

# TASK 6

## 6.1 Screenshots showing the testing of Query 1

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given
(17) Quit;
1
Please enter customer name (varchar):
Charles
Please enter customer address (varchar):
500 South Street
Please enter customer category (1-10):
3
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Customer.

```

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given
(17) Quit;
1
Please enter customer name (varchar):
Frank
Please enter customer address (varchar):
501 North Sea
Please enter customer category (1-10):
6
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Customer.

```

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given
(17) Quit;
1
Please enter customer name (varchar):
Ty
Please enter customer address (varchar):
720 West Drive
Please enter customer category (1-10):
8
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Customer.

```

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them to
(17) Quit;
1
Please enter customer name (varchar):
Howard
Please enter customer address (varchar):
500 Progress Avenue
Please enter customer category (1-10):
7
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Customer.

```

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them to a file;
(17) Quit;
1
Please enter customer name (varchar):
Quentin
Please enter customer address (varchar):
300 Hollywood Boulevard
Please enter customer category (1-10):
10
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Customer.

```

Donner\_Catherine\_IP\_Task4.sql - disconnected

SQLQuery\_1 - donn00...nn0031

Run Cancel Disconnect Change Database: cs-dsa-4513-sql-db Estimated P

1    `SELECT * FROM Customer;`

**Results**   **Messages**

	Name	Address	Category
1	Charles	500 South Street	3
2	Frank	501 North Sea	6
3	Howard	500 Progress Ave...	7
4	Quentin	300 Hollywood Bo...	10
5	Ty	720 West Drive	8

## 6.2 Screenshots showing the testing of Query 2

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them to a file;
(17) Quit;
2
Please enter department number:
1
Please enter department data:
finance
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Department.

```

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them to a file;
(17) Quit;
2
Please enter department number:
2
Please enter department data:
shop
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Department.

```

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them to
(17) Quit;
2
Please enter department number:
3
Please enter department data:
job
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Department.

```

```

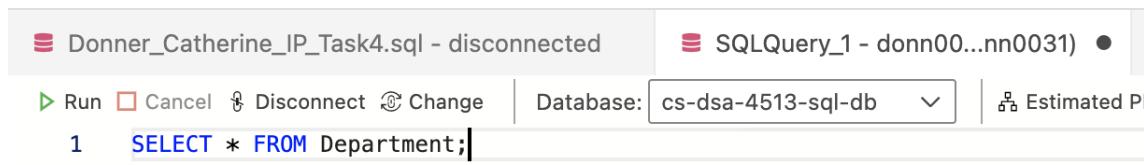
WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them to
(17) Quit;
2
Please enter department number:
4
Please enter department data:
budget
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Department.

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM

- (1) Enter a new customer;
- (2) Enter a new department;
- (3) Enter a new process;
- (4) Enter a new assembly;
- (5) Create a new account;
- (6) Enter a new job;
- (7) Enter a completed job;
- (8) Enter a new transaction;
- (9) Retrieve the total cost from an assembly;
- (10) Retrieve the total labor time within a department for jobs completed;
- (11) Retrieve the processes and departments responsible for processes;
- (12) Retrieve the customers whose category is in a given range;
- (13) Delete all cut-jobs with job-no in a given range;
- (14) Change the color of a paint job;
- (15) Import: Enter new customers from a data file until the file is empty;
- (16) Export: Retrieve the customers (in name order) whose category is in a given range and output them to a file;
- (17) Quit;

**2**  
Please enter department number:  
**5**  
Please enter department data:  
**processing**  
Connecting to the database...  
Dispatching the query...  
Done. 1 rows inserted into Department.



The screenshot shows a SQL Server Management Studio interface. At the top, there are two tabs: 'Donner\_Catherine\_IP\_Task4.sql - disconnected' and 'SQLQuery\_1 - donn00...nn0031)'. Below the tabs, there are buttons for 'Run', 'Cancel', 'Disconnect', 'Change', and a dropdown for 'Database' set to 'cs-dsa-4513-sql-db'. A progress bar indicates the query is executing. The query itself is 'SELECT \* FROM Department;'. In the results pane, there is a 'Results' tab selected, showing a grid of data:

	Department_Number	Department_Data
1	1	finance
2	2	shop
3	3	job
4	4	budget
5	5	processing

A button labeled 'Results grid' is visible on the right side of the results pane.

### 6.3 Screenshots showing the testing of Query 3

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them to a file;
(17) Quit;
3
Please enter process ID:
1
Please enter process data (varchar):
paint process
Please enter department number:
2
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Process.
Please enter process type: paint, fit, or cut
paint
Please enter paint type (varchar):
oil
Please enter painting method (varchar):
brush
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Paint_Process.

```

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them to a file;
(17) Quit;
3
Please enter process ID:
2
Please enter process data (varchar):
fit process
Please enter department number:
1
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Process.
Please enter process type: paint, fit, or cut
fit
Please enter fit type (varchar):
tight
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Fit_Process.

```

```
WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them to a file;
(17) Quit;
3
Please enter process ID:
3
Please enter process data (varchar):
cut process
Please enter department number:
3
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Process.
Please enter process type: paint, fit, or cut
cut
Please enter cutting type (varchar):
shears
Please enter machine type (varchar):
saw machine
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Cut_Process.
```

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them to a file;
(17) Quit;
3
Please enter process ID:
4
Please enter process data (varchar):
paint process
Please enter department number:
5
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Process.
Please enter process type: paint, fit, or cut
paint
Please enter paint type (varchar):
glossy
Please enter painting method (varchar):
spray
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Paint_Process.

```

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them to a file;
(17) Quit;
3
Please enter process ID:
5
Please enter process data (varchar):
cut process
Please enter department number:
4
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Process.
Please enter process type: paint, fit, or cut
cut
Please enter cutting type (varchar):
jagged
Please enter machine type (varchar):
slicer
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Cut_Process.

```

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them to a file;
(17) Quit;
3
Please enter process ID:
6
Please enter process data (varchar):
fit process
Please enter department number:
3
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Process.
Please enter process type: paint, fit, or cut
fit
Please enter fit type (varchar):
loose
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Fit_Process.

```

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them to a file;
(17) Quit;
3
Please enter process ID:
7
Please enter process data (varchar):
paint process
Please enter department number:
2
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Process.
Please enter process type: paint, fit, or cut
paint
Please enter paint type (varchar):
satin
Please enter painting method (varchar):
brush
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Paint_Process.

```

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them t
(17) Quit;
3
Please enter process ID:
8
Please enter process data (varchar):
fit process
Please enter department number:
1
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Process.
Please enter process type: paint, fit, or cut
fit
Please enter fit type (varchar):
tight
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Fit_Process.

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them t
(17) Quit;
3
Please enter process ID:
9
Please enter process data (varchar):
cut process
Please enter department number:
4
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Process.
Please enter process type: paint, fit, or cut
cut
Please enter cutting type (varchar):
smooth
Please enter machine type (varchar):
razor machine
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Cut_Process.

```

```
WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them to a file;
(17) Quit;

3
Please enter process ID:
10
Please enter process data (varchar):
cut process
Please enter department number:
5
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Process.
Please enter process type: paint, fit, or cut
cut
Please enter cutting type (varchar):
scythe
Please enter machine type (varchar):
chopper
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Cut_Process.
```

task4.sql - disconnected    Donner\_Catherine\_IP\_Task5a.sql - disconnected    SQLQuery\_1 - donn00...nn0031) ●

Run Cancel ⚡ Disconnect ⚡ Change Database: cs-dsa-4513-sql-db ▾ Estimated Plan ⚡ Enable Actual Plan ✓ Pai

```

1  SELECT * FROM Process;
2  SELECT * FROM Paint_Process;
3  SELECT * FROM Fit_Process;
4  SELECT * FROM Cut_Process;|
```

**Results**

	Process_Id	Process_Data	Department_Number
1	1	paint process	2
2	2	fit process	1
3	3	cut process	3
4	4	paint process	5
5	5	cut process	4
6	6	fit process	3
7	7	paint process	2
8	8	fit process	1
9	9	cut process	4
10	10	cut process	5

	Process_Id	Paint_Type	Painting_Method
1	1	oil	brush
2	4	glossy	spray
3	7	satin	brush

