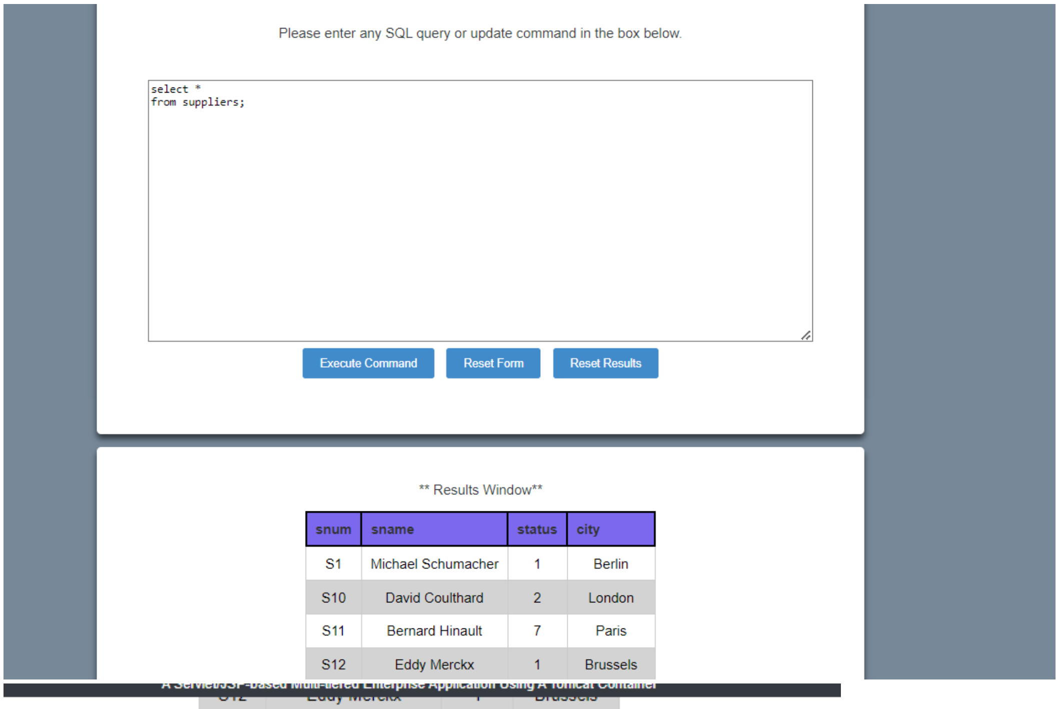
A Servlet/JSP-based Multi-tiered Enterprise Application Using A Tomcat Container

```
select snum, sname
from suppliers
where not exists
        ( select *
          from parts
          where not exists
                ( select *
                  from shipments
                  where shipments.snum = suppliers.snum
                                and shipments.pnum = parts.pnum
                )
        );
```

** Results Window**

snum	sname
S6	Nicola Gianniberti

Command 2A

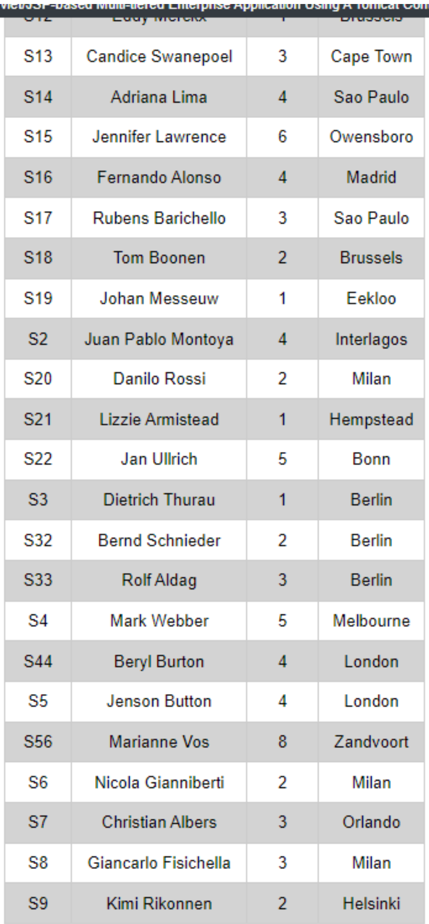


Please enter any SQL query or update command in the box below.

```
select *
from suppliers;
```

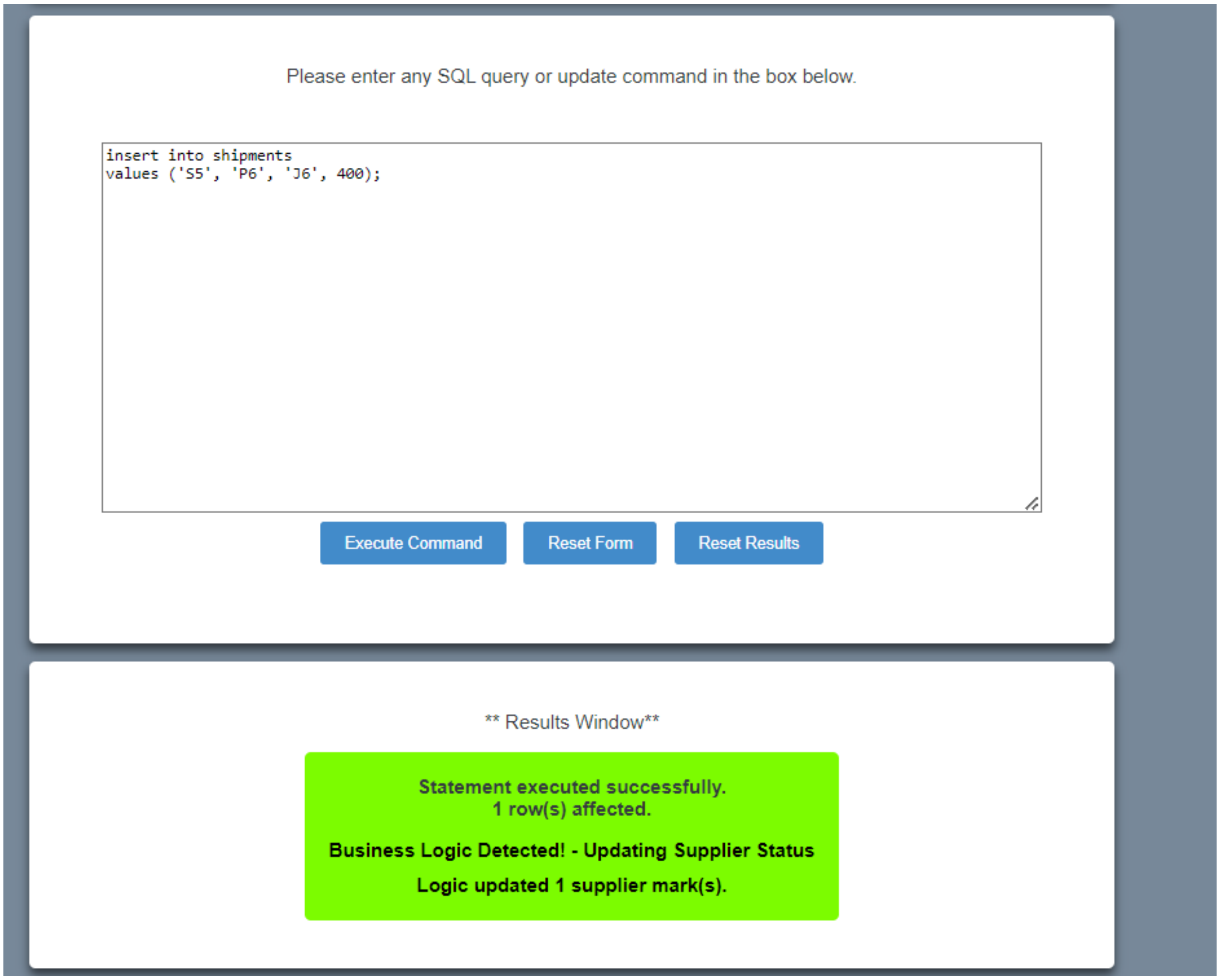
Execute Command
Reset Form
Reset Results
A Servlet/JSP-based Multi-tiered Enterprise Application Using A Tomcat Container

** Results Window**



snum	sname	status	city
S1	Michael Schumacher	1	Berlin
S10	David Coulthard	2	London
S11	Bernard Hinault	7	Paris
S12	Eddy Merckx	1	Brussels
S13	Candice Swanepoel	3	Cape Town
S14	Adriana Lima	4	Sao Paulo
S15	Jennifer Lawrence	6	Owensboro
S16	Fernando Alonso	4	Madrid
S17	Rubens Barichello	3	Sao Paulo
S18	Tom Boonen	2	Brussels
S19	Johan Messeuw	1	Eekloo
S2	Juan Pablo Montoya	4	Interlagos
S20	Danilo Rossi	2	Milan
S21	Lizzie Armistead	1	Hempstead
S22	Jan Ullrich	5	Bonn
S3	Dietrich Thurau	1	Berlin
S32	Bernd Schnieder	2	Berlin
S33	Rolf Aldag	3	Berlin
S4	Mark Webber	5	Melbourne
S44	Beryl Burton	4	London
S5	Jenson Button	4	London
S56	Marianne Vos	8	Zandvoort
S6	Nicola Gianniberti	2	Milan
S7	Christian Albers	3	Orlando
S8	Giancarlo Fisichella	3	Milan
S9	Kimi Rikonnen	2	Helsinki

Command 2B



Please enter any SQL query or update command in the box below.

```
insert into shipments
values ('S5', 'P6', 'J6', 400);
```

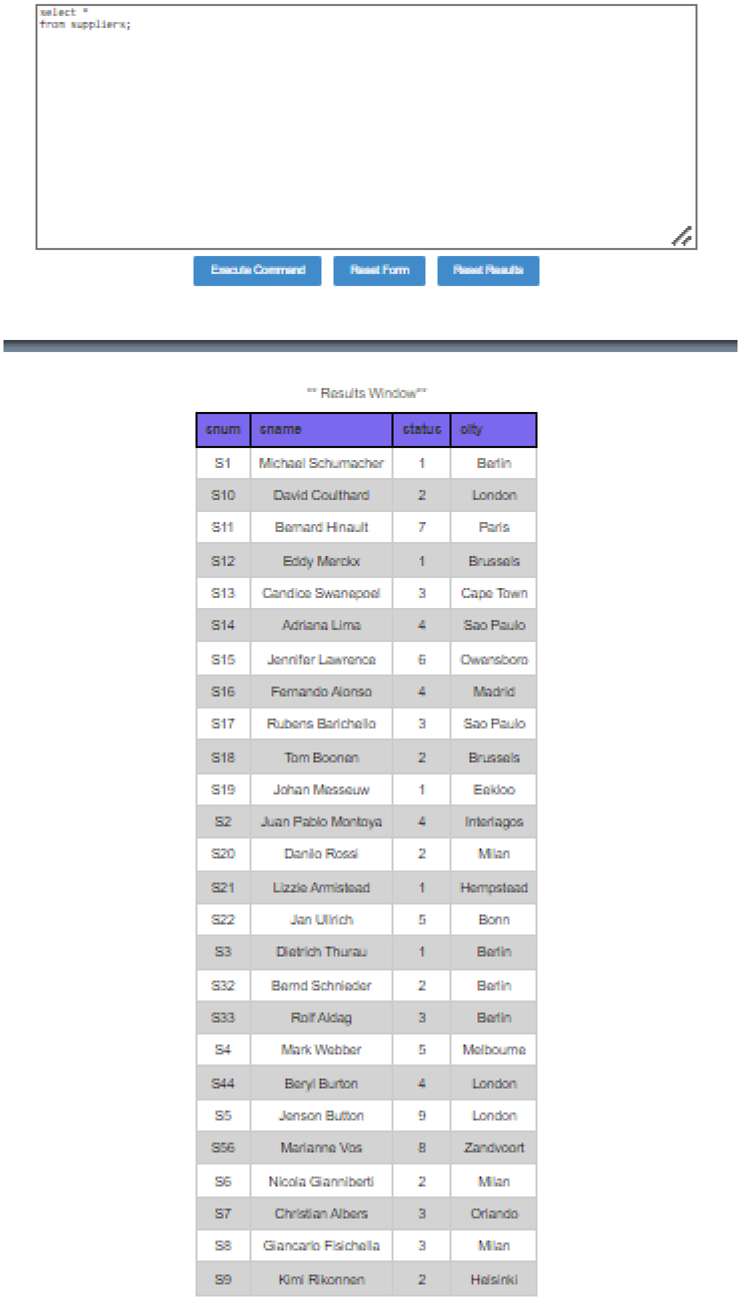
** Results Window**

Statement executed successfully.
1 row(s) affected.

Business Logic Detected! - Updating Supplier Status

Logic updated 1 supplier mark(s).

Command 2C

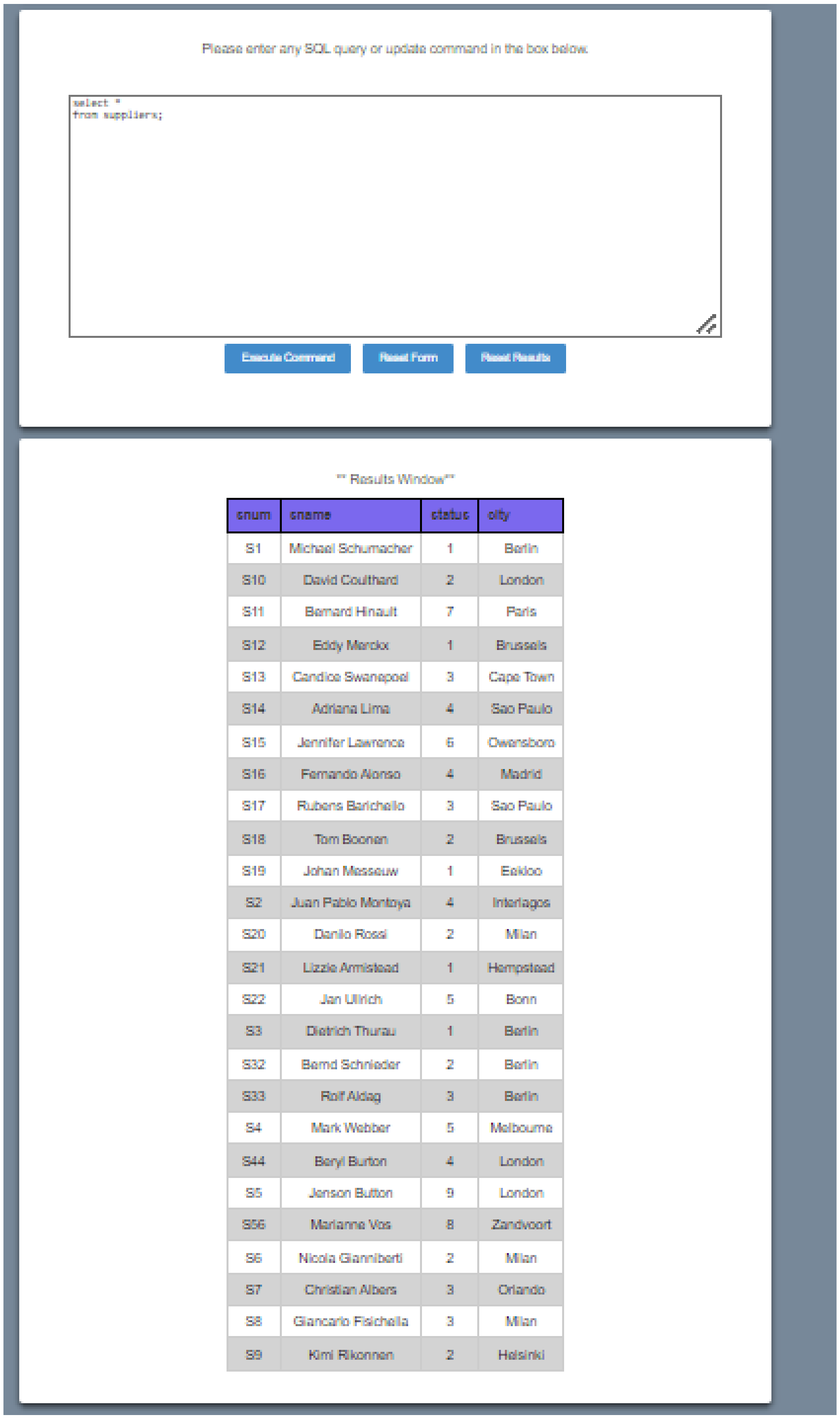


```
select *
from suppliers;
```

** Results Window**

snum	sname	status	city
S1	Michael Schumacher	1	Berlin
S10	David Coulthard	2	London
S11	Bernard Hinault	7	Paris
S12	Eddy Merckx	1	Brussels
S13	Candice Swanepoel	3	Cape Town
S14	Adriana Lima	4	Sao Paulo
S15	Jennifer Lawrence	6	Owensboro
S16	Fernando Alonso	4	Madrid
S17	Rubens Barichello	3	Sao Paulo
S18	Tom Boonen	2	Brussels
S19	Johan Messeuw	1	Eekloo
S2	Juan Pablo Montoya	4	Interlagos
S20	Danilo Rossi	2	Milan
S21	Lizzie Armistead	1	Hempstead
S22	Jan Ullrich	5	Bonn
S3	Dietrich Thurau	1	Berlin
S32	Bernd Schnieder	2	Berlin
S33	Rolf Aldag	3	Berlin
S4	Mark Webber	5	Melbourne
S44	Beryl Burton	4	London
S5	Jenson Button	9	London
S56	Marianne Vos	8	Zandvoort
S6	Nicola Giannilberti	2	Milan
S7	Christian Albers	3	Orlando
S8	Giancarlo Fisichella	3	Milan
S9	Kimi Rikonnen	2	Helsinki

