Formação Engenheiro de Dados

SQL Parte I

SQL

◇ **Structured Query Language**, ou **Linguagem de Consulta Estruturada**

SQL

- ◇ **DQL - Linguagem de Consulta de Dados**
- ◇ (SELECT)
- ◇ **DML - Linguagem de Manipulação de Dados**
- ◇ (INSERT, UPDATE, DELETE)
- ◇ **DDL - Linguagem de Definição de Dados**
- ◇ (CREATE TABLE, INDEX, VIEW)
- ◇ (ALTER TABLE, INDEX, VIEW)
- ◇ **DCL - Linguagem de Controle de Dados**
- ◇ GRANT, REVOKE
- ◇ DTL – Linguagem de Transação de Dados
- ◇ (BEGIN TRANSACTION, COMMIT, ROLLBACK)

DQL

- SELECT DISTINCT FROM WHERE GROUP BY ORDER BY

- OPERADORES
  - AND, OR, NOT
  - < , >, <=, >=, <>
  - BETWEEN, LIKE, IN
- AGREGAÇÃO
  - COUNT, SUM, AVG, MAX, MIN

```
ed=# select * from relacional.clientes;
 idcliente |         cliente         | estado | sexo | status
-----------+-------------------------+--------+------+----------
         1 | Adelina Buenaventura    | RJ     | M    | Silver
         2 | Adelino Gago            | RJ     | M    | Silver
         3 | Adélio Lisboa           | SE     | M    | Silver
         4 | Adérito Bahía           | MA     | M    | Silver
         5 | Adolfo Patrício         | PE     | M    | Silver
         6 | Adriana Guedelha        | RO     | F    | Platinum
         7 | Aida Dorneles           | RN     | F    | Silver
         8 | Alarico Quinterno       | AC     | M    | Silver
         9 | Alberto Cezimbra        | AM     | M    | Silver
        10 | Alberto Monsanto        | RN     | M    | Gold
        11 | Albino Canela           | AC     | M    | Silver
        12 | Alceste Varanda         | RR     | F    | Silver
        13 | Alcides Carvalhais      | RO     | M    | Silver
        14 | Aldo Martins            | GO     | M    | Silver
        15 | Alexandra Tabares       | MG     | F    | Silver
        16 | Alfredo Cotrim          | SC     | M    | Silver
        17 | Almeno Figueira         | SC     | M    | Silver
        18 | Alvito Peralta          | AM     | M    | Silver
        19 | Amadeu Martinho         | RN     | M    | Silver
        20 | Amélia Estévez          | PE     | F    | Silver
        21 | Ana Homem               | RN     | F    | Silver
        22 | Ana Peseiro             | PA     | F    | Silver
        23 | Anacleto Garrau         | TO     | M    | Silver
        24 | Anacleto Guterres       | PI     | M    | Silver
```

