

Departamento de Engenharia Informática

## Sistemas de Informação e Bases de Dados

Lab 10: Indices & Optimisation

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### Index Creation

1. Use the **index\_data.sql** script to populate the **account** table with the `\i index_data.sql` command
2. Run the command `"\d account"` to obtain information about the indexes of the **account** table. Notice the existing indexes. By default, the system creates an index for a table's primary key. What kind of index is it?
3. Run the command `"\timing"`
4. Run the following query:

```
SELECT * FROM account WHERE account_number='A-012345';
```

Note the time it takes the system to execute this command

5. Delete the primary key from the table with the command:

```
ALTER TABLE account DROP CONSTRAINT account_pkey;
```

6. Repeat step 4 and take note of the time. How do you explain this result?
7. Create the primary key back on the table with the command:

```
ALTER TABLE account ADD PRIMARY KEY(account_number);
```

Note the time it takes the system to execute this command. How do you explain this result?

8. Repeat step 4 and note the time. How do you explain the possible time difference compared to previous result of point 6?
9. Write two queries: one to obtain the number of accounts with a balance equal to € 1000, and another to obtain the maximum balance.
10. Run the queries and note the time it takes the system to execute this command.

```
SELECT account_number FROM account WHERE balance = 1000;  
SELECT MAX(balance) FROM ACCOUNT;
```