Command 3A



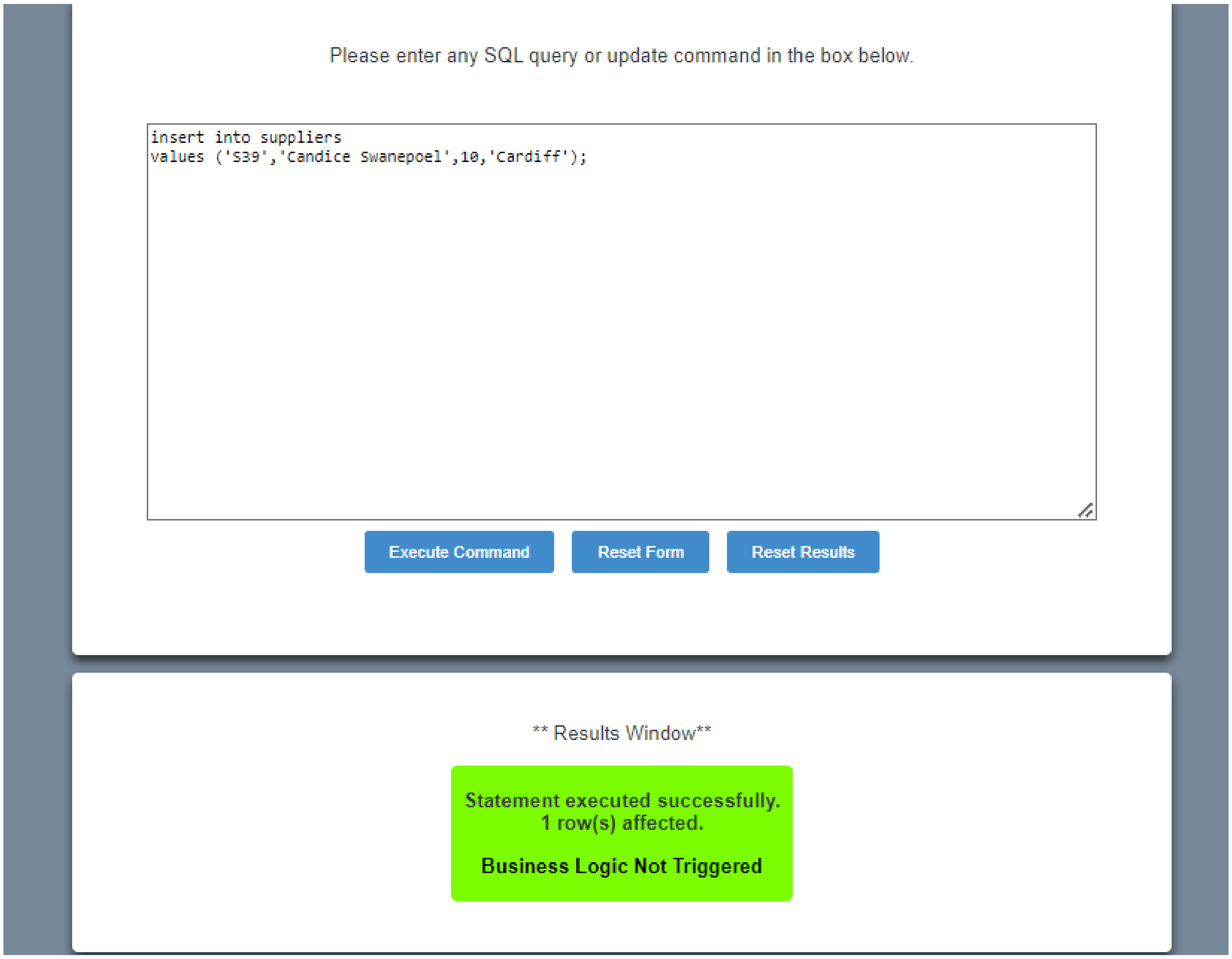
Please enter any SQL query or update command in the box below.

```
select *
from suppliers;
```

** Results Window**

snum	sname	status	city
S1	Michael Schumacher	1	Berlin
S10	David Coulthard	2	London
S11	Bernard Hinault	7	Paris
S12	Eddy Merckx	1	Brussels
S13	Candice Swanepoel	3	Cape Town
S14	Adriana Lima	4	Sao Paulo
S15	Jennifer Lawrence	6	Owensboro
S16	Fernando Alonso	4	Madrid
S17	Rubens Barichello	3	Sao Paulo
S18	Tom Boonen	2	Brussels
S19	Johan Messeuw	1	Eekloo
S2	Juan Pablo Montoya	4	Interlagos
S20	Danilo Rossi	2	Milan
S21	Lizzie Armistead	1	Hempstead
S22	Jan Ullrich	5	Bonn
S3	Dietrich Thurau	1	Berlin
S32	Bernd Schnieder	2	Berlin
S33	Rolf Aldag	3	Berlin
S4	Mark Webber	5	Melbourne
S44	Beryl Burton	4	London
S5	Jenson Button	9	London
S56	Marianne Vos	8	Zandvoort
S6	Nicola Gianniberti	2	Milan
S7	Christian Albers	3	Orlando
S8	Giancarlo Fisichella	3	Milan
S9	Kimi Rikonnen	2	Helsinki

Command 3B



Please enter any SQL query or update command in the box below.

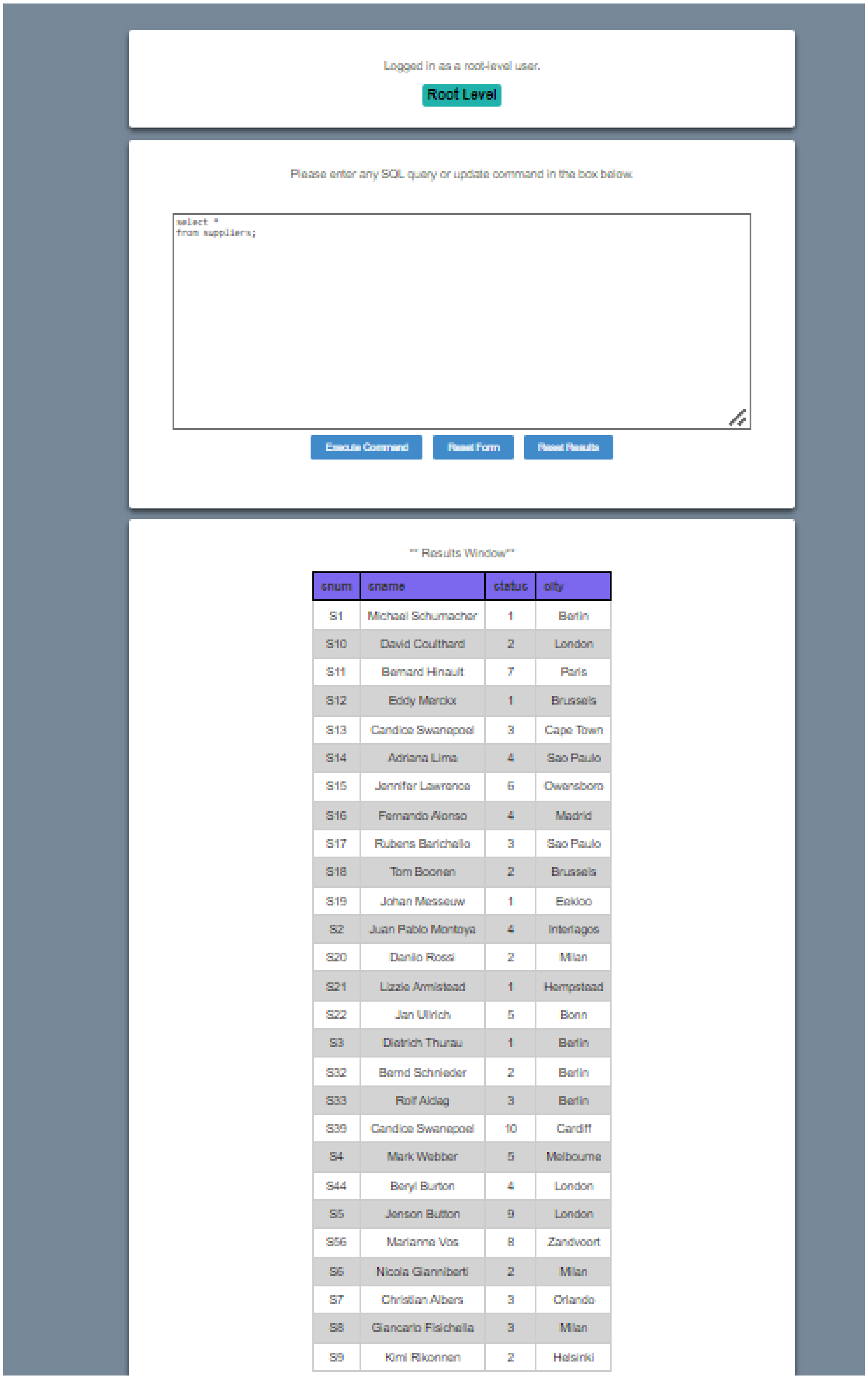
```
insert into suppliers
values ('S39','Candice Swanepoel',10,'Cardiff');
```

** Results Window**

Statement executed successfully.
1 row(s) affected.

Business Logic Not Triggered

Command 3C



Logged in as a root-level user.

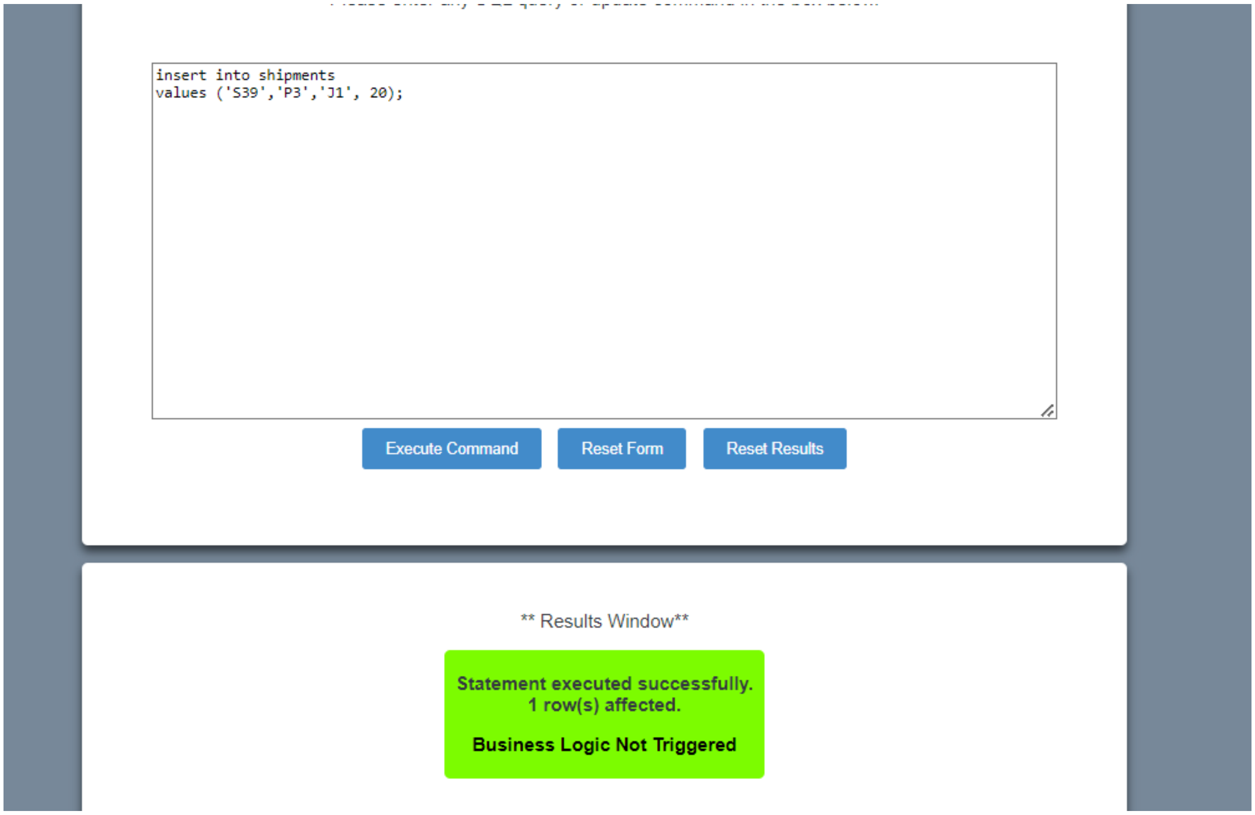
Please enter any SQL query or update command in the box below.

```
select *
from suppliers;
```

** Results Window**

snum	sname	status	city
S1	Michael Schumacher	1	Berlin
S10	David Coulthard	2	London
S11	Bernard Hinault	7	Paris
S12	Eddy Merckx	1	Brussels
S13	Candice Swanepoel	3	Cape Town
S14	Adriana Lima	4	Sao Paulo
S15	Jennifer Lawrence	6	Owensboro
S16	Fernando Alonso	4	Madrid
S17	Rubens Barichello	3	Sao Paulo
S18	Tom Boonen	2	Brussels
S19	Johan Messeuw	1	Eekloo
S2	Juan Pablo Montoya	4	Interlagos
S20	Danilo Rossi	2	Milan
S21	Lizzie Armistead	1	Hempstead
S22	Jan Ullrich	5	Bonn
S3	Dietrich Thurau	1	Berlin
S32	Bernd Schnieder	2	Berlin
S33	Rolf Aldag	3	Berlin
S39	Candice Swanepoel	10	Cardiff
S4	Mark Webber	5	Melbourne
S44	Beryl Burton	4	London
S5	Jenson Button	9	London
S56	Marianne Vos	8	Zandvoort
S6	Nicola Gianniberti	2	Milan
S7	Christian Albers	3	Orlando
S8	Giancarlo Fisichella	3	Milan
S9	Kimi Rikonnen	2	Helsinki