	Process_Id	Fit_Type
1	2	tight
2	6	loose
3	8	tight

sk4.sql - disconnected    Donner\_Catherine\_IP\_Task5a.sql - disconnected    SQLQuery\_1 - donn00...nn0031 ●

Run Cancel ⚙ Disconnect ⚙ Change Database: cs-dsa-4513-sql-db ▾ Estimated Plan ⚙ Enable Actual Plan ✓ P

```

1  SELECT * FROM Process;
2  SELECT * FROM Paint_Process;
3  SELECT * FROM Fit_Process;
4  SELECT * FROM Cut_Process;

```

**Results**   **Messages**

7	7	paint process	2
8	8	fit process	1
9	9	cut process	4
10	10	cut process	5

	Process_Id ▾	Paint_Type ▾	Painting_Method ▾
1	1	oil	brush
2	4	glossy	spray
3	7	satin	brush

	Process_Id ▾	Fit_Type ▾
1	2	tight
2	6	loose
3	8	tight

Results grid

	Process_Id ▾	Cutting_Type ▾	Machine_Type ▾
1	3	shears	saw machine
2	5	jagged	slicer
3	9	smooth	razor machine
4	10	scythe	chopper

#### 6.4 Screenshots showing the testing of Query 4

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them to a file;
(17) Quit;
4
Please enter assembly ID:
1
Please enter date ordered (MM/DD/YYYY):
03/01/2023
Please enter assembly details (varchar):
random assembly
Please enter customer name (varchar):
Charles
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Assembly.
Please enter process ID to associate with assembly:
2
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Begin_Manufacture.

```

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them to a file;
(17) Quit;
4
Please enter assembly ID:
2
Please enter date ordered (MM/DD/YYYY):
09/04/2023
Please enter assembly details (varchar):
nice assembly
Please enter customer name (varchar):
Frank
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Assembly.
Please enter process ID to associate with assembly:
3
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Begin_Manufacture.

```

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them to a file;
(17) Quit;
4
Please enter assembly ID:
3
Please enter date ordered (MM/DD/YYYY):
08/04/2023
Please enter assembly details (varchar):
try assembly
Please enter customer name (varchar):
Charles
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Assembly.
Please enter process ID to associate with assembly:
1
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Begin_Manufacture.

```

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them to a file;
(17) Quit;
4
Please enter assembly ID:
4
Please enter date ordered (MM/DD/YYYY):
05/05/2023
Please enter assembly details (varchar):
build assembly
Please enter customer name (varchar):
Howard
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Assembly.
Please enter process ID to associate with assembly:
10
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Begin_Manufacture.

```

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them t
(17) Quit;

```

**4**

Please enter assembly ID:

**5**

Please enter date ordered (MM/DD/YYYY):

**06/07/2023**

Please enter assembly details (varchar):

**construction assembly**

Please enter customer name (varchar):

**Quentin**

Connecting to the database...

Dispatching the query...

Done. 1 rows inserted into Assembly.

Please enter process ID to associate with assembly:

**6**

Connecting to the database...

Dispatching the query...

Done. 1 rows inserted into Begin\_Manufacture.

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM

```

```

(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them t
(17) Quit;

```

**4**

Please enter assembly ID:

**6**

Please enter date ordered (MM/DD/YYYY):

**01/09/2023**

Please enter assembly details (varchar):

**used assembly**

Please enter customer name (varchar):

**Ty**

Connecting to the database...

Dispatching the query...

Done. 1 rows inserted into Assembly.

Please enter process ID to associate with assembly:

**7**

Connecting to the database...

Dispatching the query...

Done. 1 rows inserted into Begin\_Manufacture.

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them t
(17) Quit;

```

**4**  
Please enter assembly ID:

**7**  
Please enter date ordered (MM/DD/YYYY):  
**09/14/2023**

Please enter assembly details (varchar):  
**crop assembly**

Please enter customer name (varchar):

**Ty**  
Connecting to the database...

Dispatching the query...

Done. 1 rows inserted into Assembly.

Please enter process ID to associate with assembly:

**9**  
Connecting to the database...

Dispatching the query...

Done. 1 rows inserted into Begin\_Manufacture.

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them t
(17) Quit;

```

**4**  
Please enter assembly ID:

**8**  
Please enter date ordered (MM/DD/YYYY):  
**07/08/2023**

Please enter assembly details (varchar):  
**ordered assembly**

Please enter customer name (varchar):

**Quentin**

Connecting to the database...

Dispatching the query...

Done. 1 rows inserted into Assembly.

Please enter process ID to associate with assembly:

**4**  
Connecting to the database...

Dispatching the query...

Done. 1 rows inserted into Begin\_Manufacture.

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them
(17) Quit;
4
Please enter assembly ID:
9
Please enter date ordered (MM/DD/YYYY):
04/29/2023
Please enter assembly details (varchar):
random assembly
Please enter customer name (varchar):
Charles
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Assembly.
Please enter process ID to associate with assembly:
5
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Begin_Manufacture.

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them
(17) Quit;
4
Please enter assembly ID:
10
Please enter date ordered (MM/DD/YYYY):
07/30/2023
Please enter assembly details (varchar):
try assembly
Please enter customer name (varchar):
Ty
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Assembly.
Please enter process ID to associate with assembly:
2
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Begin_Manufacture.

```

Donner\_Catherine\_IP\_Task4.sql - disconnected      SQLQuery\_1 - donn00...nn0031 ●

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

```

1  SELECT * FROM Assembly;
2  SELECT * FROM Begin_Manufacture;

```

---

**Results**   **Messages**

	Assembly_Id	Date_Ordered	Assembly_Details	Customer_Name
1	1	2023-03-01	random assembly	Charles
2	2	2023-09-04	nice assembly	Frank
3	3	2023-08-04	try assembly	Charles
4	4	2023-05-05	build assembly	Howard
5	5	2023-06-07	construction assembly	Quentin
6	6	2023-01-09	used assembly	Ty
7	7	2023-09-14	crop assembly	Ty
8	8	2023-07-08	ordered assembly	Quentin
9	9	2023-04-29	random assembly	Charles
10	10	2023-07-30	try assembly	Ty

	Assembly_Id	Process_Id
1	1	2
2	2	3
3	3	1
4	4	10
5	5	6
6	6	7
7	7	9
8	8	4
9	9	5
10	10	2

## 6.5 Screenshots showing the testing of Query 5

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them ;
(17) Quit;
5
Please enter account number:
1
Please enter establish date (MM/DD/YYYY):
01/02/2023
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Account.
Please enter account type: assembly, department, or process
assembly
Please enter assembly account details (float):
0.00
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Assembly_Account.
Please enter assembly ID to associate account with:
4
Dispatching the query...
Done. 1 rows inserted into Account_For_Assembly.

```

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them t
(17) Quit;
5
Please enter account number:
2
Please enter establish date (MM/DD/YYYY):
04/08/2023
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Account.
Please enter account type: assembly, department, or process
department
Please enter department account details (float):
0.00
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Department_Account.
Please enter department number to associate account with:
5
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Account_For_Department.

```

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them t
(17) Quit;
5
Please enter account number:
3
Please enter establish date (MM/DD/YYYY):
05/08/2023
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Account.
Please enter account type: assembly, department, or process
process
Please enter process account details (float):
0.00
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Process_Account.
Please enter process ID to associate account with:
2
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Account_For_Process.

```

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them t
(17) Quit;
5
Please enter account number:
4
Please enter establish date (MM/DD/YYYY):
10/03/2023
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Account.
Please enter account type: assembly, department, or process
assembly
Please enter assembly account details (float):
0.00
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Assembly_Account.
Please enter assembly ID to associate account with:
8
Dispatching the query...
Done. 1 rows inserted into Account_For_Assembly.

```

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them
(17) Quit;
5
Please enter account number:
5
Please enter establish date (MM/DD/YYYY):
11/02/2023
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Account.
Please enter account type: assembly, department, or process
department
Please enter department account details (float):
0.00
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Department_Account.
Please enter department number to associate account with:
1
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Account_For_Department.

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them
(17) Quit;
5
Please enter account number:
6
Please enter establish date (MM/DD/YYYY):
03/15/2023
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Account.
Please enter account type: assembly, department, or process
process
Please enter process account details (float):
0.00
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Process_Account.
Please enter process ID to associate account with:
5
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Account_For_Process.

