

# PostgreSQL Cheat Sheet

## Queries

```
SELECT name, price FROM Parts
  WHERE id=123 OR quantity>0
  ORDER BY name DESC;

-- Average price for each vendor:
SELECT vendor_id, avg(price) from Parts
  GROUP BY vendor_id;

-- Average price for certain vendors:
SELECT vendor_id, avg(price) from Parts
  WHERE vendor_id IN (1, 2)
  GROUP BY vendor_id;

SELECT max(price), min(price) FROM Parts;
SELECT COUNT(*) FROM Parts;
SELECT * FROM Parts WHERE name LIKE 'Grey%';
```

## Joins

```
SELECT parts.name, parts.price, vendor.name
as VendorName
  FROM parts, vendors
  WHERE parts.vendor_id = vendors.id
  ORDER BY VendorName, parts.name;
```

## psql

```
psql -h hostname -U username db-name

\d -- list tables, views, seqs
\c other-db -- connect to another db

-- Send query results to a file:
\copy (SELECT 2+2) TO '/tmp/outfile'

-- Read commands from a file:
\i /path/to/file.sql

\? -- list all commands
```

## Transactions

```
BEGIN TRANSACTION;
-- do stuff
COMMIT;
-- or --
ROLLBACK;
```

## JSON

```
SELECT id, name, attributes->'frob'
  FROM parts
  WHERE attributes @> '{"usefulness" :
    "high"}';
```

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## Tables

```
CREATE TABLE Vendors (  
  id SERIAL PRIMARY KEY,  
  name TEXT UNIQUE NOT NULL);
```

```
CREATE TABLE Parts (  
  id SERIAL PRIMARY KEY,  
  name TEXT UNIQUE NOT NULL,  
  quantity INTEGER,  
  price NUMERIC,  
  attributes JSONB,  
  vendor_id INTEGER NOT NULL REFERENCES  
  vendors(id),  
  createdAt TIMESTAMP WITH TIME ZONE NOT NULL  
  DEFAULT now());
```

```
ALTER TABLE Parts ADD COLUMN description TEXT;  
ALTER TABLE Parts RENAME COLUMN description TO  
descr;  
ALTER TABLE Parts DROP COLUMN descr;
```

```
ALTER TABLE Parts ALTER COLUMN quantity SET NOT  
NULL;
```

```
ALTER TABLE Parts RENAME TO PartsTable;
```

```
DROP TABLE Parts;
```

## Common Data Types

**INTEGER**, **BIGINT** - signed 4/8 byte integers  
**SERIAL**, **BIGSERIAL** - auto-incrementing integers  
**UUID** - universally unique identifier

**REAL**, **DOUBLE** - floating point number  
**NUMERIC** - fixed point number - for money

**DATE** - month, day, year  
**TIME** - time of day  
**INTERVAL** - timespan  
**TIMESTAMP WITH TIME ZONE** - time + date

**TEXT** - variable length string  
**VARCHAR(x)** - variable length up to x  
**CHARACTER(x)** - fixed x-length string  
**JSONB** - compressed JSON data

## Insert, Update, Delete

```
INSERT INTO Vendors (Name) VALUES ('A Vendor');  
INSERT INTO Vendors (Name) VALUES ('Other  
Vendor');
```

```
INSERT INTO Parts (name, quantity, price,  
attributes,vendor_id) VALUES ('Grey Widget', 12,  
1.23, '{"frob":12,"usefulness":"high"}', (SELECT ID  
FROM vendors WHERE name='A Vendor'));
```

```
UPDATE Vendors SET name='A Vendor, Inc.'  
WHERE NAME='A Vendor';
```

```
DELETE FROM Parts WHERE name='Grey Widget';
```