Command 3D

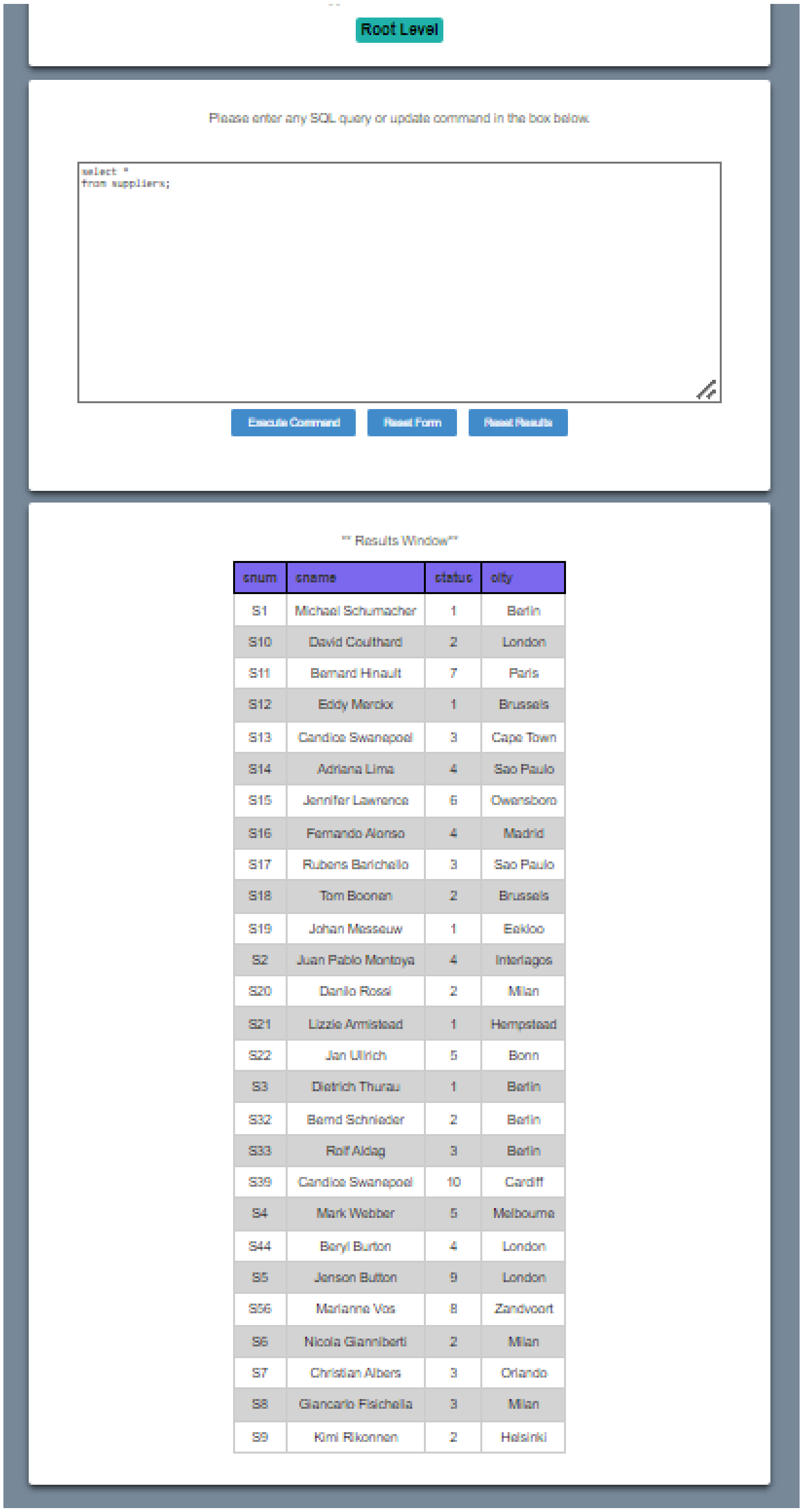


```
insert into shipments
values ('S39','P3','J1', 20);
```

Statement executed successfully.
1 row(s) affected.

Business Logic Not Triggered

3E



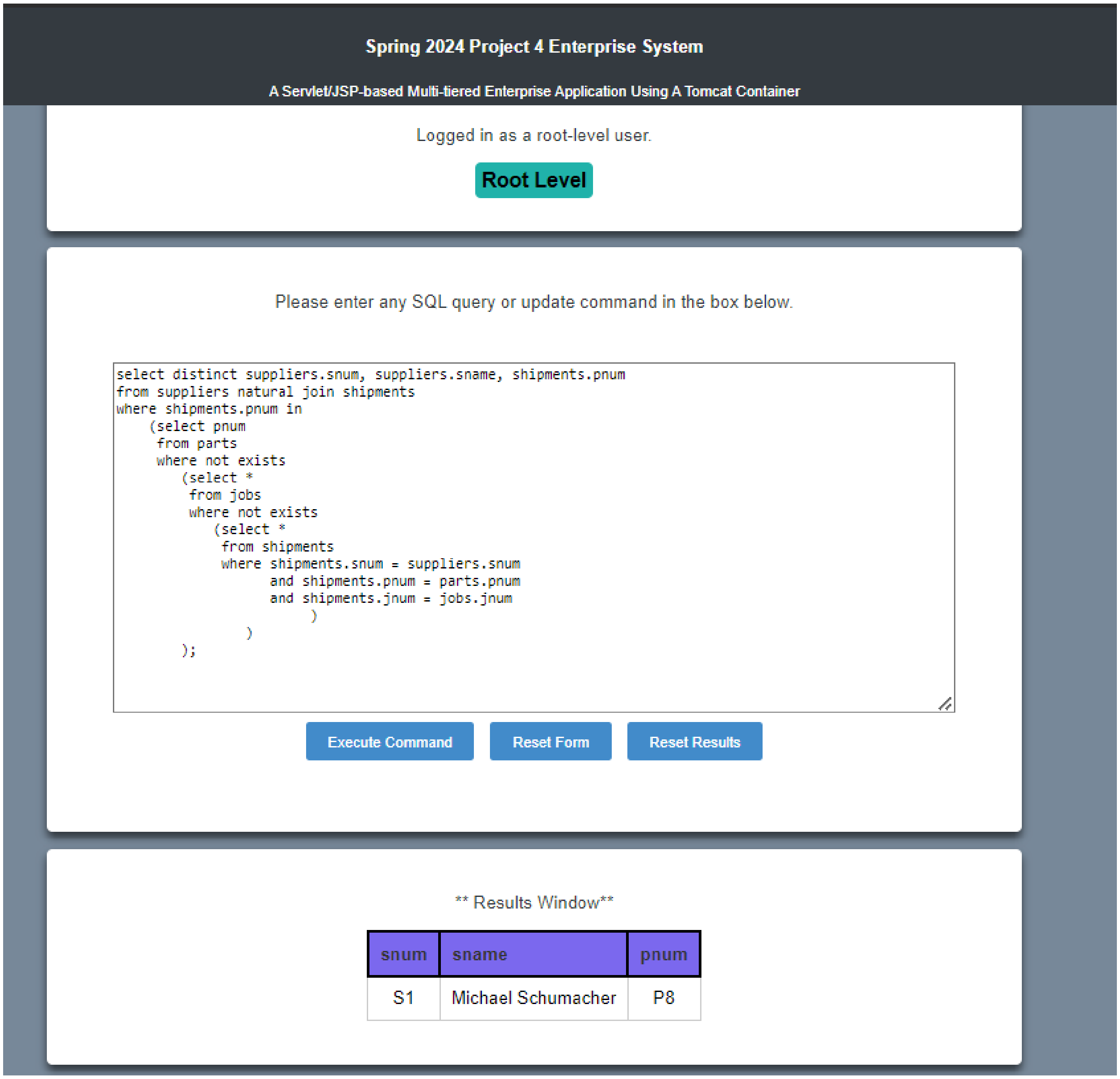
Please enter any SQL query or update command in the box below.

```
select *
from suppliers;
```

** Results Window**

snum	sname	status	city
S1	Michael Schumacher	1	Berlin
S10	David Coulthard	2	London
S11	Bernard Hinault	7	Paris
S12	Eddy Merckx	1	Brussels
S13	Candice Swanepoel	3	Cape Town
S14	Adriana Lima	4	Sao Paulo
S15	Jennifer Lawrence	6	Owensboro
S16	Fernando Alonso	4	Madrid
S17	Rubens Barichello	3	Sao Paulo
S18	Tom Boonen	2	Brussels
S19	Johan Messeuw	1	Eekloo
S2	Juan Pablo Montoya	4	Interlagos
S20	Danilo Rossi	2	Milan
S21	Lizzie Armistead	1	Hempstead
S22	Jan Ullrich	5	Bonn
S3	Dietrich Thurau	1	Berlin
S32	Bernd Schnieder	2	Berlin
S33	Rolf Aldag	3	Berlin
S39	Candice Swanepoel	10	Cardiff
S4	Mark Webber	5	Melbourne
S44	Beryl Burton	4	London
S5	Jenson Button	9	London
S56	Marianne Vos	8	Zandvoort
S6	Nicola Gianniberti	2	Milan
S7	Christian Albers	3	Orlando
S8	Giancarlo Fisichella	3	Milan
S9	Kimi Rikonnen	2	Helsinki

Command 4


Spring 2024 Project 4 Enterprise System
A Servlet/JSP-based Multi-tiered Enterprise Application Using A Tomcat Container
Root Level
Execute Command
Reset Form
Reset Results

Logged in as a root-level user.

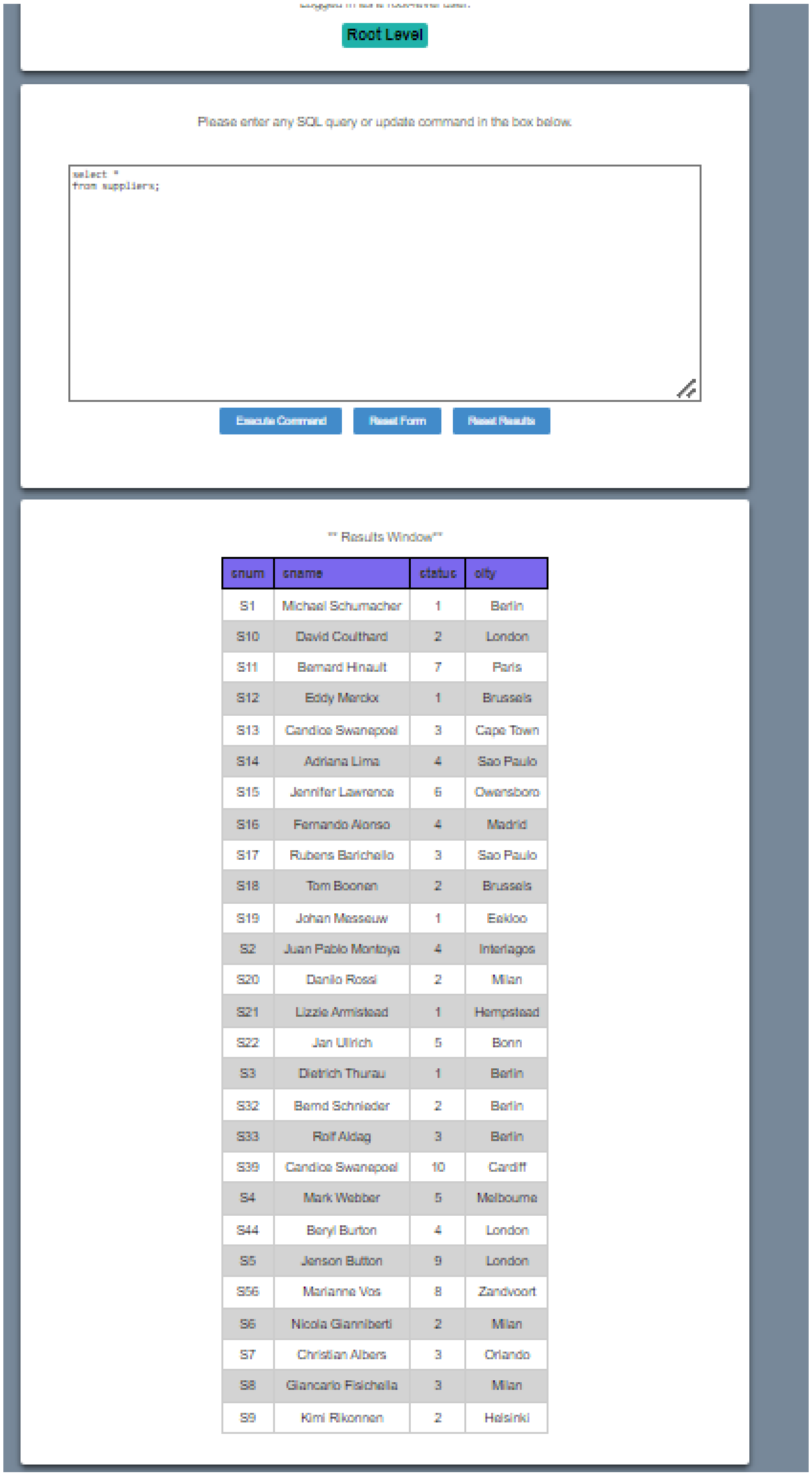
Please enter any SQL query or update command in the box below.

```
select distinct suppliers.snum, suppliers.sname, shipments.pnum
from suppliers natural join shipments
where shipments.pnum in
    (select pnum
     from parts
     where not exists
        (select *
         from jobs
         where not exists
            (select *
             from shipments
             where shipments.snum = suppliers.snum
                   and shipments.pnum = parts.pnum
                   and shipments.jnum = jobs.jnum
                        )
                )
        );
```

** Results Window**

snum	sname	pnum
S1	Michael Schumacher	P8

5A



Logged in as a root-level user.

