



```
SELECT [ALL | DISTINCT] column1, column2
FROM table1, table2
[WHERE "conditions"]
[GROUP BY "column-list"]
[HAVING "conditions"]
[ORDER BY "column-list" [ASC | DESC] ]
```

SQL

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SQL

- SEQUEL - Structured English Query Language
- SQL - Structured Query Language
- Neproceduralni jezik (definiše šta, a ne kako)

SQL istorija

- SQL 86 – ANSI standard
- SQL 87 – ISO standard
- SQL 89 - male izmene
- SQL 92 (SQL 2) – veće izmene
- SQL 99 (SQL 3) – ANSI/ISO standard, uključeni OOP principi
- SQL 2003 – uključen XML

Tipovi podataka

- Stringovi
- Celi brojevi
- Realni brojevi
- Datum i vreme
- Objekti i korisnički definisani tipovi podataka

Delovi SQL jezika

- DCL - Data Control Language
- DDL – Data Definition Language
- DML – Data Manipulation Language
- DQL – Data Query Language
- `SELECT * FROM OSOBE WHERE IME = DRAGAN`
- Query language – jezik upita
- SQL – Structured Query Language je istovremeno DDL i DML za relacione DB
- 1982 IBM
- 1986 ANSI standard za SQL

Opis SQL sintakse

- Za opis SQL sintakse će se koristiti BNF (Backus-Naur Form) notacija.

Simbol	Značenje
< >	ime
	Odvaja alternative
[]	Opcioni izraz
{ }	Zahteva se da se navede bar jedan izraz
,	Izrazi se opciono mogu ponavljati više od jednog puta

DDL iskazi SQL-a

- CREATE TABLE – kreira tabelu
- ALTER TABLE – dodaje nova polja ili ograničenja postojećoj tabeli
- DROP – brise tabelu iz DB ili uklanja indeks iz polja
- CREATE INDEX – kreira indeks za polje ili grupu polja

DDL iskazi - Tabele

- CREATE TABLE <table_name> (
column_name <datatype>
[<column_constraint>,...] [DEFAULT
<default_value>],... [<table_constraint>,...]
[physical_options])
- ALTER TABLE <table_name> {
<vendor_specific_add_column_clause> |
<vendor_specific_alter_column_clause> |
<vendor_specific_add_constraint_clause> |
<vendor_specific_drop_constraint_clause> }

DDL iskazi - Indeksi

- CREATE [UNIQUE] INDEX
<index_name> ON <table_name>
(<column_name> [ASC|DESC],...)
- DROP INDEX <index_name>

DDL iskazi - View

- CREATE VIEW <view_name>
[(column_name,...)] AS
<select_statement> [WITH CHECK
OPTION]
- ALTER VIEW <view_name>
<vendor_specific_alter_view_clause>
- DROP VIEW <view_name>

DDL iskazi - Šeme

- CREATE SCHEMA <schema_name>
AUTHORIZATION <authorization_id>
<create_object_statement>, ...
<grant_privilege_statement>, ...
- DROP SCHEMA <schema_name> RESTRICT
- Oracle nema <schema_name>
- Oracle i MS SQL nemaju DROP SCHEMA iskaz

DDL iskazi – Ugnježdene procedure

- CREATE PROCEDURE
<procedure_name>
[<parameter_section>]
<procedure_definition>
- Stvarna sintaksa se razlikuje za različite DBMS
- DROP PROCEDURE
<procedure_name>

DDL iskazi – korisničke funkcije

- CREATE FUNCTION <function_name>
<function_definition_includes_return_statement>
- Stvarna sintaksa se razlikuje za različite DBMS
- DROP FUNCTION <function_name>

DDL iskazi – Trigeri - Okidači

- CREATE TRIGGER <trigger_name>
[BEFORE | AFTER] {INSERT |
UPDATE | DELETE} ON <table_name>
[FOR EACH ROW] <trigger_body>
- DROP TRIGGER
[qualifier.]<trigger_name>