```

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them ;
(17) Quit;

5
Please enter account number:
7
Please enter establish date (MM/DD/YYYY):
06/06/2023
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Account.
Please enter account type: assembly, department, or process
assembly
Please enter assembly account details (float):
0.00
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Assembly_Account.
Please enter assembly ID to associate account with:
6
Dispatching the query...
Done. 1 rows inserted into Account_For_Assembly.

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them ;
(17) Quit;

5
Please enter account number:
8
Please enter establish date (MM/DD/YYYY):
08/10/2023
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Account.
Please enter account type: assembly, department, or process
department
Please enter department account details (float):
0.00
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Department_Account.
Please enter department number to associate account with:
3
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Account_For_Department.

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM

- (1) Enter a new customer;
- (2) Enter a new department;
- (3) Enter a new process;
- (4) Enter a new assembly;
- (5) Create a new account;
- (6) Enter a new job;
- (7) Enter a completed job;
- (8) Enter a new transaction;
- (9) Retrieve the total cost from an assembly;
- (10) Retrieve the total labor time within a department for jobs completed;
- (11) Retrieve the processes and departments responsible for processes;
- (12) Retrieve the customers whose category is in a given range;
- (13) Delete all cut-jobs with job-no in a given range;
- (14) Change the color of a paint job;
- (15) Import: Enter new customers from a data file until the file is empty;
- (16) Export: Retrieve the customers (in name order) whose category is in a given range and output them to a file;
- (17) Quit;

5

Please enter account number:

9

Please enter establish date (MM/DD/YYYY):

09/10/2023

Connecting to the database...

Dispatching the query...

Done. 1 rows inserted into Account.

Please enter account type: assembly, department, or process  
process

Please enter process account details (float):

0.00

Connecting to the database...

Dispatching the query...

Done. 1 rows inserted into Process\_Account.

Please enter process ID to associate account with:

1

Connecting to the database...

Dispatching the query...

Done. 1 rows inserted into Account\_For\_Process.

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM

- (1) Enter a new customer;
- (2) Enter a new department;
- (3) Enter a new process;
- (4) Enter a new assembly;
- (5) Create a new account;
- (6) Enter a new job;
- (7) Enter a completed job;
- (8) Enter a new transaction;
- (9) Retrieve the total cost from an assembly;
- (10) Retrieve the total labor time within a department for jobs completed;
- (11) Retrieve the processes and departments responsible for processes;
- (12) Retrieve the customers whose category is in a given range;
- (13) Delete all cut-jobs with job-no in a given range;
- (14) Change the color of a paint job;
- (15) Import: Enter new customers from a data file until the file is empty;
- (16) Export: Retrieve the customers (in name order) whose category is in a given range and output them to a file;
- (17) Quit;

5

Please enter account number:

10

Please enter establish date (MM/DD/YYYY):

10/21/2023

Connecting to the database...

Dispatching the query...

Done. 1 rows inserted into Account.

Please enter account type: assembly, department, or process  
assembly

Please enter assembly account details (float):

0.00

Connecting to the database...

Dispatching the query...

Done. 1 rows inserted into Assembly\_Account.

Please enter assembly ID to associate account with:

7

Dispatching the query...

Done. 1 rows inserted into Account\_For\_Assembly.

Donner\_Catherine\_IP\_Task4.sql - disconnected      SQLQuery\_1 - donn00...nn0031) ●

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

```

1  SELECT * FROM Account;
2  SELECT * FROM Assembly_Account;
3  SELECT * FROM Department_Account;
4  SELECT * FROM Process_Account;
5  SELECT * FROM Account_For_Assembly;
6  SELECT * FROM Account_For_Department;
7  SELECT * FROM Account_For_Process;

```

---

**Results**   **Messages**

	Account_No	Establish_Date
1	1	2023-01-02
2	2	2023-04-08
3	3	2023-05-08
4	4	2023-10-03
5	5	2023-11-02
6	6	2023-03-15
7	7	2023-06-06
8	8	2023-08-10
9	9	2023-09-10
10	10	2023-10-21

	Account_No	Details_1
1	1	0
2	4	0
3	7	0
4	10	0

	Account_No	Details_2
1	2	0
2	5	0
3	8	0

Donner\_Catherine\_IP\_Task4.sql - disconnected      SQLQuery\_1 - donn00...nn0031 ●

Run Cancel Disconnect Change Database: cs-dsa-4513-sql-db Estimated F

```

1  SELECT * FROM Account;
2  SELECT * FROM Assembly_Account;
3  SELECT * FROM Department_Account;
4  SELECT * FROM Process_Account;
5  SELECT * FROM Account_For_Assembly;
6  SELECT * FROM Account_For_Department;
7  SELECT * FROM Account_For_Process;

```

---

**Results**    **Messages**

---

	Account_No	Details_3
1	3	0
2	6	0
3	9	0

	Account_No	Assembly_Id
1	1	4
2	4	8
3	7	6
4	10	7

Results grid

	Account_No	Department_Number
1	2	5
2	5	1
3	8	3

	Account_No	Process_Id
1	3	2
2	6	5
3	9	1

## 6.6 Screenshots showing the testing of Query 6

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them t
(17) Quit;
6
Please enter job number:
1
Please enter commencement date of job (MM/DD/YYYY):
07/09/2023
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Job.
Please enter assembly ID to associate job with:
5
Please enter process ID to associate job with:
3
Dispatching the query...
Done. 1 rows inserted into Assign.

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them t
(17) Quit;
6
Please enter job number:
2
Please enter commencement date of job (MM/DD/YYYY):
03/07/2023
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Job.
Please enter assembly ID to associate job with:
7
Please enter process ID to associate job with:
8
Dispatching the query...
Done. 1 rows inserted into Assign.

```

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them t
(17) Quit;
6
Please enter job number:
3
Please enter commencement date of job (MM/DD/YYYY):
06/07/2023
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Job.
Please enter assembly ID to associate job with:
1
Please enter process ID to associate job with:
10
Dispatching the query...
Done. 1 rows inserted into Assign.

```

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them t
(17) Quit;
6
Please enter job number:
4
Please enter commencement date of job (MM/DD/YYYY):
01/05/2023
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Job.
Please enter assembly ID to associate job with:
4
Please enter process ID to associate job with:
5
Dispatching the query...
Done. 1 rows inserted into Assign.

```

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them to a file;
(17) Quit;
6
Please enter job number:
5
Please enter commencement date of job (MM/DD/YYYY):
09/01/2023
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Job.
Please enter assembly ID to associate job with:
9
Please enter process ID to associate job with:
2
Dispatching the query...
Done. 1 rows inserted into Assign.

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them to a file;
(17) Quit;
6
Please enter job number:
6
Please enter commencement date of job (MM/DD/YYYY):
02/16/2023
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Job.
Please enter assembly ID to associate job with:
10
Please enter process ID to associate job with:
3
Dispatching the query...
Done. 1 rows inserted into Assign.

```

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them t
(17) Quit;

```

**6**

Please enter job number:

**7**

Please enter commencement date of job (MM/DD/YYYY):

**12/02/2023**

Connecting to the database...

Dispatching the query...

Done. 1 rows inserted into Job.

Please enter assembly ID to associate job with:

**7**

Please enter process ID to associate job with:

**9**

Dispatching the query...

Done. 1 rows inserted into Assign.

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM

```

```

(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them t
(17) Quit;

```

**6**

Please enter job number:

**8**

Please enter commencement date of job (MM/DD/YYYY):

**11/03/2023**

Connecting to the database...

Dispatching the query...

Done. 1 rows inserted into Job.

Please enter assembly ID to associate job with:

**8**

Please enter process ID to associate job with:

**8**

Dispatching the query...

Done. 1 rows inserted into Assign.