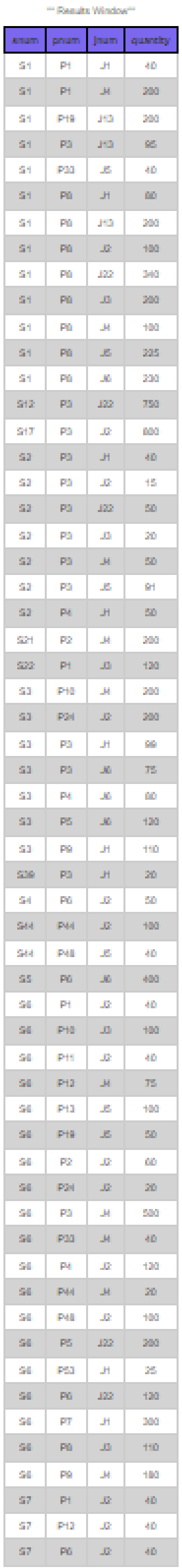
Please enter any SQL query or update command in the box below.

```
select *
from suppliers;
```

** Results Window**

snum	sname	status	city
S1	Michael Schumacher	1	Berlin
S10	David Coulthard	2	London
S11	Bernard Hinault	7	Paris
S12	Eddy Merckx	1	Brussels
S13	Candice Swanepoel	3	Cape Town
S14	Adriana Lima	4	Sao Paulo
S15	Jennifer Lawrence	6	Owensboro
S16	Fernando Alonso	4	Madrid
S17	Rubens Barichello	3	Sao Paulo
S18	Tom Boonen	2	Brussels
S19	Johan Messeuw	1	Eekloo
S2	Juan Pablo Montoya	4	Interlagos
S20	Danilo Rossi	2	Milan
S21	Lizzie Armistead	1	Hempstead
S22	Jan Ullrich	5	Bonn
S3	Dietrich Thurau	1	Berlin
S32	Bernd Schnieder	2	Berlin
S33	Rolf Aldag	3	Berlin
S39	Candice Swanepoel	10	Cardiff
S4	Mark Webber	5	Melbourne
S44	Beryl Burton	4	London
S5	Jenson Button	9	London
S56	Marianne Vos	8	Zandvoort
S6	Nicola Gianniberti	2	Milan
S7	Christian Albers	3	Orlando
S8	Giancarlo Fisichella	3	Milan
S9	Kimi Rikonnen	2	Helsinki

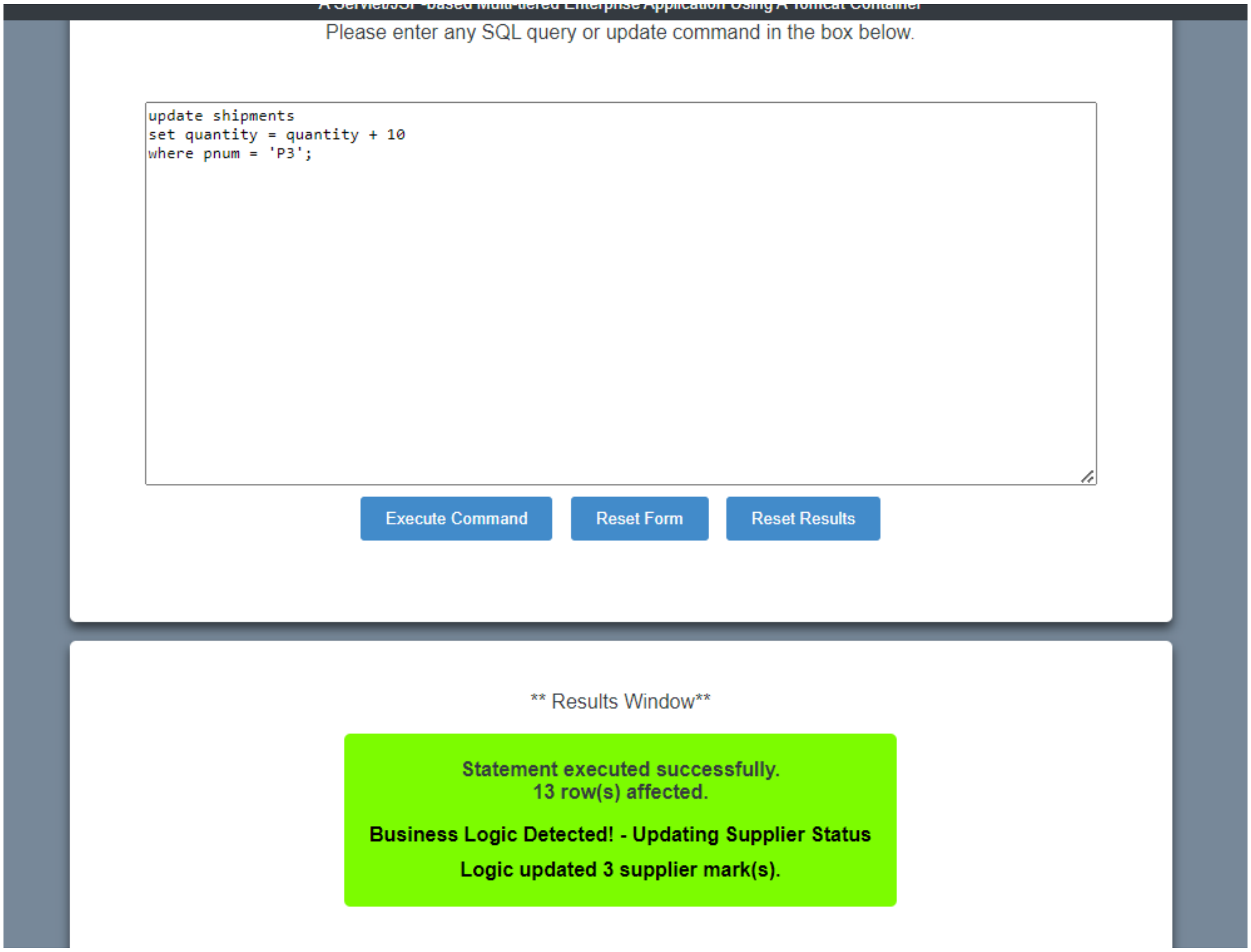
5B



*** Results Window***

snum	pnum	jnum	quantity
S1	P1	J1	40
S1	P1	J4	200
S1	P19	J13	200
S1	P3	J13	95
S1	P33	J5	40
S1	P8	J1	80
S1	P8	J13	200
S1	P8	J2	100
S1	P8	J22	340
S1	P8	J3	200
S1	P8	J4	100
S1	P8	J5	225
S1	P8	J6	230
S12	P3	J22	750
S17	P3	J2	800
S2	P3	J1	40
S2	P3	J2	15
S2	P3	J22	50
S2	P3	J3	20
S2	P3	J4	50
S2	P3	J5	91
S2	P4	J1	50
S21	P2	J4	200
S22	P1	J3	120
S3	P10	J4	200
S3	P24	J2	200
S3	P3	J1	99
S3	P3	J6	75
S3	P4	J6	80
S3	P5	J6	120
S3	P9	J1	110
S39	P3	J1	20
S4	P6	J2	50
S44	P44	J2	100
S44	P48	J5	40
S5	P6	J6	400
S6	P1	J2	40
S6	P10	J3	100
S6	P11	J2	40
S6	P12	J4	75
S6	P13	J5	100
S6	P19	J5	50
S6	P2	J2	60
S6	P24	J2	20
S6	P3	J4	500
S6	P33	J4	40
S6	P4	J2	120
S6	P44	J4	20
S6	P48	J2	100
S6	P5	J22	200
S6	P53	J1	25
S6	P6	J22	120
S6	P7	J1	300
S6	P8	J3	110
S6	P9	J4	180
S7	P1	J2	40
S7	P12	J2	40
S7	P6	J2	40

5C



A Servlet/JSP-based Multi-tiered Enterprise Application Using A Tomcat Container

Please enter any SQL query or update command in the box below.

```
update shipments
set quantity = quantity + 10
where pnum = 'P3';
```

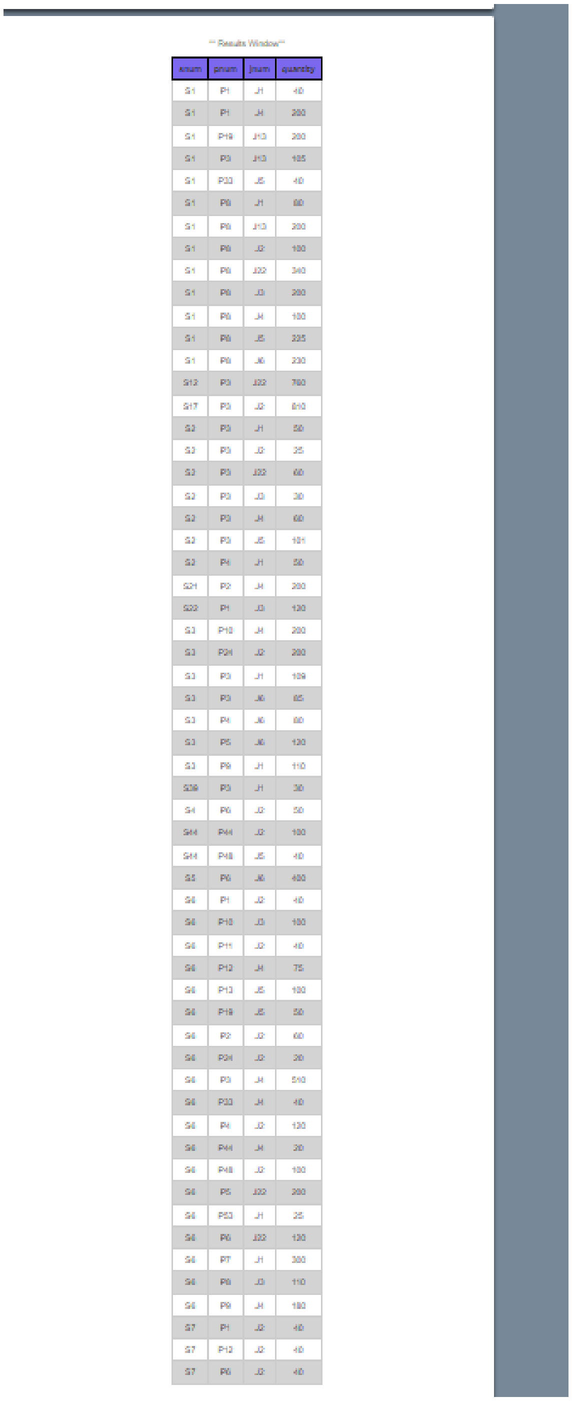
** Results Window**

Statement executed successfully.
13 row(s) affected.

Business Logic Detected! - Updating Supplier Status

Logic updated 3 supplier mark(s).

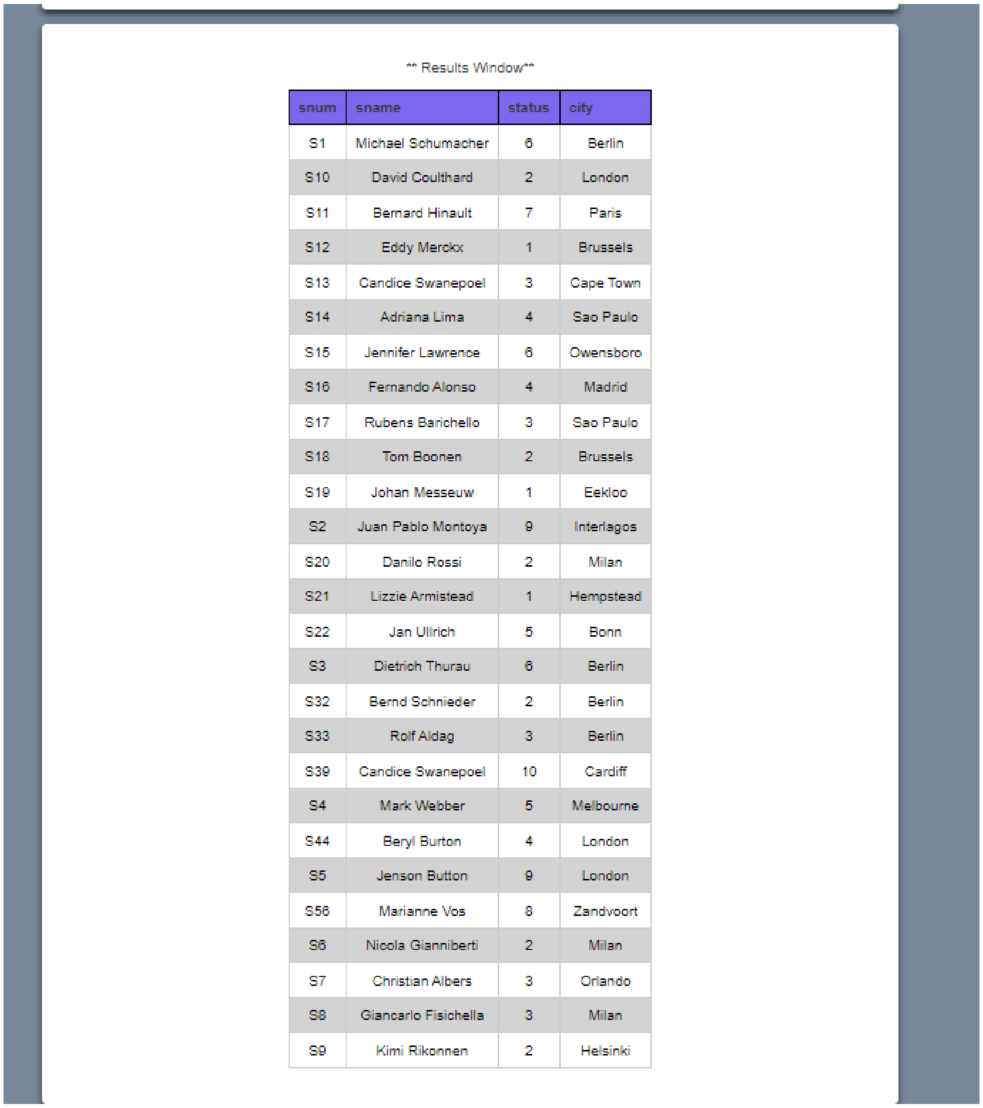
5D



** Results Window**

snum	pnum	jnum	quantity
S1	P1	J1	40
S1	P1	J4	200
S1	P18	J13	200
S1	P3	J13	185
S1	P33	J5	40
S1	P8	J1	80
S1	P8	J13	200
S1	P8	J2	100
S1	P8	J22	340
S1	P8	J3	200
S1	P8	J4	100
S1	P8	J5	225
S1	P8	J6	230
S12	P3	J22	780
S17	P3	J2	810
S2	P3	J1	50
S2	P3	J2	25
S2	P3	J22	60
S2	P3	J3	30
S2	P3	J4	60
S2	P3	J5	101
S2	P4	J1	50
S21	P2	J4	200
S22	P1	J3	130
S3	P10	J4	200
S3	P24	J2	200
S3	P3	J1	109
S3	P3	J6	85
S3	P4	J6	80
S3	P5	J6	120
S3	P9	J1	110
S39	P3	J1	30
S4	P6	J2	50
S44	P44	J2	100
S44	P48	J5	40
S5	P6	J6	400
S6	P1	J2	40
S6	P10	J3	100
S6	P11	J2	40
S6	P12	J4	75
S6	P13	J5	100
S6	P18	J5	50
S6	P2	J2	60
S6	P24	J2	20
S6	P3	J4	510
S6	P33	J4	40
S6	P4	J2	120
S6	P44	J4	20
S6	P48	J2	100
S6	P5	J22	200
S6	P53	J1	25
S6	P6	J22	120
S6	P7	J1	300
S6	P8	J3	110
S6	P9	J4	180
S7	P1	J2	40
S7	P12	J2	40
S7	P6	J2	40