DQL

```
ed=# select clientes, sexo, status from relacional.clientes
ed-# where status = 'Silver';
                  clientes                   | sexo | status
---------------------------------------------+------+--------
 (1,"Adelina Buenaventura",RJ,M,Silver)      | M    | Silver
 (2,"Adelino Gago",RJ,M,Silver)              | M    | Silver
 (3,"Adélio Lisboa",SE,M,Silver)             | M    | Silver
 (4,"Adérito Bahía",MA,M,Silver)             | M    | Silver
 (5,"Adolfo Patrício",PE,M,Silver)           | M    | Silver
 (7,"Aida Dorneles",RN,F,Silver)             | F    | Silver
 (8,"Alarico Quinterno",AC,M,Silver)         | M    | Silver
 (9,"Alberto Cezimbra",AM,M,Silver)          | M    | Silver
 (11,"Albino Canela",AC,M,Silver)            | M    | Silver
 (12,"Alceste Varanda",RR,F,Silver)          | F    | Silver
 (13,"Alcides Carvalhais",RO,M,Silver)       | M    | Silver
 (14,"Aldo Martins",GO,M,Silver)             | M    | Silver
 (15,"Alexandra Tabares",MG,F,Silver)        | F    | Silver
 (16,"Alfredo Cotrim",SC,M,Silver)           | M    | Silver
 (17,"Almeno Figueira",SC,M,Silver)          | M    | Silver
 (18,"Alvito Peralta",AM,M,Silver)           | M    | Silver
 (19,"Amadeu Martinho",RN,M,Silver)          | M    | Silver
 (20,"Amélia Estévez",PE,F,Silver)           | F    | Silver
 (21,"Ana Homem",RN,F,Silver)                | F    | Silver
 (22,"Ana Peseiro",PA,F,Silver)              | F    | Silver
```

```
ed=# select clientes, sexo, status from relacional.clientes
ed-# where status = 'Silver' OR status = 'Platinum';
                  clientes                   | sexo | status
---------------------------------------------+------+----------
 (1,"Adelina Buenaventura",RJ,M,Silver)      | M    | Silver
 (2,"Adelino Gago",RJ,M,Silver)              | M    | Silver
 (3,"Adélio Lisboa",SE,M,Silver)             | M    | Silver
 (4,"Adérito Bahía",MA,M,Silver)             | M    | Silver
 (5,"Adolfo Patrício",PE,M,Silver)           | M    | Silver
 (6,"Adriana Guedelha",RO,F,Platinum)        | F    | Platinum
 (7,"Aida Dorneles",RN,F,Silver)             | F    | Silver
 (8,"Alarico Quinterno",AC,M,Silver)         | M    | Silver
 (9,"Alberto Cezimbra",AM,M,Silver)          | M    | Silver
 (11,"Albino Canela",AC,M,Silver)            | M    | Silver
 (12,"Alceste Varanda",RR,F,Silver)          | F    | Silver
 (13,"Alcides Carvalhais",RO,M,Silver)       | M    | Silver
 (14,"Aldo Martins",GO,M,Silver)             | M    | Silver
 (15,"Alexandra Tabares",MG,F,Silver)        | F    | Silver
 (16,"Alfredo Cotrim",SC,M,Silver)           | M    | Silver
 (17,"Almeno Figueira",SC,M,Silver)          | M    | Silver
 (18,"Alvito Peralta",AM,M,Silver)           | M    | Silver
 (19,"Amadeu Martinho",RN,M,Silver)          | M    | Silver
 (20,"Amélia Estévez",PE,F,Silver)           | F    | Silver
 (21,"Ana Homem",RN,F,Silver)                | F    | Silver
```

DQL

```
ed=# select clientes, sexo, status from relacional.clientes
ed-# where status IN('Silver','Platinum');
                  clientes                  | sexo |  status
--------------------------------------------+------+----------
 (1,"Adelina Buenaventura",RJ,M,Silver)     | M    | Silver
 (2,"Adelino Gago",RJ,M,Silver)             | M    | Silver
 (3,"Adélio Lisboa",SE,M,Silver)            | M    | Silver
 (4,"Adérito Bahía",MA,M,Silver)            | M    | Silver
 (5,"Adolfo Patrício",PE,M,Silver)          | M    | Silver
 (6,"Adriana Guedelha",RO,F,Platinum)       | F    | Platinum
 (7,"Aida Dorneles",RN,F,Silver)            | F    | Silver
 (8,"Alarico Quinterno",AC,M,Silver)        | M    | Silver
 (9,"Alberto Cezimbra",AM,M,Silver)         | M    | Silver
 (11,"Albino Canela",AC,M,Silver)           | M    | Silver
 (12,"Alceste Varanda",RR,F,Silver)         | F    | Silver
 (13,"Alcides Carvalhais",RO,M,Silver)      | M    | Silver
 (14,"Aldo Martins",GO,M,Silver)            | M    | Silver
 (15,"Alexandra Tabares",MG,F,Silver)       | F    | Silver
 (16,"Alfredo Cotrim",SC,M,Silver)          | M    | Silver
 (17,"Almeno Figueira",SC,M,Silver)         | M    | Silver
 (18,"Alvito Peralta",AM,M,Silver)          | M    | Silver
 (19,"Amadeu Martinho",RN,M,Silver)         | M    | Silver
 (20,"Amélia Estévez",PE,F,Silver)          | F    | Silver
 (21,"Ana Homem",RN,F,Silver)               | F    | Silver
 (22,"Ana Peseiro",PA,F,Silver)             | F    | Silver
 (23,"Anacleto Garrau",TO,M,Silver)         | M    | Silver
 (24,"Anacleto Guterres",PI,M,Silver)       | M    | Silver
 (25,"Andreia Carvalhal",SP,F,Silver)       | F    | Silver
```

```
ed=# select clientes, sexo, status from relacional.clientes
ed-# where status NOT IN('Silver','Platinum');
              clientes              | sexo | status
------------------------------------+------+--------
 (10,"Alberto Monsanto",RN,M,Gold)     | M    | Gold
 (29,"Anna Carvajal",RS,F,Gold)        | F    | Gold
 (50,"Bento Quintão",SP,M,Gold)        | M    | Gold
 (71,"Carminda Dias",AM,F,Gold)        | F    | Gold
 (88,"Cláudio Jorge",TO,M,Gold)        | M    | Gold
 (123,"Dionísio Saltão",PR,M,Gold)     | M    | Gold
 (166,"Firmino Meireles",AM,M,Gold)    | M    | Gold
 (222,"Honorina Villaverde",PE,F,Gold) | F    | Gold
 (237,"Iracema Rodríguez",BA,F,Gold)   | F    | Gold
(9 rows)
```