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM  
 (1) Enter a new customer;  
 (2) Enter a new department;  
 (3) Enter a new process;  
 (4) Enter a new assembly;  
 (5) Create a new account;  
 (6) Enter a new job;  
 (7) Enter a completed job;  
 (8) Enter a new transaction;  
 (9) Retrieve the total cost from an assembly;  
 (10) Retrieve the total labor time within a department for jobs completed;  
 (11) Retrieve the processes and departments responsible for processes;  
 (12) Retrieve the customers whose category is in a given range;  
 (13) Delete all cut-jobs with job-no in a given range;  
 (14) Change the color of a paint job;  
 (15) Import: Enter new customers from a data file until the file is empty;  
 (16) Export: Retrieve the customers (in name order) whose category is in a given range and output them  
 (17) Quit;

6

Please enter job number:

9

Please enter commencement date of job (MM/DD/YYYY):

04/16/2023

Connecting to the database...

Dispatching the query...

Done. 1 rows inserted into Job.

Please enter assembly ID to associate job with:

6

Please enter process ID to associate job with:

6

Dispatching the query...

Done. 1 rows inserted into Assign.

---

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM

(1) Enter a new customer;  
 (2) Enter a new department;  
 (3) Enter a new process;  
 (4) Enter a new assembly;  
 (5) Create a new account;  
 (6) Enter a new job;  
 (7) Enter a completed job;  
 (8) Enter a new transaction;  
 (9) Retrieve the total cost from an assembly;  
 (10) Retrieve the total labor time within a department for jobs completed;  
 (11) Retrieve the processes and departments responsible for processes;  
 (12) Retrieve the customers whose category is in a given range;  
 (13) Delete all cut-jobs with job-no in a given range;  
 (14) Change the color of a paint job;  
 (15) Import: Enter new customers from a data file until the file is empty;  
 (16) Export: Retrieve the customers (in name order) whose category is in a given range and output them  
 (17) Quit;

6

Please enter job number:

10

Please enter commencement date of job (MM/DD/YYYY):

08/20/2023

Connecting to the database...

Dispatching the query...

Done. 1 rows inserted into Job.

Please enter assembly ID to associate job with:

2

Please enter process ID to associate job with:

1

Dispatching the query...

Done. 1 rows inserted into Assign.

Donner\_Catherine\_IP\_Task4.sql - disconnected      SQLQuery\_1 - donn00...nn0031) ●

Run Cancel Disconnect Change Database: cs-dsa-4513-sql-db Estimated F

```
1  SELECT * FROM Job;
2  SELECT * FROM Assign;
```

---

**Results** Messages

	Job_No	Commence_Date	Complete_Date
1	1	2023-07-09	NULL
2	2	2023-03-07	NULL
3	3	2023-06-07	NULL
4	4	2023-01-05	NULL
5	5	2023-09-01	NULL
6	6	2023-02-16	NULL
7	7	2023-12-02	NULL
8	8	2023-11-03	NULL
9	9	2023-04-16	NULL
10	10	2023-08-20	NULL

	Job_No	Assembly_Id	Process_Id
1	1	5	3
2	2	7	8
3	3	1	10
4	4	4	5
5	5	9	2
6	6	10	3
7	7	7	9
8	8	8	8
9	9	6	6
10	10	2	1

### 6.7 Screenshots showing the testing of Query 7

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them t
(17) Quit;
7
Please enter job number for completed job:
1
Please enter completion date of job (MM/DD/YYYY):
07/27/2023
Connecting to the database...
Dispatching the query...
Done. 1 rows updated in Job.
Please enter job type: paint, fit, or cut
paint
Please enter paint color (varchar):
red
Please enter volume (int):
125
Please enter labor time of job (int):
100
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Paint_Job.

```

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them t
(17) Quit;
7
Please enter job number for completed job:
2
Please enter completion date of job (MM/DD/YYYY):
03/26/2023
Connecting to the database...
Dispatching the query...
Done. 1 rows updated in Job.
Please enter job type: paint, fit, or cut
fit
Please enter labor time of job (int):
40
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Fit_Job.

```

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them to a file;
(17) Quit;

7
Please enter job number for completed job:
3
Please enter completion date of job (MM/DD/YYYY):
06/21/2023
Connecting to the database...
Dispatching the query...
Done. 1 rows updated in Job.
Please enter job type: paint, fit, or cut
cut
Please enter machine type (varchar):
saw machine
Please enter machine time used (int):
50
Please enter material used (varchar):
metal
Please enter labor time of job (int):
105
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Cut_Job.

```

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them to a file;
(17) Quit;

7
Please enter job number for completed job:
4
Please enter completion date of job (MM/DD/YYYY):
02/10/2023
Connecting to the database...
Dispatching the query...
Done. 1 rows updated in Job.
Please enter job type: paint, fit, or cut
paint
Please enter paint color (varchar):
blue
Please enter volume (int):
300
Please enter labor time of job (int):
200
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Paint_Job.

```

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them to a file;
(17) Quit;
7
Please enter job number for completed job:
5
Please enter completion date of job (MM/DD/YYYY):
09/30/2023
Connecting to the database...
Dispatching the query...
Done. 1 rows updated in Job.
Please enter job type: paint, fit, or cut
fit
Please enter labor time of job (int):
170
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Fit_Job.

```

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them to a file;
(17) Quit;
7
Please enter job number for completed job:
6
Please enter completion date of job (MM/DD/YYYY):
03/02/2023
Connecting to the database...
Dispatching the query...
Done. 1 rows updated in Job.
Please enter job type: paint, fit, or cut
cut
Please enter machine type (varchar):
chainsaw
Please enter machine time used (int):
25
Please enter material used (varchar):
carbon
Please enter labor time of job (int):
90
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Cut_Job.

```

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them
(17) Quit;
7
Please enter job number for completed job:
7
Please enter completion date of job (MM/DD/YYYY):
12/13/2023
Connecting to the database...
Dispatching the query...
Done. 1 rows updated in Job.
Please enter job type: paint, fit, or cut
paint
Please enter paint color (varchar):
green
Please enter volume (int):
80
Please enter labor time of job (int):
80
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Paint_Job.

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them t
(17) Quit;
7
Please enter job number for completed job:
8
Please enter completion date of job (MM/DD/YYYY):
11/24/2023
Connecting to the database...
Dispatching the query...
Done. 1 rows updated in Job.
Please enter job type: paint, fit, or cut
fit
Please enter labor time of job (int):
110
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Fit_Job.

```

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them t
(17) Quit;
7
Please enter job number for completed job:
9
Please enter completion date of job (MM/DD/YYYY):
05/04/2023
Connecting to the database...
Dispatching the query...
Done. 1 rows updated in Job.
Please enter job type: paint, fit, or cut
cut
Please enter machine type (varchar):
shears
Please enter machine time used (int):
60
Please enter material used (varchar):
leather
Please enter labor time of job (int):
120
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Cut_Job.

```

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them
(17) Quit;
7
Please enter job number for completed job:
10
Please enter completion date of job (MM/DD/YYYY):
09/10/2023
Connecting to the database...
Dispatching the query...
Done. 1 rows updated in Job.
Please enter job type: paint, fit, or cut
paint
Please enter paint color (varchar):
black
Please enter volume (int):
130
Please enter labor time of job (int):
130
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Paint_Job.

```

task4.sql - disconnected      Donner\_Catherine\_IP\_Task5a.sql - disconnected

▶ Run    ⚡ Cancel    ⚡ Disconnect    ⚡ Change    Database: cs-dsa-4513-sql-db

```
1   SELECT * FROM Job;
```

---

**Results**    **Messages**

	Job_No	Commence_Date	Complete_Date
1	1	2023-07-09	2023-07-27
2	2	2023-03-07	2023-03-26
3	3	2023-06-07	2023-06-21
4	4	2023-01-05	2023-02-10
5	5	2023-09-01	2023-09-30
6	6	2023-02-16	2023-03-02
7	7	2023-12-02	2023-12-13
8	8	2023-11-03	2023-11-24
9	9	2023-04-16	2023-05-04
10	10	2023-08-20	2023-09-10

Donner\_Catherine\_IP\_Task4.sql - disconnected      SQLQuery\_1 - donn00...nn0031) ●

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