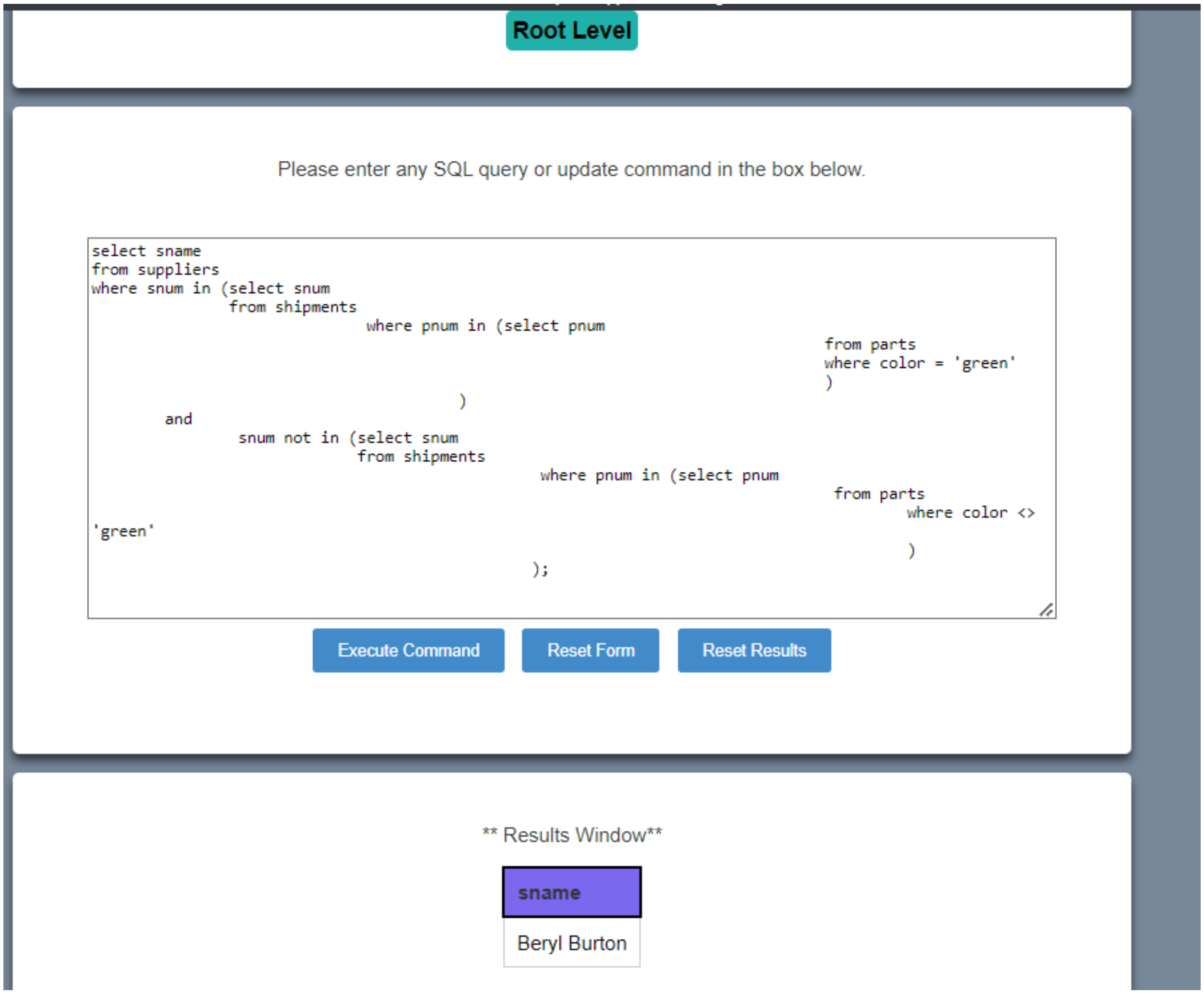
5E



** Results Window**

snum	sname	status	city
S1	Michael Schumacher	6	Berlin
S10	David Coulthard	2	London
S11	Bernard Hinault	7	Paris
S12	Eddy Merckx	1	Brussels
S13	Candice Swanepoel	3	Cape Town
S14	Adriana Lima	4	Sao Paulo
S15	Jennifer Lawrence	6	Owensboro
S16	Fernando Alonso	4	Madrid
S17	Rubens Barichello	3	Sao Paulo
S18	Tom Boonen	2	Brussels
S19	Johan Messeuw	1	Eekloo
S2	Juan Pablo Montoya	9	Interlagos
S20	Danilo Rossi	2	Milan
S21	Lizzie Armistead	1	Hempstead
S22	Jan Ullrich	5	Bonn
S3	Dietrich Thurau	6	Berlin
S32	Bernd Schnieder	2	Berlin
S33	Rolf Aldag	3	Berlin
S39	Candice Swanepoel	10	Cardiff
S4	Mark Webber	5	Melbourne
S44	Beryl Burton	4	London
S5	Jenson Button	9	London
S56	Marianne Vos	8	Zandvoort
S6	Nicola Gianniberti	2	Milan
S7	Christian Albers	3	Orlando
S8	Giancarlo Fisichella	3	Milan
S9	Kimi Rikonnen	2	Helsinki

6



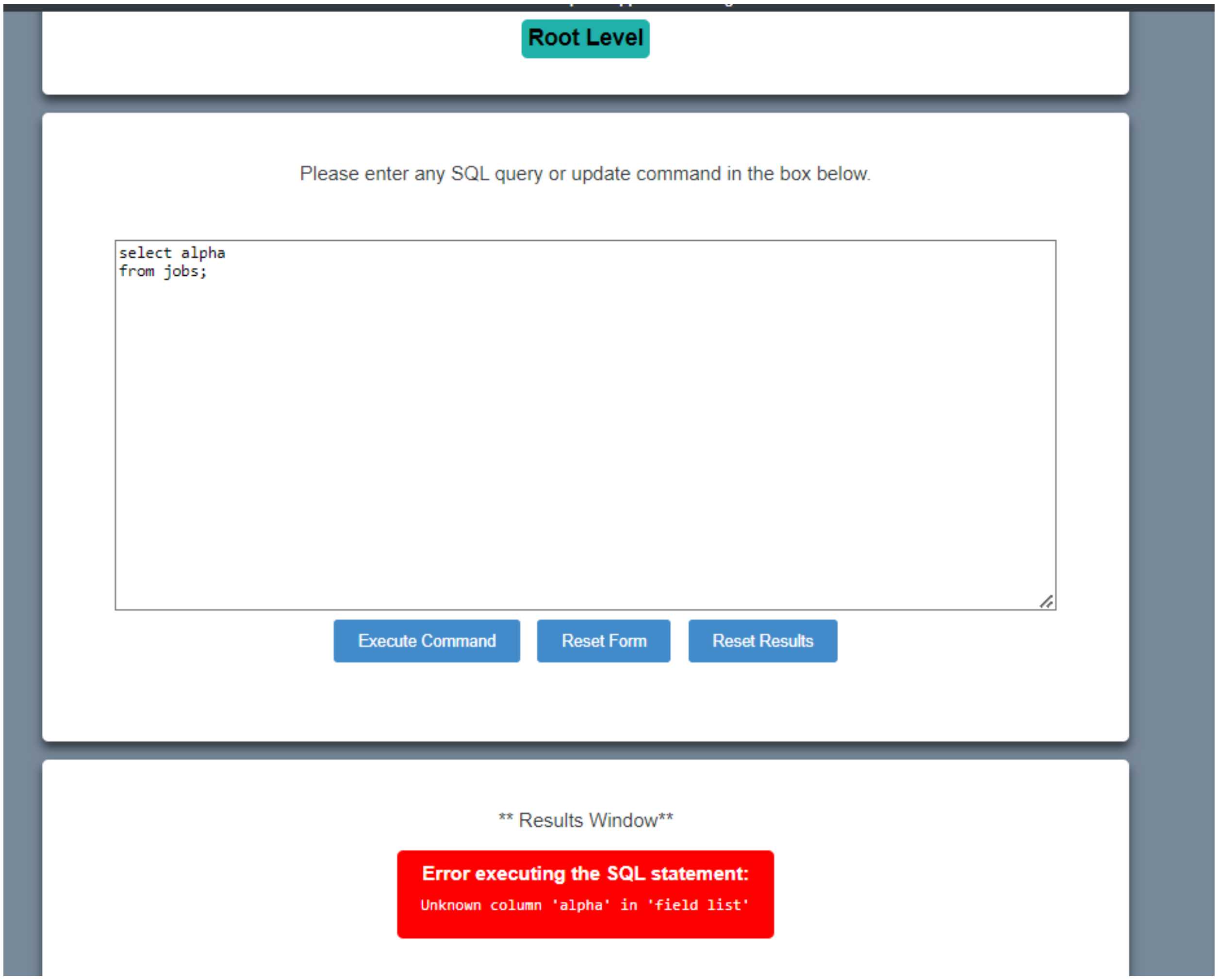
Please enter any SQL query or update command in the box below.

```
select sname
from suppliers
where snum in (select snum
               from shipments
                              where pnum in (select pnum
                                                                                from parts
                                                                                where color = 'green'
                                                                                )
                                        )
        and
                snum not in (select snum
                             from shipments
                                                 where pnum in (select pnum
                                                                                 from parts
                                                                                         where color <>
'green'
                                                                                         )
                                                );
```

** Results Window**

sname
Beryl Burton

7



Please enter any SQL query or update command in the box below.

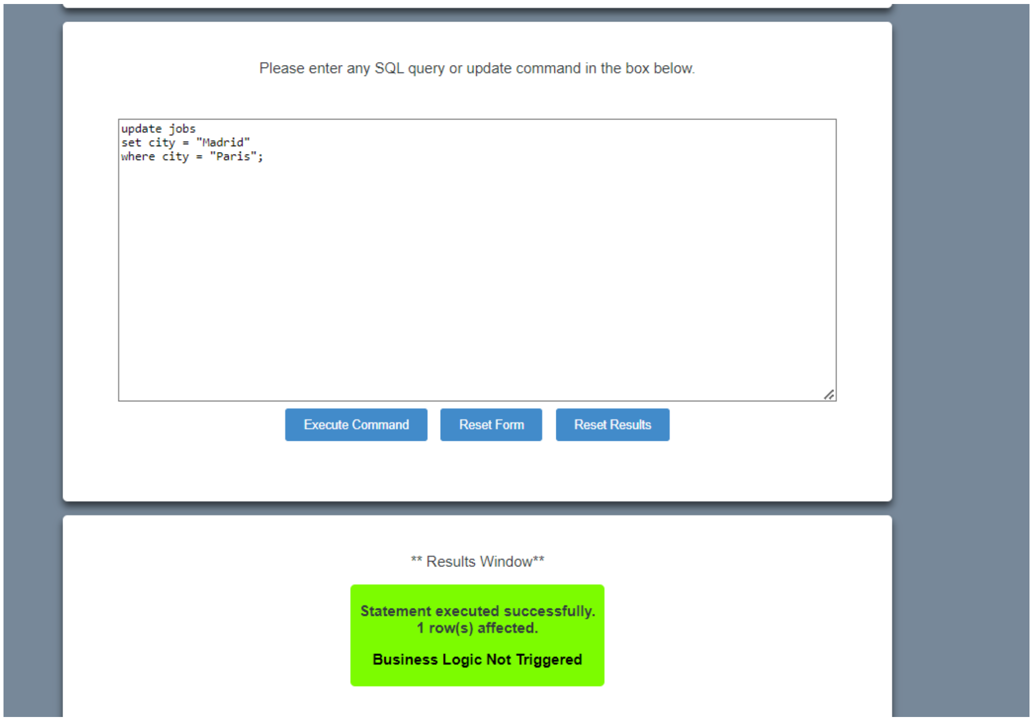
```
select alpha
from jobs;
```

** Results Window**

Error executing the SQL statement:

```
Unknown column 'alpha' in 'field list'
```

8



Please enter any SQL query or update command in the box below.

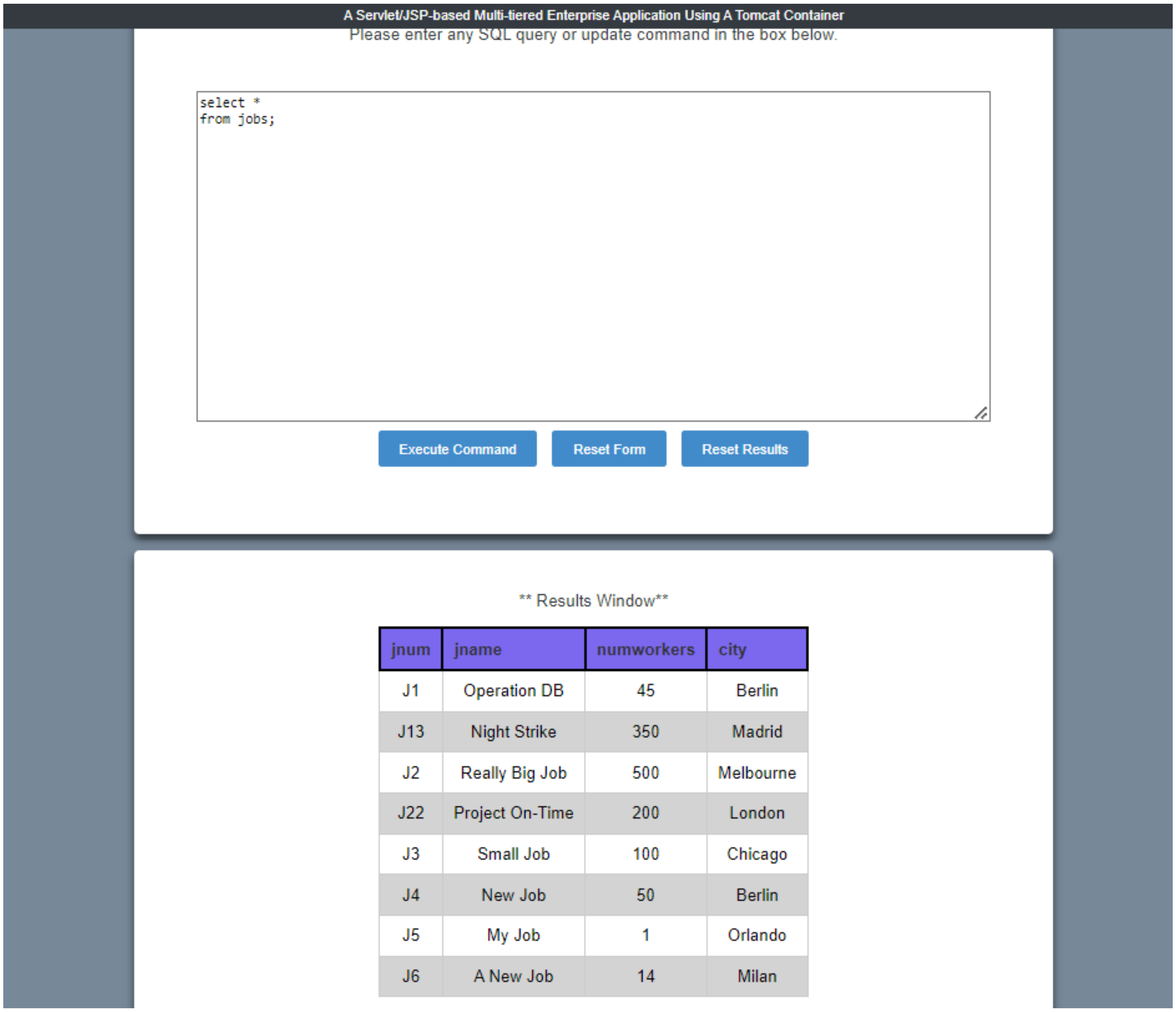
```
update jobs
set city = "Madrid"
where city = "Paris";
```

** Results Window**

Statement executed successfully.
1 row(s) affected.