DQL

```
ed=# select clientes, sexo, status from relacional.clientes
ed-# where cliente like '%Alb%';
                 clientes                 | sexo | status
------------------------------------------+------+--------
 (9,"Alberto Cezimbra",AM,M,Silver)       | M    | Silver
 (10,"Alberto Monsanto",RN,M,Gold)        | M    | Gold
 (11,"Albino Canela",AC,M,Silver)         | M    | Silver
 (246,"Jandaíra Albuquerque",SP,F,Silver) | F    | Silver
(4 rows)
```

DQL

```
ed=# select * from relacional.vendas
where total > 6000;
 idvenda | idvendedor | idcliente |    data    |  total
---------+------------+-----------+------------+----------
       1 |          1 |         1 | 01-01-2016 |  8053.60
       3 |          7 |        31 | 02-01-2016 |  6087.00
       4 |          5 |         1 | 02-01-2016 | 13828.60
       5 |          8 |       120 | 03-01-2016 | 26096.66
       6 |          9 |        74 | 04-01-2016 | 18402.00
       7 |          9 |       191 | 06-01-2016 |  7524.20
       8 |          6 |         2 | 06-01-2016 | 12036.60
      10 |          2 |       202 | 06-01-2016 |  8852.00
      11 |          1 |         3 | 08-01-2016 | 16545.25
      12 |          7 |        32 | 09-01-2016 | 11411.88
      13 |          4 |       136 | 10-01-2016 | 15829.70
      14 |          3 |       249 | 12-01-2016 |  6154.36
      17 |          2 |        79 | 13-01-2016 | 15829.70
      18 |         10 |       136 | 14-01-2016 | 16996.36
      22 |          2 |        74 | 17-01-2016 |  7652.04
      25 |          2 |        58 | 19-01-2016 | 11290.19
      26 |          2 |        74 | 21-01-2016 |  8979.84
      30 |          4 |       218 | 23-01-2016 |  7128.70
```

```
ed=# select * from relacional.vendas
ed-# where total between 6000 and 8000;
 idvenda | idvendedor | idcliente |    data    |  total
---------+------------+-----------+------------+---------
       3 |          7 |        31 | 02-01-2016 | 6087.00
       7 |          9 |       191 | 06-01-2016 | 7524.20
      14 |          3 |       249 | 12-01-2016 | 6154.36
      22 |          2 |        74 | 17-01-2016 | 7652.04
      30 |          4 |       218 | 23-01-2016 | 7128.70
      37 |          7 |       192 | 27-01-2016 | 6510.16
      44 |          2 |       185 | 02-02-2016 | 7524.20
      46 |          8 |        58 | 03-02-2016 | 7296.08
      54 |          1 |       185 | 11-02-2016 | 7753.70
      60 |          4 |       136 | 14-02-2016 | 7901.00
      63 |         10 |       191 | 20-02-2016 | 7820.85
      67 |          4 |       191 | 22-02-2016 | 6678.50
      73 |          3 |        89 | 27-02-2016 | 7038.77
      80 |          6 |        54 | 04-03-2016 | 7233.50
      83 |          8 |        54 | 09-03-2016 | 7196.40
      90 |          4 |       115 | 15-03-2016 | 7205.75
      93 |          9 |       186 | 17-03-2016 | 7038.77
```

DQL

```
ed=# select count(*) from relacional.vendas;
 count
-------
   400
(1 row)
```

```
ed=# select count(*) from relacional.vendas
where total > 6000;
 count
-------
   214
(1 row)
```

DQL

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```
ed=# select distinct status from relacional.clientes;
  status
----------
 Silver
 Gold
 Platinum
(3 rows)
```

```
ed=# select idvendedor, count(idvendedor) from relacional.vendas
ed-# group by idvendedor;
 idvendedor | count
------------+-------
          8 |    30
         10 |    46
          9 |    43
          7 |    38
          1 |    38
          5 |    39
          4 |    37
          2 |    50
          6 |    35
          3 |    44
(10 rows)
```

DQL