```

1  SELECT * FROM Job;
2  SELECT * FROM Paint_Job;
3  SELECT * FROM Fit_Job;
4  SELECT * FROM Cut_Job;

```

**Results**   **Messages**

---

6	6	2023-02-16	2023-03-02
7	7	2023-12-02	2023-12-13
8	8	2023-11-03	2023-11-24
9	9	2023-04-16	2023-05-04
10	10	2023-08-20	2023-09-10

	Job_No	Color	Volume	Labor_Time
1	1	red	125	100
2	4	blue	300	200
3	7	green	80	80
4	10	black	130	130

	Job_No	Labor_Time
1	2	40
2	5	170
3	8	110

Results grid

	Job_No	Machine_Type	Machine_Time_Used	Material_Used	Labor_Time
1	3	saw machine	50	metal	105
2	6	chainsaw	25	carbon	90
3	9	shears	60	leather	120

## 6.8 Screenshots showing the testing of Query 8

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them to a file;
(17) Quit;
8
Please enter transaction number:
1
Please enter sup cost (float):
90.04
Please enter job number associated with transaction:
6
Please enter account number associated with transaction:
1
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Cost_Transaction.
Is the account that will be updated an assembly, department, or process account?
assembly
Connecting to the database...
Dispatching the query...
Done. 1 rows updated in Assembly_Account.

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them to a file;
(17) Quit;
8
Please enter transaction number:
2
Please enter sup cost (float):
201.65
Please enter job number associated with transaction:
2
Please enter account number associated with transaction:
4
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Cost_Transaction.
Is the account that will be updated an assembly, department, or process account?
assembly
Connecting to the database...
Dispatching the query...
Done. 1 rows updated in Assembly_Account.

```

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them to a file;
(17) Quit;

8
Please enter transaction number:
3
Please enter sup cost (float):
101.93
Please enter job number associated with transaction:
9
Please enter account number associated with transaction:
7
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Cost_Transaction.
Is the account that will be updated an assembly, department, or process account?
assembly
Connecting to the database...
Dispatching the query...
Done. 1 rows updated in Assembly_Account.|

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them to a file;
(17) Quit;

8
Please enter transaction number:
4
Please enter sup cost (float):
87.92
Please enter job number associated with transaction:
2
Please enter account number associated with transaction:
2
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Cost_Transaction.
Is the account that will be updated an assembly, department, or process account?
department
Connecting to the database...
Dispatching the query...
Done. 1 rows updated in Department_Account.

```

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them t
(17) Quit;
8
Please enter transaction number:
5
Please enter sup cost (float):
98.45
Please enter job number associated with transaction:
1
Please enter account number associated with transaction:
8
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Cost_Transaction.
Is the account that will be updated an assembly, department, or process account?
department
Connecting to the database...
Dispatching the query...
Done. 1 rows updated in Department_Account.

```

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them t
(17) Quit;
8
Please enter transaction number:
6
Please enter sup cost (float):
430.29
Please enter job number associated with transaction:
2
Please enter account number associated with transaction:
6
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Cost_Transaction.
Is the account that will be updated an assembly, department, or process account?
process
Connecting to the database...
Dispatching the query...
Done. 1 rows updated in Process_Account.

```

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them to a file;
(17) Quit;

8
Please enter transaction number:
7
Please enter sup cost (float):
320.68
Please enter job number associated with transaction:
3
Please enter account number associated with transaction:
9
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Cost_Transaction.
Is the account that will be updated an assembly, department, or process account?
process
Connecting to the database...
Dispatching the query...
Done. 1 rows updated in Process_Account.

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them to a file;
(17) Quit;

8
Please enter transaction number:
8
Please enter sup cost (float):
56.09
Please enter job number associated with transaction:
5
Please enter account number associated with transaction:
10
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Cost_Transaction.
Is the account that will be updated an assembly, department, or process account?
assembly
Connecting to the database...
Dispatching the query...
Done. 1 rows updated in Assembly_Account.

```

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them
(17) Quit;
8
Please enter transaction number:
9
Please enter sup cost (float):
48.20
Please enter job number associated with transaction:
4
Please enter account number associated with transaction:
7
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Cost_Transaction.
Is the account that will be updated an assembly, department, or process account?
assembly
Connecting to the database...
Dispatching the query...
Done. 1 rows updated in Assembly_Account.

```

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them
(17) Quit;
8
Please enter transaction number:
10
Please enter sup cost (float):
220.56
Please enter job number associated with transaction:
3
Please enter account number associated with transaction:
5
Connecting to the database...
Dispatching the query...
Done. 1 rows inserted into Cost_Transaction.
Is the account that will be updated an assembly, department, or process account?
department
Connecting to the database...
Dispatching the query...
Done. 1 rows updated in Department_Account.

```

Donner\_Catherine\_IP\_Task4.sql - disconnected      SQLQuery\_1 - donn00...nn0031 ●

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

```

1  SELECT * FROM Cost_Transaction;
2  SELECT * FROM Assembly_Account;
3  SELECT * FROM Department_Account;
4  SELECT * FROM Process_Account;
```

### Results    Messages

	Transaction_No	Sup_Cost	Job_No	Account_No
1	1	90.04000091552734	6	1
2	2	201.64999389648438	2	4
3	3	101.93000030517578	9	7
4	4	87.91999816894531	2	2
5	5	98.44999694824219	1	8
6	6	430.2900085449219	2	6
7	7	320.67999267578125	3	9
8	8	56.09000015258789	5	10
9	9	48.20000076293945	4	7
10	10	220.55999755859375	3	5

	Account_No	Details_1
1	1	90.04000091552734
2	4	201.64999389648438
3	7	150.13000106811523
4	10	56.09000015258789

	Account_No	Details_2
1	2	87.91999816894531
2	5	220.55999755859375
3	8	98.44999694824219

Donner\_Catherine\_IP\_Task4.sql - disconnected      SQLQuery\_1 - donn00...nn0031 ●

Run Cancel Disconnect Change Database: cs-dsa-4513-sql-db Estimated PL

```

1  SELECT * FROM Cost_Transaction;
2  SELECT * FROM Assembly_Account;
3  SELECT * FROM Department_Account;
4  SELECT * FROM Process_Account;

```

**Results** Messages

4	4	87.91999816894531	2	2
5	5	98.44999694824219	1	8
6	6	430.2900085449219	2	6
7	7	320.67999267578125	3	9
8	8	56.09000015258789	5	10
9	9	48.2000076293945	4	7
10	10	220.55999755859375	3	5

	Account_No	Details_1
1	1	90.04000091552734
2	4	201.64999389648438
3	7	150.13000106811523
4	10	56.09000015258789

	Account_No	Details_2
1	2	87.91999816894531
2	5	220.55999755859375
3	8	98.44999694824219

	Account_No	Details_3
1	3	0
2	6	430.2900085449219
3	9	320.67999267578125

## 6.9 Screenshots showing the testing of Query 9

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them to
(17) Quit;
9
Please enter assembly ID to display total cost for:
6
Connecting to the database...
Dispatching the query...
Total cost for assembly ID:
total cost
150.13000106811523

```

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them to
(17) Quit;
9
Please enter assembly ID to display total cost for:
7
Connecting to the database...
Dispatching the query...
Total cost for assembly ID:
total cost
56.09000015258789

```

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them to a file;
(17) Quit;

9
Please enter assembly ID to display total cost for:
4
Connecting to the database...
Dispatching the query...
Total cost for assembly ID:
total cost
90.04000091552734

```

### 6.10 Screenshots showing the testing of Query 10

Note that I added more rows to Job, Paint\_Job, Fit\_Job, Cut\_Job, and Assign

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them to a file;
(17) Quit;

10
Please enter completion date of job (MM/DD/YYYY):
09/30/2023
Connecting to the database...
Dispatching the query...
Total labor time for departments for all jobs:
department number | total labor time
1 | 170
3 | 340
4 | 80

```

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them t
(17) Quit;

```

**10**

Please enter completion date of job (MM/DD/YYYY):

**07/27/2023**

Connecting to the database...

Dispatching the query...

Total labor time for departments for all jobs:

department number | total labor time

3 | 100

5 | 300

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them t
(17) Quit;

```

**10**

Please enter completion date of job (MM/DD/YYYY):

**05/04/2023**

Connecting to the database...

Dispatching the query...