Business Logic Not Triggered

9



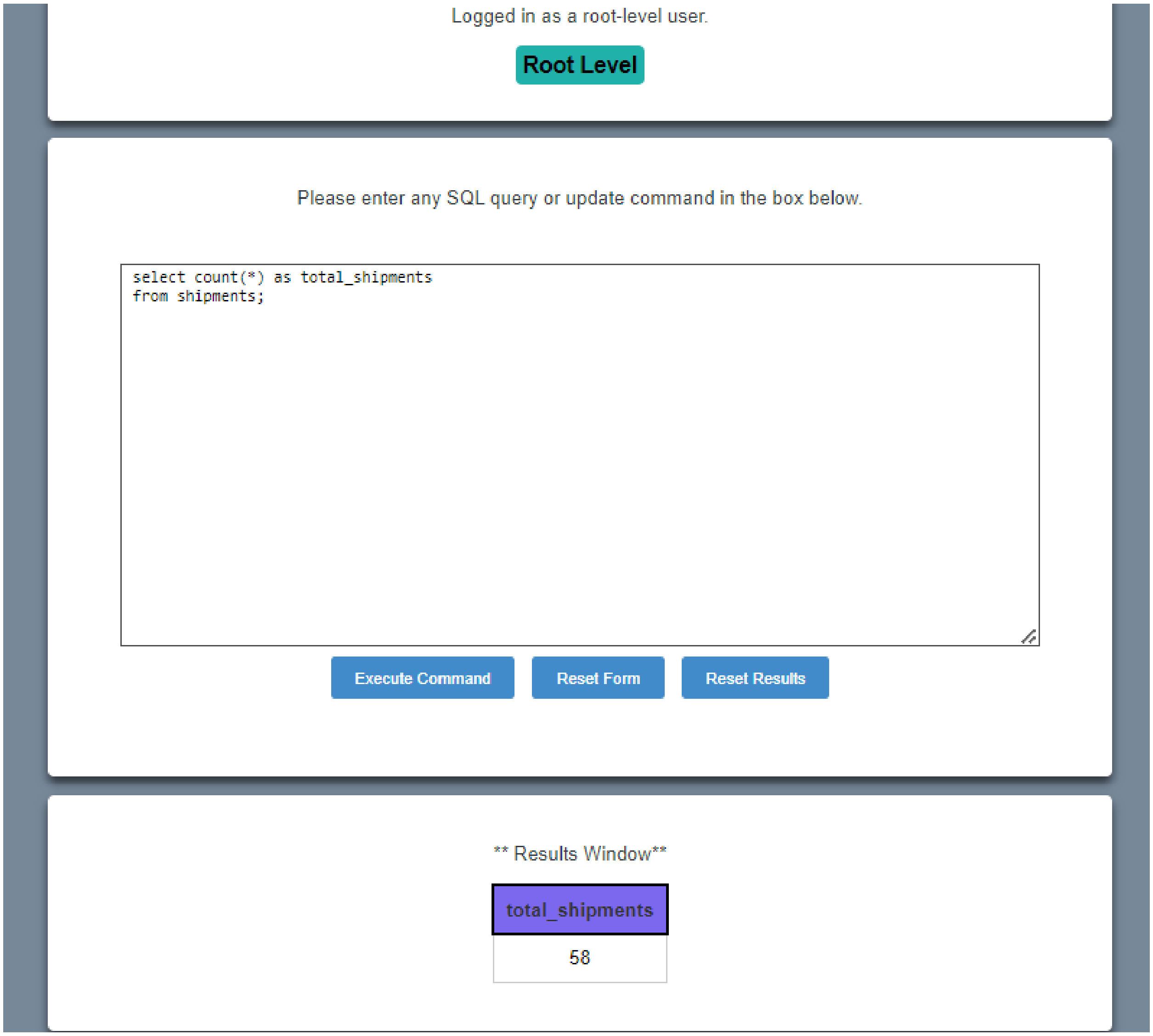
A Servlet/JSP-based Multi-tiered Enterprise Application Using A Tomcat Container
Execute Command
Reset Form
Reset Results

Please enter any SQL query or update command in the box below.

```
select *
from jobs;
```

** Results Window**

jnum	jname	numworkers	city
J1	Operation DB	45	Berlin
J13	Night Strike	350	Madrid
J2	Really Big Job	500	Melbourne
J22	Project On-Time	200	London
J3	Small Job	100	Chicago
J4	New Job	50	Berlin
J5	My Job	1	Orlando
J6	A New Job	14	Milan



Logged in as a root-level user.

Please enter any SQL query or update command in the box below.

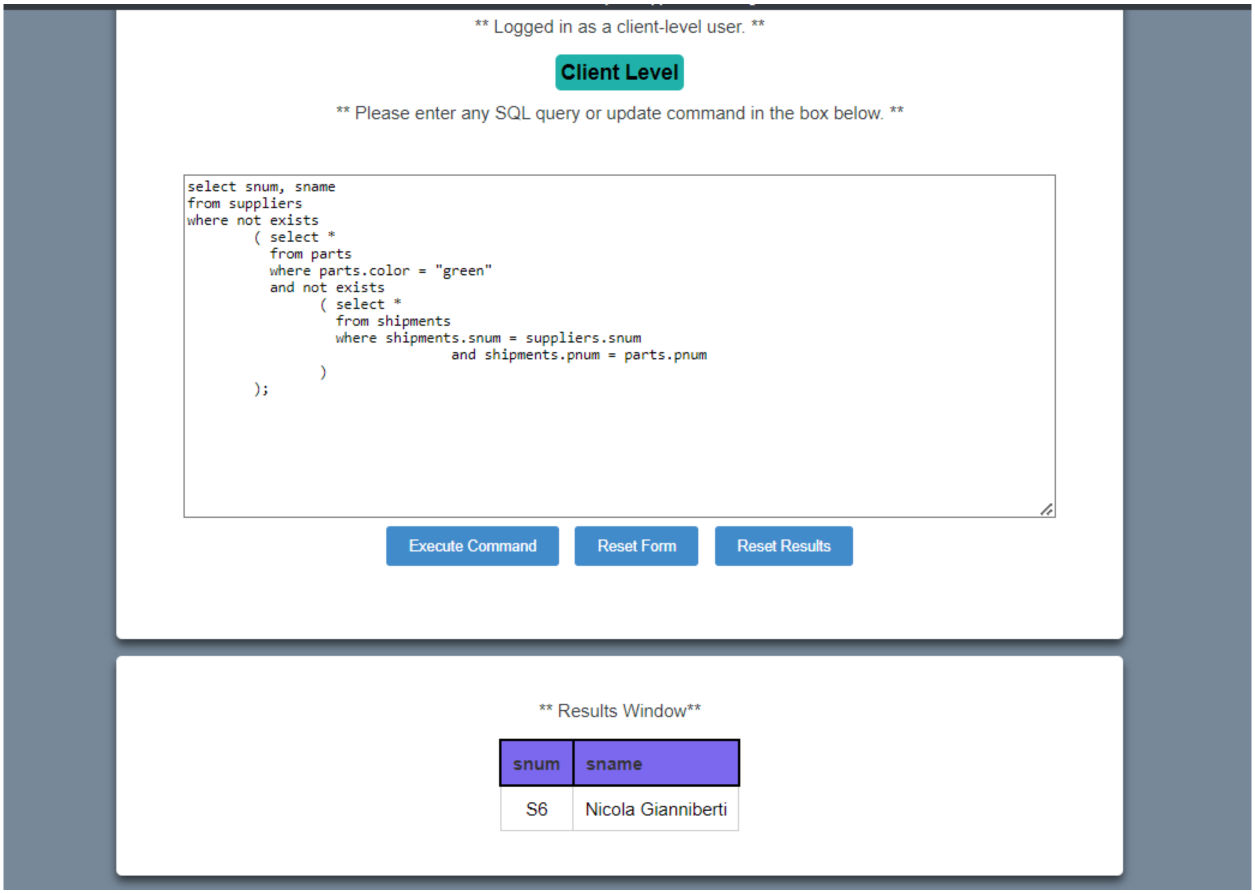
```
select count(*) as total_shipments
from shipments;
```

** Results Window**

total_shipments
58

Client Commands

1



** Logged in as a client-level user. **

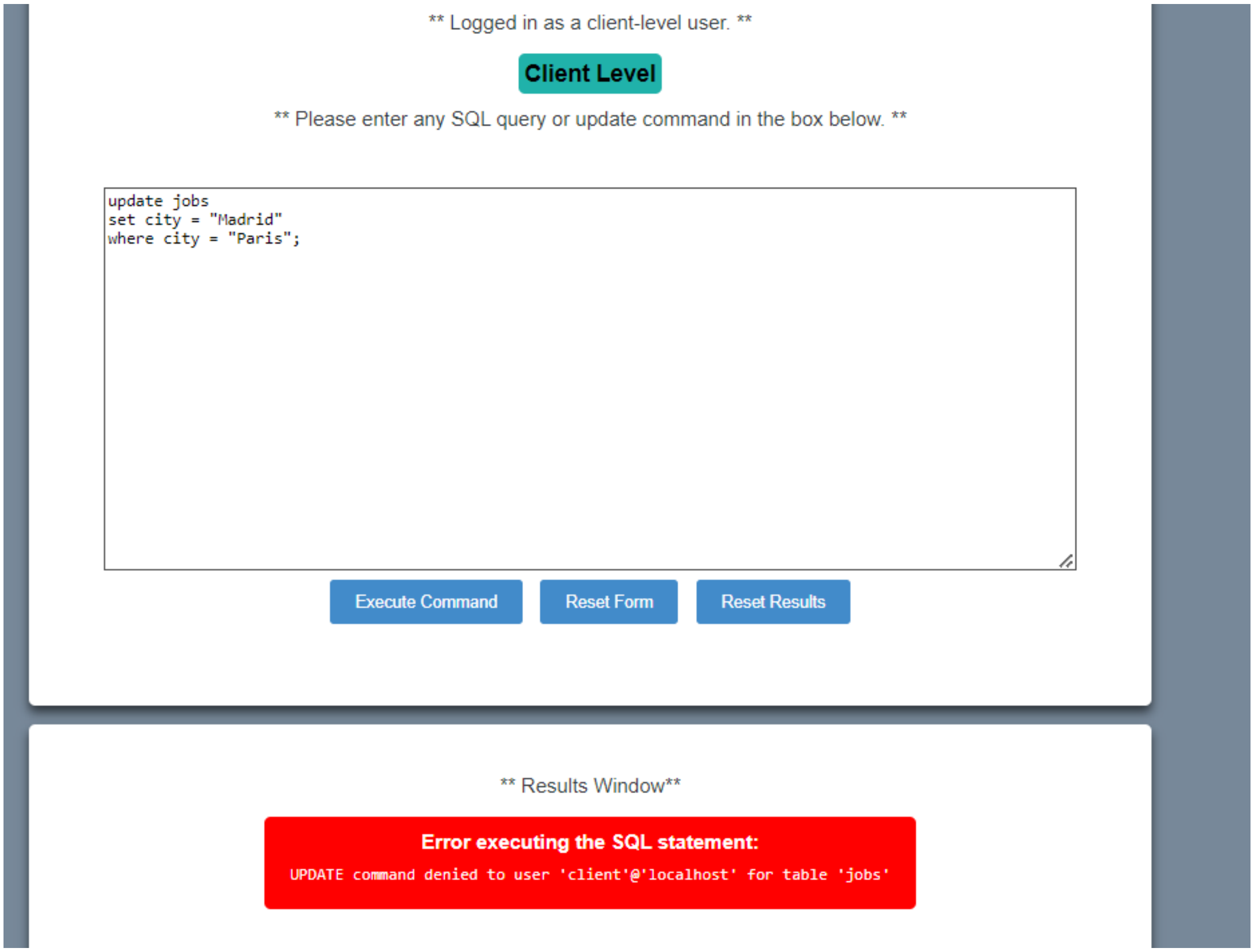
** Please enter any SQL query or update command in the box below. **

```
select snum, sname
from suppliers
where not exists
        ( select *
          from parts
          where parts.color = "green"
          and not exists
                ( select *
                  from shipments
                  where shipments.snum = suppliers.snum
                                and shipments.pnum = parts.pnum
                )
        );
```

** Results Window**

snum	sname
S6	Nicola Gianniberti

2



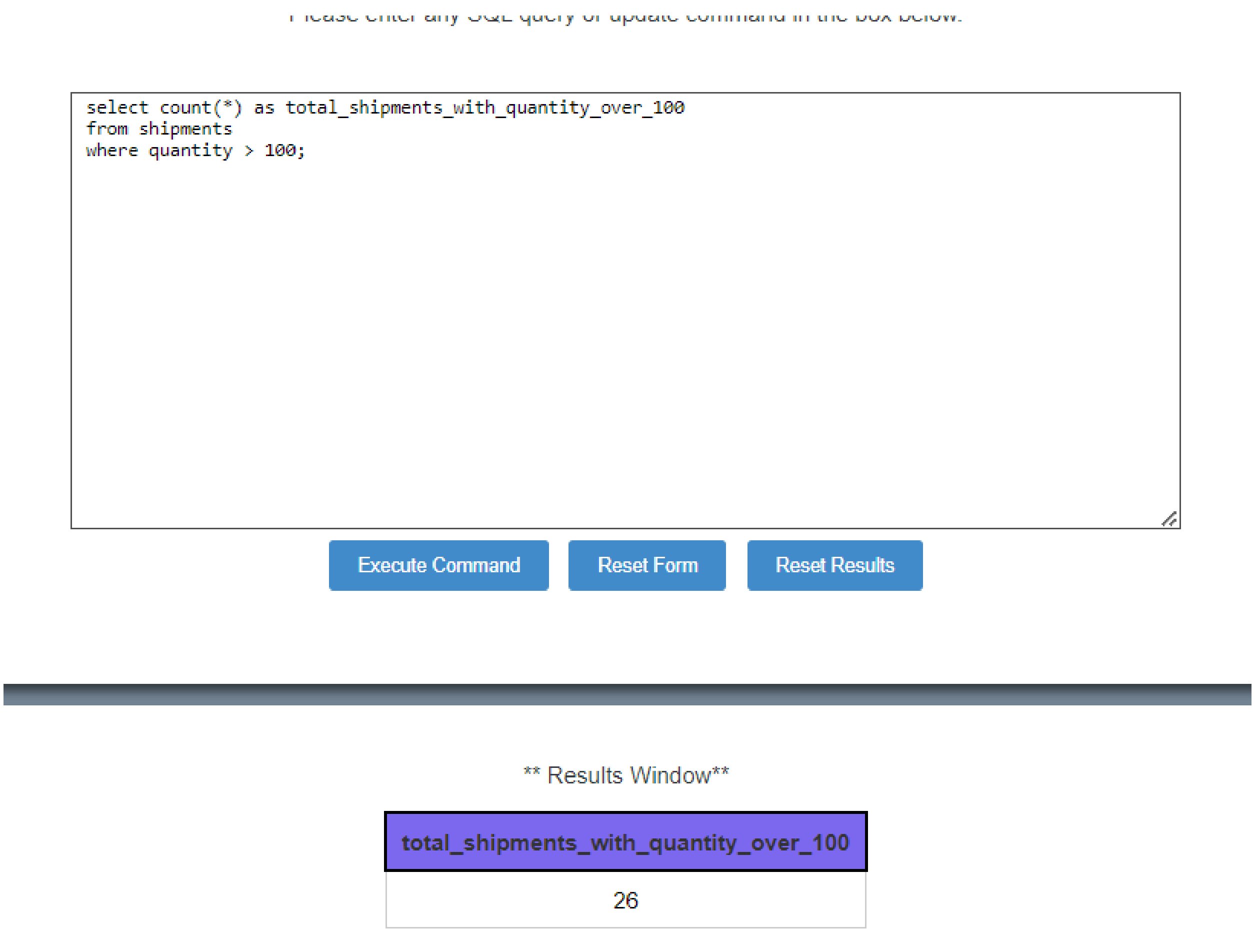
** Logged in as a client-level user. **
Client Level
** Please enter any SQL query or update command in the box below. **
Execute Command
Reset Form
Reset Results
** Results Window**

```
update jobs
set city = "Madrid"
where city = "Paris";
```

Error executing the SQL statement:

```
UPDATE command denied to user 'client'@'localhost' for table 'jobs'
```

