

Summary of SQL Techniques from Presentations

Aggregation and Grouping

Key Concepts:

- Aggregation functions: COUNT, AVG, SUM, MIN, MAX.
- GROUP BY to group data.
- HAVING to filter groups.

Examples:

```
SELECT type, COUNT(*) AS aantal
FROM rit
GROUP BY type;
```

```
SELECT moeilijkheid, AVG(afstand) AS gemiddelde_afstand
FROM route
GROUP BY moeilijkheid;
```

Date and Time Manipulation

Key Functions:

- NOW() and CURRENT_DATE for current timestamp/date.
- AGE() for differences.
- DATE_PART() to extract date components.

Examples:

```
SELECT naam, AGE(CURRENT_DATE, geboortedatum) AS leeftijd
FROM wielrenner;
```

Window Functions

Key Features:

- Calculations over a "window" of rows.
- Common functions: RANK(), ROW_NUMBER(), AVG() OVER.

Examples:

```
SELECT naam, gewicht, RANK() OVER (ORDER BY gewicht DESC) AS rank
FROM wielrenner;
```

Set Operators

Combine query results: UNION, INTERSECT, EXCEPT.

Examples:

```
SELECT naam FROM wielrenner WHERE landcode = 'BE'
UNION
SELECT naam FROM wielrenner WHERE gewicht < 70;
```

```
SELECT naam FROM wielrenner WHERE landcode = 'BE'
INTERSECT
SELECT naam FROM wielrenner WHERE gewicht < 70;
```

Recursive Queries

Hierarchical relationships:

```
WITH RECURSIVE team_hierarchy AS (
    SELECT naam, teamnaam
    FROM wielrenner
    WHERE naam = 'Renner1'
    UNION
    SELECT w.naam, w.teamnaam
    FROM wielrenner w
    INNER JOIN team_hierarchy th ON w.teamnaam = th.naam
)
SELECT * FROM team_hierarchy;
```