Total labor time for departments for all jobs:

department number | total labor time

1 | 50

3 | 60

## 6.11 Screenshots showing the testing of Query 11

## WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM

- (1) Enter a new customer;
- (2) Enter a new department;
- (3) Enter a new process;
- (4) Enter a new assembly;
- (5) Create a new account;
- (6) Enter a new job;
- (7) Enter a completed job;
- (8) Enter a new transaction;
- (9) Retrieve the total cost from an assembly;
- (10) Retrieve the total labor time within a department for jobs completed;
- (11) Retrieve the processes and departments responsible for processes;
- (12) Retrieve the customers whose category is in a given range;
- (13) Delete all cut-jobs with job-no in a given range;
- (14) Change the color of a paint job;
- (15) Import: Enter new customers from a data file until the file is empty;
- (16) Export: Retrieve the customers (in name order) whose category is in a given range and output them to a file;
- (17) Quit;

11

Please enter assembly ID to display processes and departments:

1

Connecting to the database...

Dispatching the query...

Processes and departments for assembly ID:

process id	process data	department number	commence date
2	fit process	1	2023-04-17
10	cut process	5	2023-06-07
6	fit process	3	2023-09-07

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them to a file;
(17) Quit;

```

**11**

Please enter assembly ID to display processes and departments:

**7**

Connecting to the database...

Dispatching the query...

Processes and departments for assembly ID:

process id	process data	department number	commence date
3	cut process	3	2023-01-10
8	fit process	1	2023-03-07
9	cut process	4	2023-12-02

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM

```

```

(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them to a file;
(17) Quit;

```

**11**

Please enter assembly ID to display processes and departments:

**5**

Connecting to the database...

Dispatching the query...

Processes and departments for assembly ID:

process id	process data	department number	commence date
3	cut process	3	2023-07-09
10	cut process	5	2023-07-11

## 6.12 Screenshots showing the testing of Query 12

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them t
(17) Quit;

```

**12**

Please enter lower category limit:

**8**

Please enter higher category limit:

**10**

Connecting to the database...

Dispatching the query...

Customers within the category range:

name   address   category
Quentin   300 Hollywood Boulevard   10
Ty   720 West Drive   8

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM

```

```

(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them t
(17) Quit;

```

**12**

Please enter lower category limit:

**6**

Please enter higher category limit:

**8**

Connecting to the database...

Dispatching the query...

Customers within the category range:

name   address   category
Frank   501 North Sea   6
Howard   500 Progress Avenue   7
Ty   720 West Drive   8

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them to a file;
(17) Quit;

12
Please enter lower category limit:
1
Please enter higher category limit:
6
Connecting to the database...
Dispatching the query...
Customers within the category range:
name | address | category
Charles | 500 South Street | 3
Frank | 501 North Sea | 6

```

### 6.13 Screenshots showing the testing of Query 13

Note that I added more records to Job, Cut\_Job, and Assign to account for the 3 query deletions

The screenshot shows the SSMS interface with two tabs: 'Results' and 'Messages'. The 'Results' tab is selected and displays the following table:

	Job_No	Machine_Type	Machine_Time_Used	Material_Used	Labor_Time
1	3	saw machine	50	metal	105
2	6	chainsaw	25	carbon	90
3	9	shears	60	leather	120
4	13	chainsaw	70	iron	190
5	14	shears	55	iron	170
6	16	saw machine	75	carbon	200
7	17	chopper	30	sheet metal	150
8	18	shears	70	sheet metal	100
9	25	shears	25	sheet metal	80
10	31	chopper	40	iron	125
11	32	saw machine	75	iron	170

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM

- (1) Enter a new customer;
- (2) Enter a new department;
- (3) Enter a new process;
- (4) Enter a new assembly;
- (5) Create a new account;
- (6) Enter a new job;
- (7) Enter a completed job;
- (8) Enter a new transaction;
- (9) Retrieve the total cost from an assembly;
- (10) Retrieve the total labor time within a department for jobs completed;
- (11) Retrieve the processes and departments responsible for processes;
- (12) Retrieve the customers whose category is in a given range;
- (13) Delete all cut-jobs with job-no in a given range;
- (14) Change the color of a paint job;
- (15) Import: Enter new customers from a data file until the file is empty;
- (16) Export: Retrieve the customers (in name order) whose category is in a given range and output them
- (17) Quit;

**13**

Please enter lower job number limit:

**30**

Please enter higher job number limit:

**35**

Connecting to the database...

Dispatching the query...

Done. 2 rows deleted from Cut\_Job.

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM

- (1) Enter a new customer;
- (2) Enter a new department;
- (3) Enter a new process;
- (4) Enter a new assembly;
- (5) Create a new account;
- (6) Enter a new job;
- (7) Enter a completed job;
- (8) Enter a new transaction;
- (9) Retrieve the total cost from an assembly;
- (10) Retrieve the total labor time within a department for jobs completed;
- (11) Retrieve the processes and departments responsible for processes;
- (12) Retrieve the customers whose category is in a given range;
- (13) Delete all cut-jobs with job-no in a given range;
- (14) Change the color of a paint job;
- (15) Import: Enter new customers from a data file until the file is empty;
- (16) Export: Retrieve the customers (in name order) whose category is in a given range and output them
- (17) Quit;

**13**

Please enter lower job number limit:

**13**

Please enter higher job number limit:

**16**

Connecting to the database...

Dispatching the query...

Done. 3 rows deleted from Cut\_Job.

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them
(17) Quit;
13
Please enter lower job number limit:
1
Please enter higher job number limit:
10
Connecting to the database...
Dispatching the query...
Done. 3 rows deleted from Cut_Job.

```

The screenshot shows a SQL Server Management Studio interface. At the top, there are two tabs: 'Donner\_Catherine\_IP\_Task4.sql - disconnected' and 'SQLQuery\_1 - donn00...nn0031)'. Below the tabs are buttons for 'Run', 'Cancel', 'Disconnect', 'Change', and dropdowns for 'Database: cs-dsa-4513-sql-db' and 'Estimated Plan / Enable Actual'. The main area contains a numbered query:

```

1   SELECT * FROM Cut_Job;
2

```

#### Results    Messages

	Job_No	Machine_Type	Machine_Time_Used	Material_Used	Labor_Time
1	17	chopper	30	sheet metal	150
2	18	shears	70	sheet metal	100
3	25	shears	25	sheet metal	80

6.14 Screenshots showing the testing of Query 14

Donner\_Catherine\_IP\_Task4.sql - disconnected      SQLQuery\_1 - donn00...nn0031 ●

Run Cancel Disconnect Change Database: cs-dsa-4513-sql-db ▾ Estimated Pl

```
1  SELECT * FROM Paint_Job;
2
```

### Results    Messages

	Job_No	Color	Volume	Labor_Time
1	1	red	125	100
2	4	blue	300	200
3	7	green	80	80
4	10	black	130	130
5	11	yellow	140	210

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM  
(1) Enter a new customer;  
(2) Enter a new department;  
(3) Enter a new process;  
(4) Enter a new assembly;  
(5) Create a new account;  
(6) Enter a new job;  
(7) Enter a completed job;  
(8) Enter a new transaction;  
(9) Retrieve the total cost from an assembly;  
(10) Retrieve the total labor time within a department for jobs completed;  
(11) Retrieve the processes and departments responsible for processes;  
(12) Retrieve the customers whose category is in a given range;  
(13) Delete all cut-jobs with job-no in a given range;  
(14) Change the color of a paint job;  
(15) Import: Enter new customers from a data file until the file is empty;  
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them to a file;  
(17) Quit;

14  
Please enter job number:  
1  
Please enter the color paint that you want to change to for this job:  
green  
Connecting to the database...  
Dispatching the query...  
Done. 1 rows updated in Paint\_Job.

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them
(17) Quit;
14
Please enter job number:
4
Please enter the color paint that you want to change to for this job:
white
Connecting to the database...
Dispatching the query...
Done. 1 rows updated in Paint_Job.

```

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them
(17) Quit;
14
Please enter job number:
11
Please enter the color paint that you want to change to for this job:
pink
Connecting to the database...
Dispatching the query...
Done. 1 rows updated in Paint_Job.