3



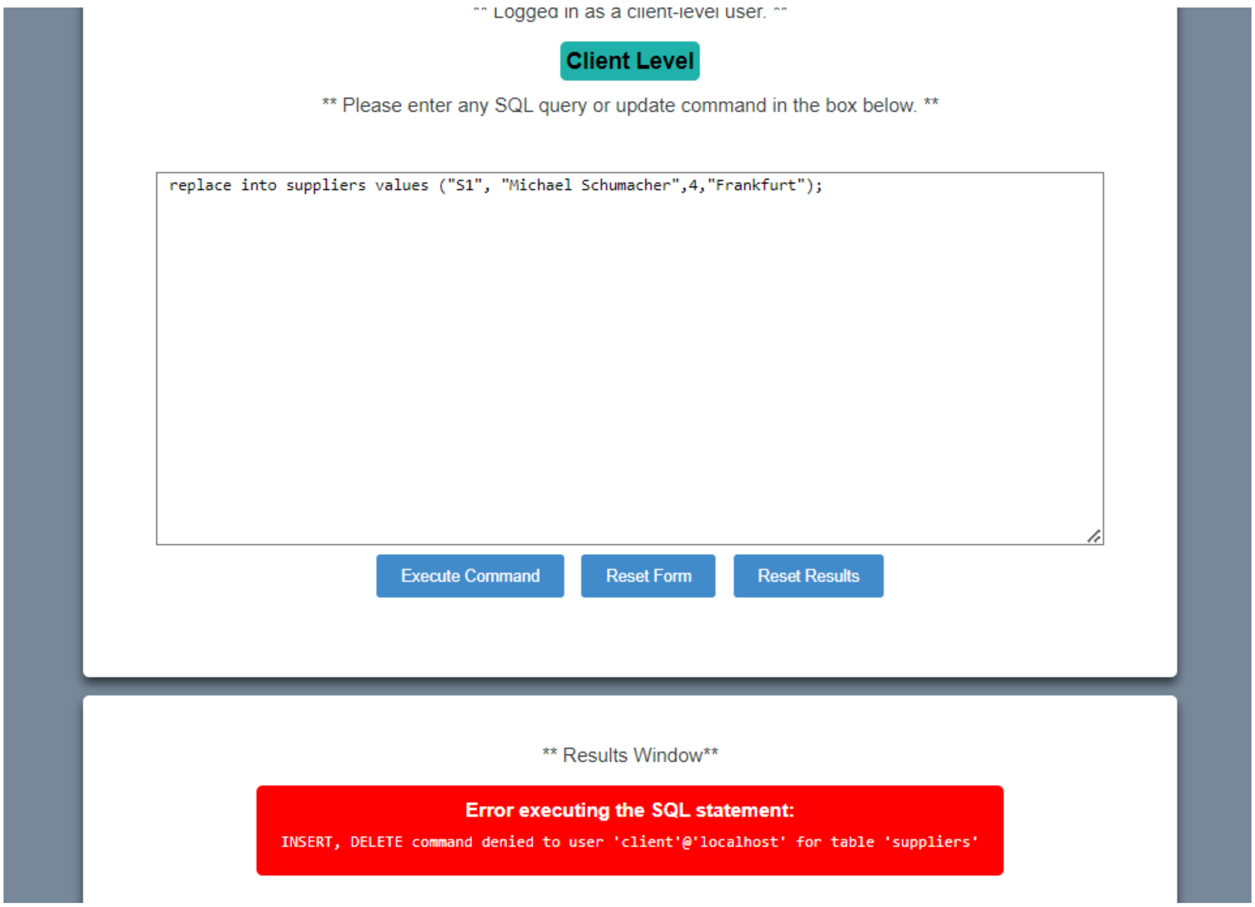
Please enter any SQL query or update command in the box below.

```
select count(*) as total_shipments_with_quantity_over_100
from shipments
where quantity > 100;
```

** Results Window**

total_shipments_with_quantity_over_100
26

4


** Logged in as a client-level user. **

Client Level

** Please enter any SQL query or update command in the box below. **

```
replace into suppliers values ("S1", "Michael Schumacher",4,"Frankfurt");
```

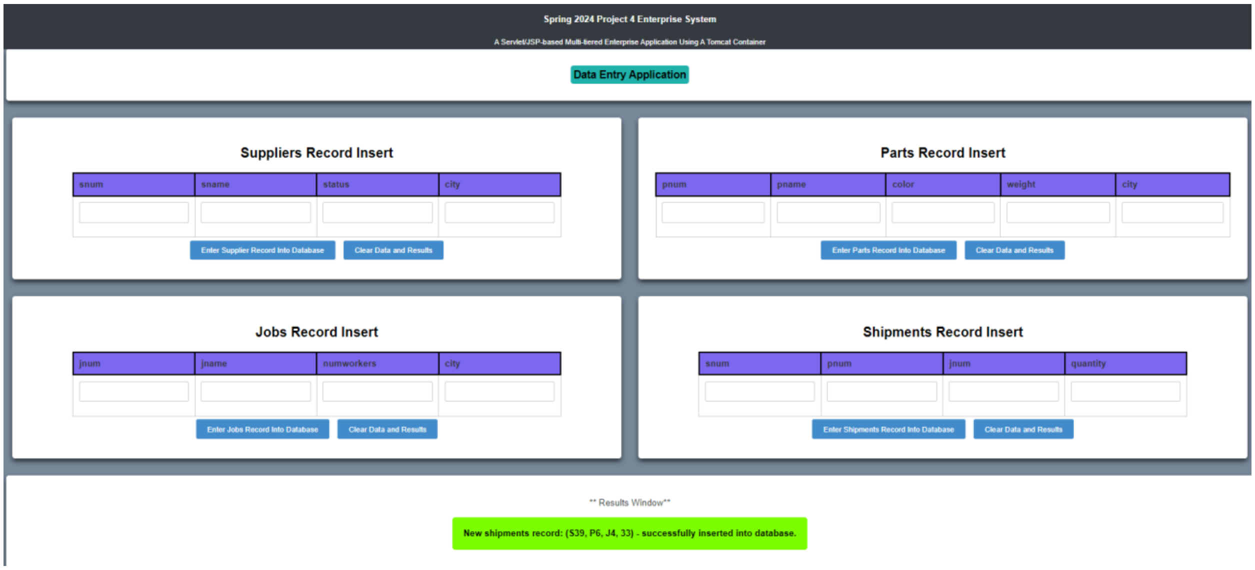
** Results Window**

Error executing the SQL statement:

```
INSERT, DELETE command denied to user 'client'@'localhost' for table 'suppliers'
```

Data Entry

1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A Servlet/JSP-based Multi-tiered Enterprise Application Using A Tomcat Container

Data Entry Application

Suppliers Record Insert

snum	sname	status	city

Enter Supplier Record Into Database
Clear Data and Results

Parts Record Insert

pnum	pname	color	weight	city

Enter Parts Record Into Database
Clear Data and Results

Jobs Record Insert

jnum	jname	numworkers	city

Enter Jobs Record Into Database
Clear Data and Results

Shipments Record Insert

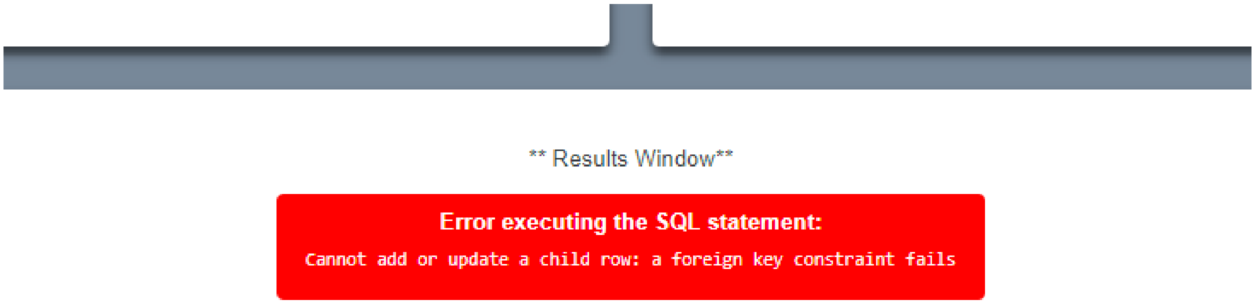
snum	pnum	jnum	quantity

Enter Shipments Record Into Database
Clear Data and Results

** Results Window**

New shipments record: (S39, P6, J4, 33) - successfully inserted into database.

2

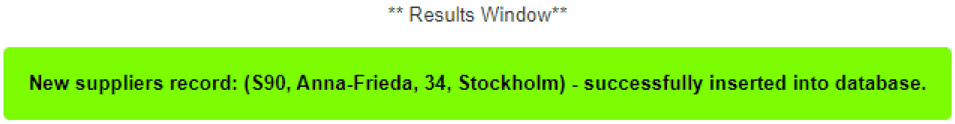


** Results Window**

Error executing the SQL statement:

```
Cannot add or update a child row: a foreign key constraint fails
```

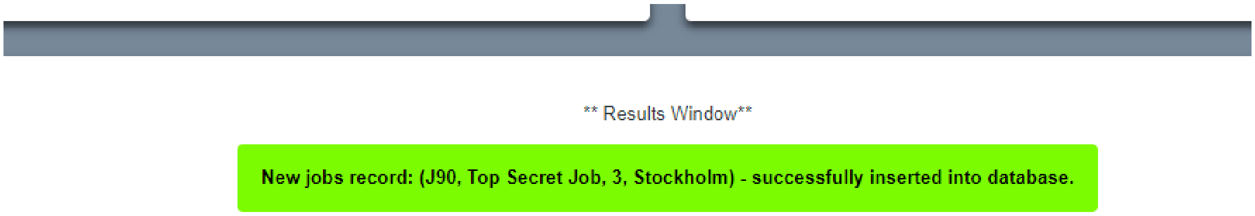
3



** Results Window**

New suppliers record: (S90, Anna-Frieda, 34, Stockholm) - successfully inserted into database.

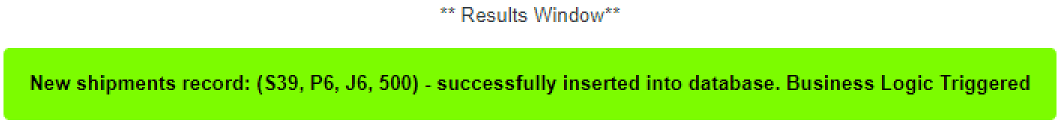
4



** Results Window**

New jobs record: (J90, Top Secret Job, 3, Stockholm) - successfully inserted into database.

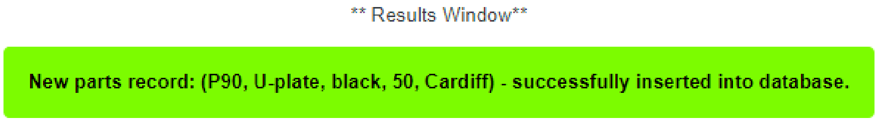
5



** Results Window**

New shipments record: (S39, P6, J6, 500) - successfully inserted into database. Business Logic Triggered

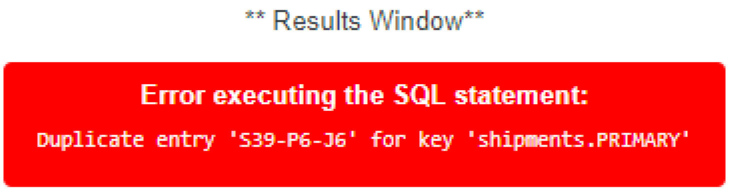
6



** Results Window**

New parts record: (P90, U-plate, black, 50, Cardiff) - successfully inserted into database.

7

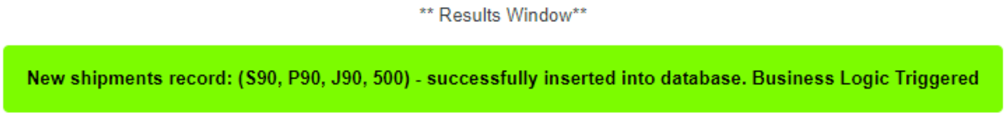


** Results Window**

Error executing the SQL statement:

```
Duplicate entry 'S39-P6-J6' for key 'shipments.PRIMARY'
```

8

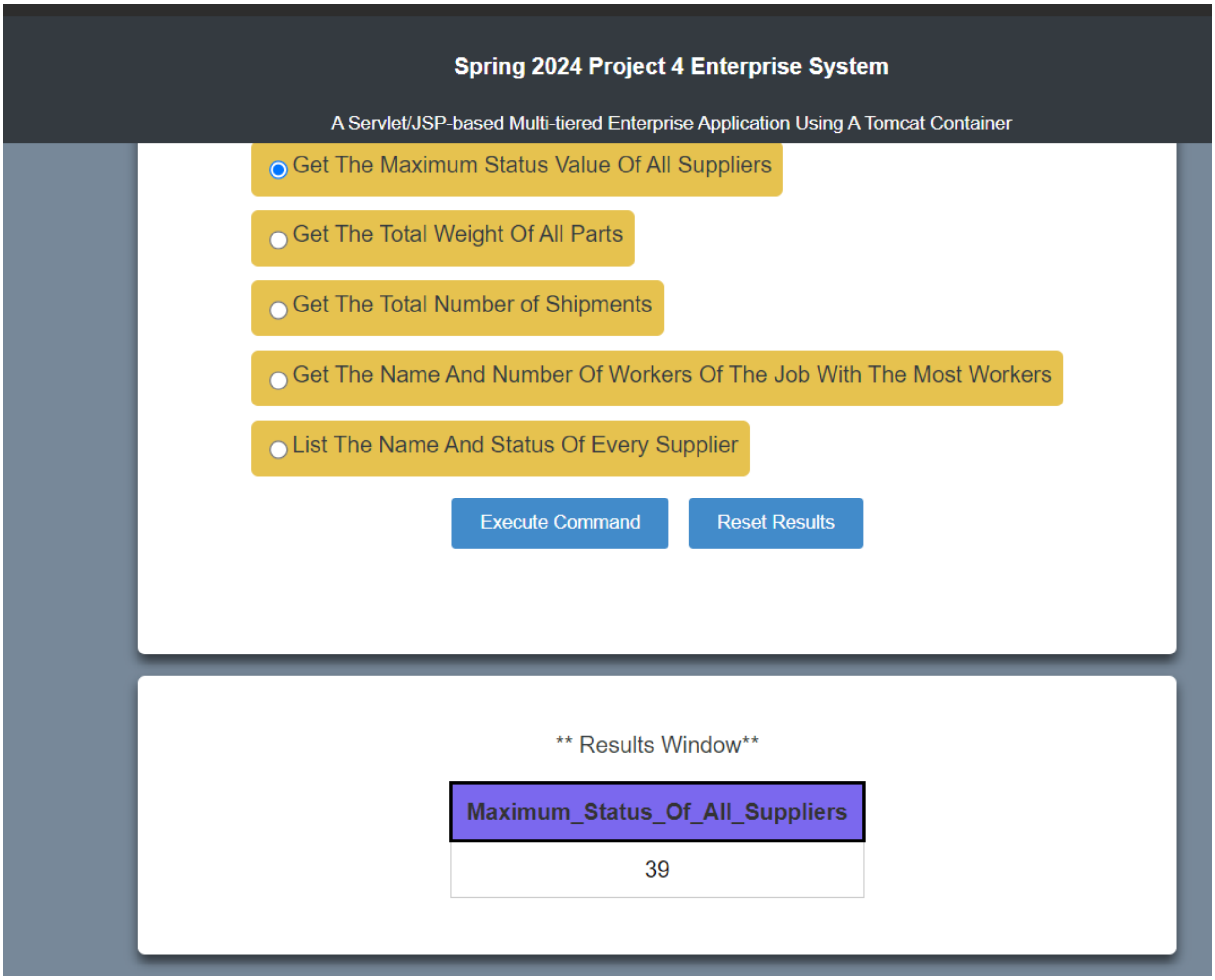


** Results Window**

New shipments record: (S90, P90, J90, 500) - successfully inserted into database. Business Logic Triggered