DCL iskazi

- GRANT {[ALL [PRIVILEGES]] | <privilege,...>} [ON <object_name>] TO <user_group_or_role> [WITH GRANT OPTION]
- REVOKE {[ALL [PRIVILEGES]] | <privilege,...>} ON <object_name> FROM <user_group_or_role>

DML iskazi SQL-a

- UPDATE menja vrednost atributa
- DELETE briše polja
- INSERT ubacuje polja

DML iskazi

- INSERT INTO <table_or_view_name>
[(<column_name>,...)] {{VALUES (<literal> |
<expression> | NULL | DEFAULT,...)} |
{<select_statement>}}
- UPDATE <table_or_view_name> SET
{<column_name> = <literal> | <expression> |
<single_row_select_statement> | NULL |
DEFAULT,...} [WHERE <predicate>]
- DELETE FROM <table_or_view_name>
WHERE <predicate>

DQL Iskazi

selektovanje iz jedne tabele

```
SELECT [ALL | DISTINCT]
  {[<qualifier>.]<column_name> | * |
   <expression>} [AS <column_alias>],...
FROM <table_or_view_name> | <inline_view>
  [<table_alias>]
[WHERE <predicate>]
[GROUP BY [<qualifier>.]<column_name>,...
  [HAVING <predicate>]]
[ORDER BY [<qualifier>.]<column_name> |
  <column_number> [ASC | DESC],...];
```

DQL Iskazi

selektovanje iz više tabela – inner join

```
SELECT [ALL | DISTINCT] {[<qualifier>.]<column_name> |  
* | <expression>} [AS <column_alias>],...  
FROM <table_or_view_name> | <inline_view>  
[<table_alias>] [INNER | NATURAL | CROSS] JOIN  
<table_or_view_name> | <inline_view> [<table_alias>]  
[ON [<qualifier>.]<column_name> <join_condition>  
[<qualifier>.]<column_name>] [[INNER | NATURAL |  
CROSS] JOIN <table_or_view_name> | <inline_view>  
[<table_alias>] [ON [<qualifier>.]<column_name>  
<join_condition> [<qualifier>.]<column_name>],...]  
[WHERE <predicate>]  
[GROUP BY [<qualifier>.]<column_name>,... [HAVING  
<predicate>]]  
[ORDER BY [<qualifier>.]<column_name> |  
<column_number> [ASC | DESC],...];
```

DQL Iskazi

selektovanje iz više tabela – inner join

```
SELECT [ALL | DISTINCT] {[<qualifier>.]<column_name> | * |  
  <expression>} [AS <column_alias>],...  
FROM <table or view name> | <inline_view> [<table_alias>]  
  {[LEFT | RIGHT | FULL [OUTER]} JOIN  
  <table_or_view_name> | <inline_view> [<table_alias>] {ON  
  [<qualifier>.]<column_name> <join_condition>  
  [<qualifier>.]<column_name>} {[LEFT | RIGHT | FULL  
  [OUTER]} JOIN <table_or_view_name> | <inline_view>  
  [<table_alias>] {ON [<qualifier>.]<column_name>  
  <join_condition> [<qualifier>.]<column_name>},...]  
[WHERE <predicate>]  
[GROUP BY [<qualifier>.]<column_name>,... [HAVING  
  <predicate>]]  
[ORDER BY [<qualifier>.]<column_name> |  
  <column_number> [ASC | DESC],...];
```

Transactional Control Statements

- COMMIT [WORK]
- ROLLBACK [WORK]

PRIMER SQL UPITA

- SELECT Osobe.[Maticni broj], Osobe.Ime, Osobe.Prezime, Osobe.Pol
- FROM Osobe
- WHERE (((Osobe.Pol)="muski"));

- SELECT [Osobe].[Ime], [Osobe].[Prezime], [Osobe].[Mesto], [Mesta].[Naziv mesta]
- FROM Mesta INNER JOIN Osobe ON [Mesta].[Postanski broj]=[Osobe].[Mesto];