```

Donner\_Catherine\_IP\_Task4.sql - disconnected      SQLQuery\_1 - donn00...nn0031) ●

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

```
1  SELECT * FROM Paint_Job;
2
```

**Results** **Messages**

	Job_No	Color	Volume	Labor_Time
1	1	green	125	100
2	4	white	300	200
3	7	green	80	80
4	10	black	130	130
5	11	pink	140	210

### 6.15 Screenshots showing the testing of import and export options

sk4.sql - disconnected ●      Donner\_Catherine\_IP\_Task5a.sql - disconnected ●      SQLQuery\_1 - donn00...nn0031) ●

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

```
1  SELECT * FROM Customer;
```

---

**Results** **Messages**

	Name	Address	Category
1	Charles	500 South Street	3
2	Frank	501 North Sea	6
3	Howard	500 Progress Avenue	7
4	Quentin	300 Hollywood Boulevard	10
5	Ty	720 West Drive	8

```
WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them to a file;
(17) Quit;

15
Please enter a filename to import customer data from:
customers.txt
Read line Mark,501 North Jumpstreet,4 into database
Dispatching the query...
Done. 1 rows inserted into Customer.
Read line Thomas,345 East Street,10 into database
Dispatching the query...
Done. 1 rows inserted into Customer.
Read line Ryan,9000 N. Wadsack,2 into database
Dispatching the query...
Done. 1 rows inserted into Customer.
Read line Chris,100 N. 80th St.,1 into database
Dispatching the query...
Done. 1 rows inserted into Customer.
Read line Allen,20th St.,8 into database
Dispatching the query...
Done. 1 rows inserted into Customer.
Read line Evan,70th St.,7 into database
Dispatching the query...
Done. 1 rows inserted into Customer.
Read line Dean,207 Young Driveway,9 into database
Dispatching the query...
Done. 1 rows inserted into Customer.
Read line David,4600 Five Place,3 into database
Dispatching the query...
Done. 1 rows inserted into Customer.
Read line Noah,805 E. South St.,6 into database
Dispatching the query...
Done. 1 rows inserted into Customer.
Read line Reacher,206 West Driveway,4 into database
Dispatching the query...
Done. 1 rows inserted into Customer.
```

sk4.sql - disconnected • Donner\_Catherine\_IP\_Task5a.sql - disconnected SC

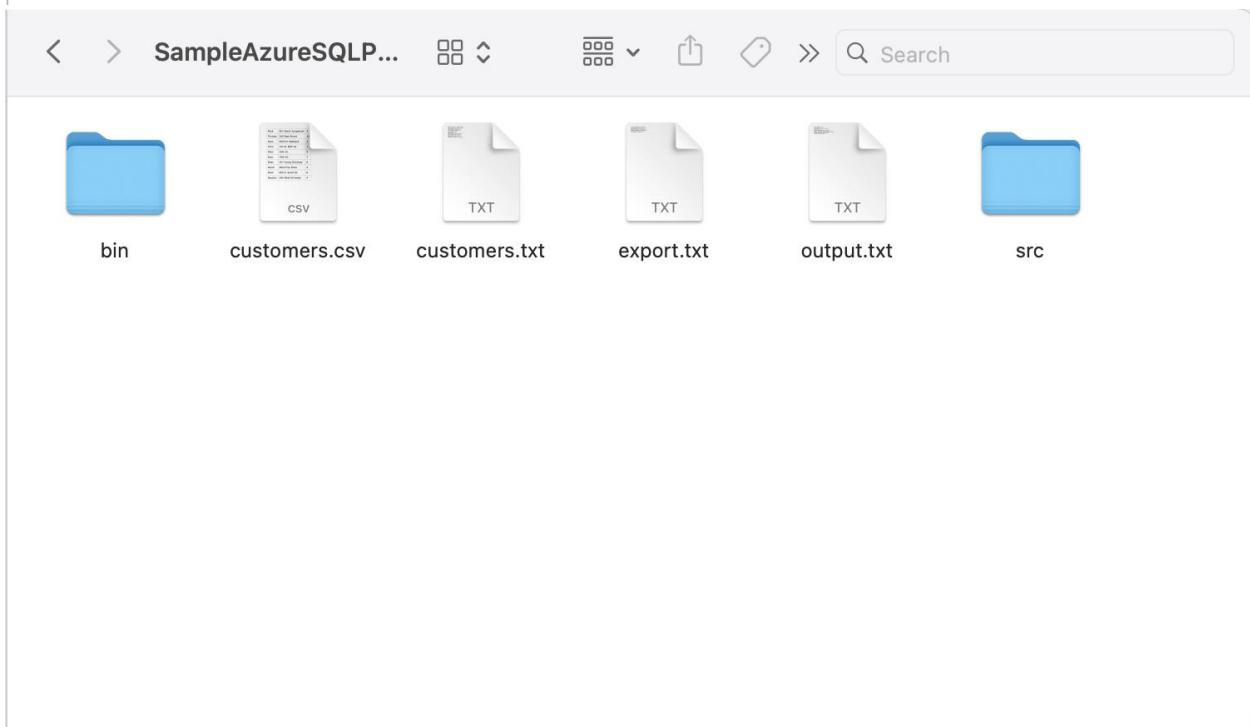
Run Cancel Disconnect Change Database: cs-dsa-4513-sql-db Estin

```
1  SELECT * FROM Customer;
```

### Results Messages

	Name	Address	Category
1	Allen	20th St.	8
2	Charles	500 South Street	3
3	Chris	100 N. 80th St.	1
4	David	4600 Five Place	3
5	Dean	207 Young Driveway	9
6	Evan	70th St.	7
7	Frank	501 North Sea	6
8	Howard	500 Progress Avenue	7
9	Mark	501 North Jumpstreet	4
10	Noah	805 E. South St.	6
11	Quentin	300 Hollywood Boulevard	10
12	Reacher	206 West Driveway	4
13	Ryan	9000 N. Wadsack	2
14	Thomas	345 East Street	10
15	Ty	720 West Drive	8

```
WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them to a file;
(17) Quit;
16
Please enter a filename to export customer data to:
export.txt
Please enter lower category limit:
2
Please enter higher category limit:
5
Connecting to the database...
Dispatching the query...
Data written out to export.txt
```

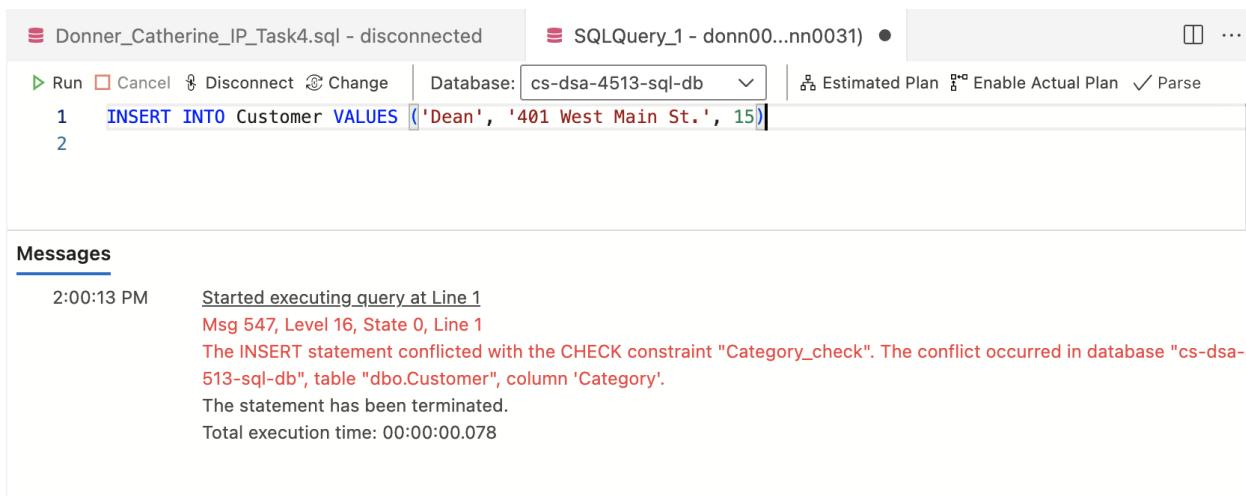




Charles,500 South Street,3  
 David,4600 Five Place,3  
 Mark,501 North Jumpstreet,4  
 Reacher,206 West Driveway,4  
 Ryan,9000 N. Wadsack,2