Accountant

1



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A Servlet/JSP-based Multi-tiered Enterprise Application Using A Tomcat Container

● Get The Maximum Status Value Of All Suppliers

○ Get The Total Weight Of All Parts

○ Get The Total Number of Shipments

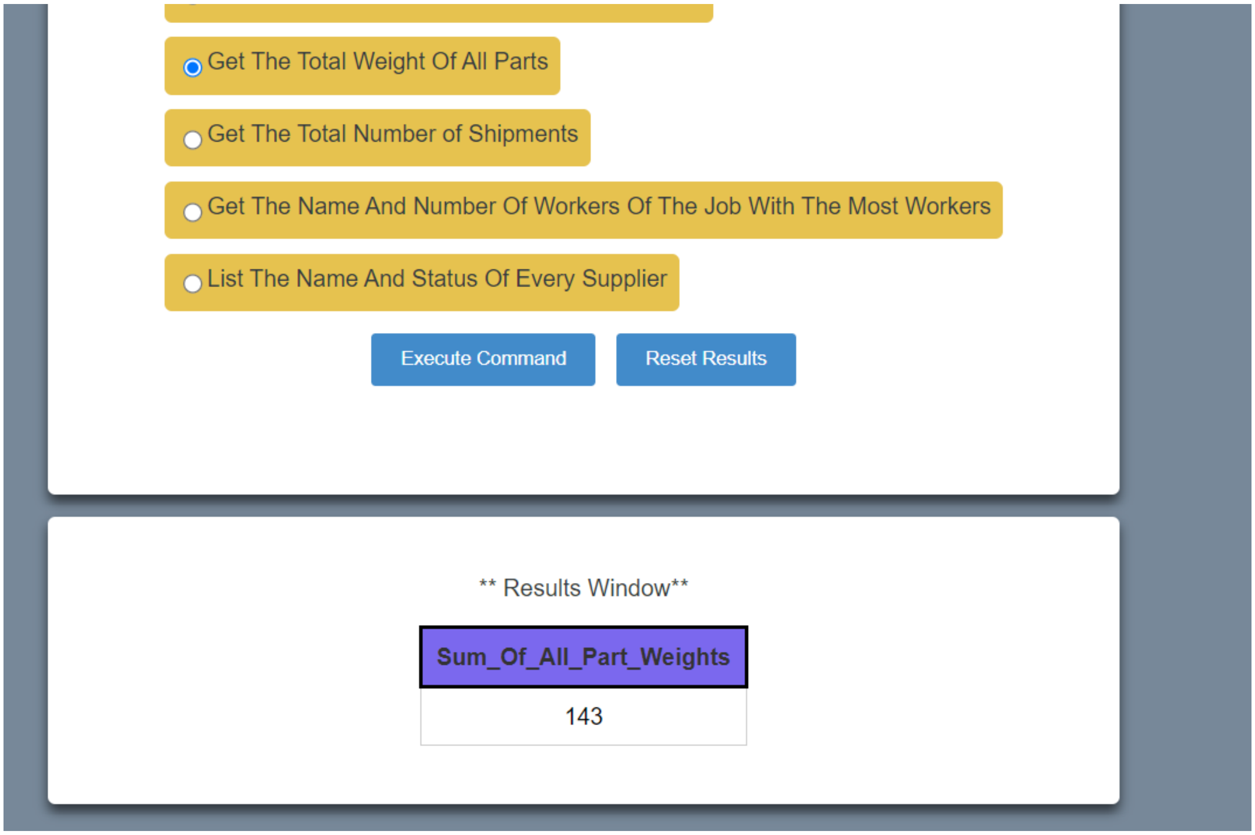
○ Get The Name And Number Of Workers Of The Job With The Most Workers

○ List The Name And Status Of Every Supplier

** Results Window**

Maximum_Status_Of_All_Suppliers
39

2



● Get The Total Weight Of All Parts

○ Get The Total Number of Shipments

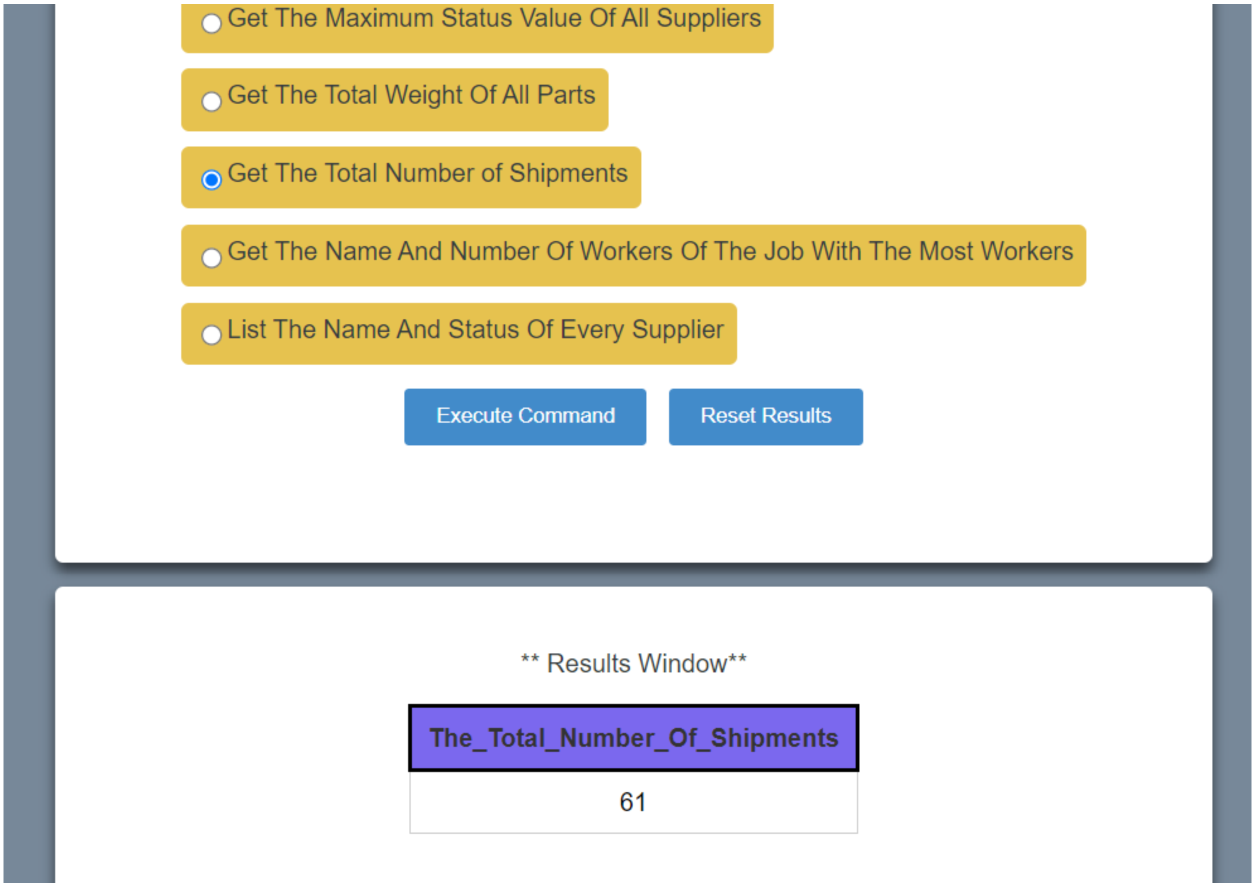
○ Get The Name And Number Of Workers Of The Job With The Most Workers

○ List The Name And Status Of Every Supplier

** Results Window**

Sum_Of_All_Part_Weights
143

3



○ Get The Maximum Status Value Of All Suppliers

○ Get The Total Weight Of All Parts

● Get The Total Number of Shipments

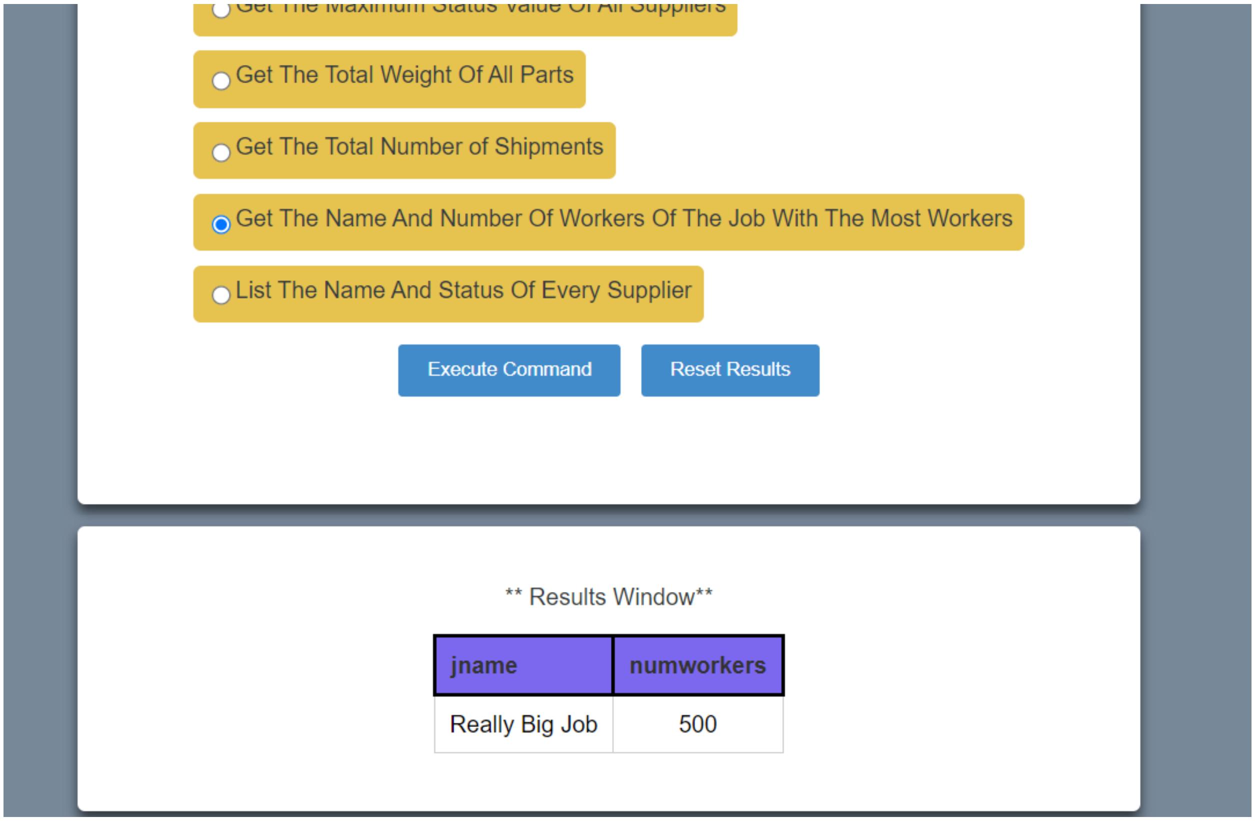
○ Get The Name And Number Of Workers Of The Job With The Most Workers

○ List The Name And Status Of Every Supplier

** Results Window**

The_Total_Number_Of_Shipments
61

4



○ Get The Maximum Status Value Of All Suppliers

○ Get The Total Weight Of All Parts

○ Get The Total Number of Shipments

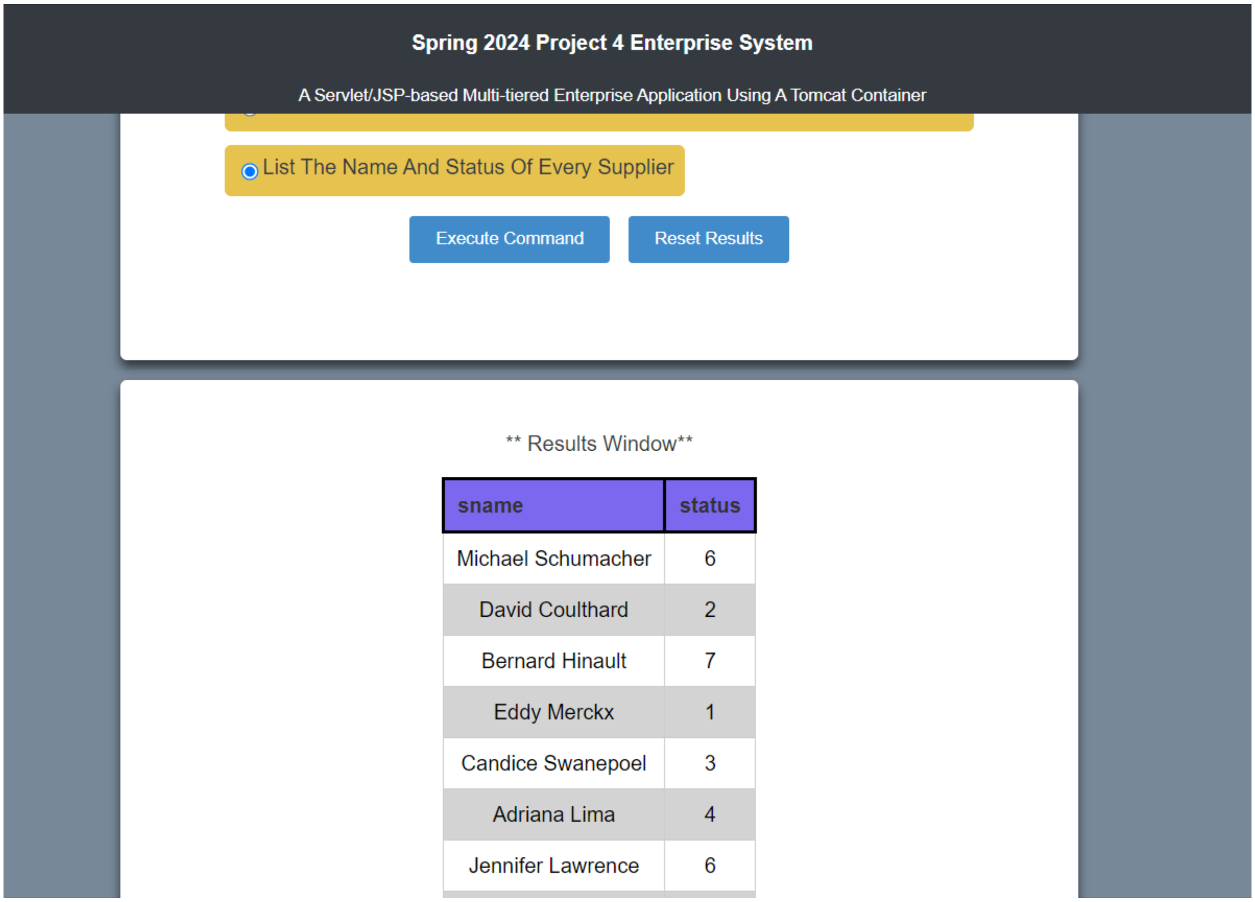
● Get The Name And Number Of Workers Of The Job With The Most Workers

○ List The Name And Status Of Every Supplier

** Results Window**

jname	numworkers
Really Big Job	500

5



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A Servlet/JSP-based Multi-tiered Enterprise Application Using A Tomcat Container

● List The Name And Status Of Every Supplier

** Results Window**

sname	status
Michael Schumacher	6
David Coulthard	2
Bernard Hinault	7
Eddy Merckx	1
Candice Swanepoel	3
Adriana Lima	4
Jennifer Lawrence	6