

## 423 Final Project

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Github Link: <https://github.com/DylanZol/CSC423-Final-Project>

### Code Overview

- Database setup
  - Import sqlite3 library so interaction with DB is possible
  - Connection made to supermaids.db
    - If not there creates it
- Schema creation
  - Resets tables for clean start
  - Makes tables (clients, employees, equipment, requirements, requires\_equipment, assigned\_to)
  - PK, FK, etc all info from part 2 implemented
  - Domain constraints
    - Salary >0
    - Cost  $\geq 0$
    - Valid equipment status values
    - Valid priority values
    - Valid role values
    - Occasions needed  $\leq$  total occasions
- Sample data
  - 5 tuples
    - Clients
      - Client number, name, addr, phone, preferences, feedback

- Employees
  - Staff number, name, addr, salary, phone
- Equipment
  - Description, usage, cost, status
- Requirements
  - Each references valid clientNo
  - Start date, time, duration, comments, priority
- Requires equipment
  - Many to many relationship for employees and requirements
- Assigned to
  - Many to many relationship for employees and requirements
- Table display
  - Created simple helper function for nice printing
- 5 transactions (queries)
  - Register new client
  - Create and schedule a requirement
  - Specify equipment needed
  - Assign staff to a requirement
  - Use feedback to influence future assignments
- Close database connection

```

==== Clients ====
clientNo | firstName | lastName | address | phoneNumber | preferences | feedback
-----
C001 | Alice | Campos | 123 Main St | 305-111-1111 | eco-friendly products | Great service so far
C002 | Brian | Lopez | 45 Sunset Ave | 305-222-2222 | evening only | NULL
C003 | Carla | Nguyen | 78 Ocean Dr | 305-333-3333 | NULL | Unhappy with last cleaner
C004 | David | Singh | 90 Pine Rd | 305-444-4444 | pet safe | Loves team leader Emma
C005 | Ella | Martin | 12 Elm St | 305-555-5555 | low noise equipment | NULL

==== Employees ===
staffNo | firstName | lastName | address | salary | phoneNumber
-----
S001 | Emma | Reyes | 1 Oak St | 22.5 | 786-111-1111
S002 | Jared | Kim | 2 Oak St | 18.0 | 786-222-2222
S003 | Natalie | Stone | 3 Oak St | 19.75 | 786-333-3333
S004 | Omar | Diaz | 4 Oak St | 21.0 | 786-444-4444
S005 | Priya | Patel | 5 Oak St | 17.25 | 786-555-5555

==== Equipment ===
equipmentID | description | usage | cost | status
-----
E001 | Industrial floor cleaner | floors | 1500.0 | available
E002 | Steam cleaner | bathrooms | 900.0 | available
E003 | Vacuum | carpets | 400.0 | in_use
E004 | Mop set | general | 120.0 | available
E005 | Eco-friendly sprayer | surfaces | 250.0 | maintenance

==== Requirements ===
requirementID | clientNo | startDate | startTime | duration | comments | priority
-----
R001 | C001 | 2025-01-05 | 09:00 | 180 | Weekly full clean | high
R002 | C002 | 2025-01-05 | 18:00 | 120 | Evening office clean | medium
R003 | C003 | 2025-01-06 | 10:00 | 90 | Kitchen and bathrooms | high
R004 | C004 | 2025-01-06 | 13:00 | 120 | Pet-friendly deep clean | high
R005 | C005 | 2025-01-07 | 08:30 | 60 | Quick morning tidy | low

==== Requires_Equipment ===
requirementID | equipmentID | quantityNeeded | occasionsNeeded | totalOccurrences
-----
R001 | E001 | 2 | 4 | 4
R001 | E004 | 4 | 4 | 4
R002 | E003 | 3 | 2 | 2
R003 | E002 | 1 | 1 | 1
R004 | E005 | 1 | 1 | 1

==== Assigned To ====
staffNo | requirementID | role
-----
S001 | R001 | team_leader
S002 | R001 | cleaner
S003 | R002 | team_leader
S004 | R003 | team_leader
S005 | R004 | trainee

```

[Toggle Gemini](#)

## Database created

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...
Requirements for client C001
('R001', '2025-01-05', '09:00', 180, 'high', 'Weekly full clean')

Schedule for 2025-01-05
('R001', 'C001', 'Alice Campos', '09:00', 180, 'high')
('R002', 'C002', 'Brian Lopez', '18:00', 120, 'medium')

Equipment for requirement R001
('E001', 'Industrial floor cleaner', 2, 4, 4, 'available')
('E004', 'Mop set', 4, 4, 4, 'available')

Staff assigned to requirement R001
('S001', 'Emma Reyes', 'team_leader')
('S002', 'Jared Kim', 'cleaner')

Employees who have worked for client C003
('S004', 'Omar Diaz')

```

## 5 transactions