## 6.16 Screenshots showing the testing of three types of errors

### Error 1: Category Check Constraint Violation



Donner\_Catherine\_IP\_Task4.sql - disconnected    SQLQuery\_1 - donn00...nn0031) ●

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

```
1  INSERT INTO Customer VALUES ('Dean', '401 West Main St.', 15)
2
```

**Messages**

2:00:13 PM    Started executing query at Line 1  
 Msg 547, Level 16, State 0, Line 1  
 The INSERT statement conflicted with the CHECK constraint "Category\_check". The conflict occurred in database "cs-dsa-4513-sql-db", table "dbo.Customer", column 'Category'.  
 The statement has been terminated.  
 Total execution time: 00:00:00.078

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them to a file;
(17) Quit;

1
Please enter customer name (varchar):
Thomas
Please enter customer address (varchar):
608 North West Street
Please enter customer category (1-10):
21
Connecting to the database...
Dispatching the query...
Exception in thread "main" com.microsoft.sqlserver.jdbc.SQLServerException: The INSERT statement conflicted with a FOREIGN KEY constraint. The conflict occurred on column 'CustomerID'. The statement has been terminated.
        at com.microsoft.sqlserver.jdbc@11.2.0.jre17/com.microsoft.sqlserver.jdbc.SQLServerException.mak
        at com.microsoft.sqlserver.jdbc@11.2.0.jre17/com.microsoft.sqlserver.jdbc.SQLServerStatement.get
        at com.microsoft.sqlserver.jdbc@11.2.0.jre17/com.microsoft.sqlserver.jdbc.SQLServerPreparedStatement
        at com.microsoft.sqlserver.jdbc@11.2.0.jre17/com.microsoft.sqlserver.jdbc.SQLServerPreparedStatement.get
        at com.microsoft.sqlserver.jdbc@11.2.0.jre17/com.microsoft.sqlserver.jdbc.TDSCommand.execute(TIOB
        at com.microsoft.sqlserver.jdbc@11.2.0.jre17/com.microsoft.sqlserver.jdbc.SQLServerConnection.ex
        at com.microsoft.sqlserver.jdbc@11.2.0.jre17/com.microsoft.sqlserver.jdbc.SQLServerStatement.exe
        at com.microsoft.sqlserver.jdbc@11.2.0.jre17/com.microsoft.sqlserver.jdbc.SQLServerStatement.exe
        at com.microsoft.sqlserver.jdbc@11.2.0.jre17/com.microsoft.sqlserver.jdbc.SQLServerPreparedStatement
        at Donner_Catherine_IP_Task5b.main(Donner_Catherine_IP_Task5b.java:117)

```

## Error 2: Primary Key Constraint Violation

The screenshot shows the SQL Server Management Studio interface. There are two tabs open: 'Donner\_Catherine\_IP\_Task4.sql - disconnected' and 'SQLQuery\_1 - donn00...nn0031'. The 'SQLQuery\_1' tab contains the following SQL code:

```

1  INSERT INTO Customer VALUES ('Charles', '401 South Street', 8)
2

```

The status bar at the bottom indicates the execution results, showing 'Msg 2627, Level 14, State 1, Line 1' followed by the error message: 'Violation of PRIMARY KEY constraint 'PK\_\_Customer\_\_737584F77502044C'. Cannot insert duplicate key in object 'dbo.Customer'. The duplicate key value is (Charles).'

### Messages

2:03:02 PM	Started executing query at Line 1 Msg 2627, Level 14, State 1, Line 1 Violation of PRIMARY KEY constraint 'PK__Customer__737584F77502044C'. Cannot insert duplicate key in object 'dbo.Customer'. The duplicate key value is (Charles). The statement has been terminated. Total execution time: 00:00:00.087
------------	---

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them to a file;
(17) Quit;

1
Please enter customer name (varchar):
Howard
Please enter customer address (varchar):
701 South North Avenue
Please enter customer category (1-10):
7
Connecting to the database...
Dispatching the query...
Exception in thread "main" com.microsoft.sqlserver.jdbc.SQLServerException: Violation of PRIMARY KEY constraint 'PK_Customer' at line 1
        at com.microsoft.sqlserver.jdbc@11.2.0.jre17/com.microsoft.sqlserver.jdbc.SQLServerException.makeException(Unknown Source)
        at com.microsoft.sqlserver.jdbc@11.2.0.jre17/com.microsoft.sqlserver.jdbc.SQLServerStatement.getResultSet(Unknown Source)
        at com.microsoft.sqlserver.jdbc@11.2.0.jre17/com.microsoft.sqlserver.jdbc.SQLServerPreparedStatement.executeQuery(Unknown Source)
        at com.microsoft.sqlserver.jdbc@11.2.0.jre17/com.microsoft.sqlserver.jdbc.SQLServerPreparedStatement.executeUpdate(Unknown Source)
        at com.microsoft.sqlserver.jdbc@11.2.0.jre17/com.microsoft.sqlserver.jdbc.TDSCommand.execute(TDSCommand.java:100)
        at com.microsoft.sqlserver.jdbc@11.2.0.jre17/com.microsoft.sqlserver.jdbc.SQLServerConnection.execute(SQLServerConnection.java:100)
        at com.microsoft.sqlserver.jdbc@11.2.0.jre17/com.microsoft.sqlserver.jdbc.SQLServerStatement.executeUpdate(SQLServerStatement.java:100)
        at com.microsoft.sqlserver.jdbc@11.2.0.jre17/com.microsoft.sqlserver.jdbc.SQLServerStatement.execute(SQLServerStatement.java:100)
        at com.microsoft.sqlserver.jdbc@11.2.0.jre17/com.microsoft.sqlserver.jdbc.SQLServerPreparedStatement.executeUpdate(SQLServerPreparedStatement.java:100)
        at Donner_Catherine_IP_Task5b.main(Donner_Catherine_IP_Task5b.java:117)

```

### Error 3: Datatype Mismatch Error

The screenshot shows an SSMS window with two panes. The left pane is titled 'Donner\_Catherine\_IP\_Task4.sql - disconnected' and contains the following SQL code:

```

1   INSERT INTO Department VALUES ('hhg', 'legal')
2

```

The right pane is titled 'SQLQuery\_1 - donn00...nn0031' and shows the execution results. The status bar at the bottom indicates the execution time: 'Total execution time: 00:00:00.058'.

### Messages

2:04:24 PM	Started executing query at Line 1
	Msg 245, Level 16, State 1, Line 1
	Conversion failed when converting the varchar value 'hhg' to data type int.
	Total execution time: 00:00:00.058

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them to a file;
(17) Quit;
2
Please enter department number:
just
Exception in thread "main" java.util.InputMismatchException
    at java.base/java.util.Scanner.throwFor(Scanner.java:939)
    at java.base/java.util.Scanner.next(Scanner.java:1594)
    at java.base/java.util.Scanner.nextInt(Scanner.java:2258)
    at java.base/java.util.Scanner.nextInt(Scanner.java:2212)
    at Donner_Catherine_IP_Task5b.main(Donner_Catherine_IP_Task5b.java:124)

```

### 6.17 Screenshots showing the testing of the quit option

```

WELCOME TO THE JOB-SHOP ACCOUNTING DATABASE SYSTEM
(1) Enter a new customer;
(2) Enter a new department;
(3) Enter a new process;
(4) Enter a new assembly;
(5) Create a new account;
(6) Enter a new job;
(7) Enter a completed job;
(8) Enter a new transaction;
(9) Retrieve the total cost from an assembly;
(10) Retrieve the total labor time within a department for jobs completed;
(11) Retrieve the processes and departments responsible for processes;
(12) Retrieve the customers whose category is in a given range;
(13) Delete all cut-jobs with job-no in a given range;
(14) Change the color of a paint job;
(15) Import: Enter new customers from a data file until the file is empty;
(16) Export: Retrieve the customers (in name order) whose category is in a given range and output them to a file;
(17) Quit;
17
Exited job-shop accounting system.

```