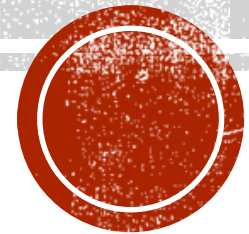


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DATA SCIENCE

NDBI048

Practicals 11. Multi-model databases



<https://www.ksi.mff.cuni.cz/~holubova/NDBI048/>

ACCESS

- Use SSH
 - host: nosql.ms.mff.cuni.cz
 - port: 42222
 - login: ds_<Surname>
 - Or surname+1st letter of First name
 - E.g. ds_Novak or ds_NovakP
 - password: Specified in the lab (or send me an e-mail)
- Please, **do not upload too large data**
 - We have a limited disk space and too many users
 - It is not the aim of the practicals, the principles work also for small data
- Sample data shown during practicals can be found in
 - /home/NDBI040/mapreduce
 - /home/NDBI040/mapreduce2



POSTGRESQL — ON OUR SERVER

```
psql -d <login> -U <login> -h localhost -p 5432 -W
```

- Running a client
 - login: ds_<surname>
- Or, you can use client pgAdmin
 - nosql.ms.mff.cuni.cz:5432

```
SELECT current_database();
```

- Check working with database <login> (should be default)

```
\dt
```

- List tables in the current database



POSTGRESQL — CREATE TABLE, INSERT DATA

```
CREATE TABLE customer (  
    id          INTEGER PRIMARY KEY,  
    name        VARCHAR(50),  
    address     VARCHAR(50),  
    orders      JSONB  
);  
  
INSERT INTO customer  
VALUES (1, 'Mary', 'Prague',  
    '{"Order_no":"0c6df508",  
    "Orderlines": [  
        {"Product_no":"2724f", "Product_Name":"Toy", "Price":66},  
        {"Product_no":"3424g", "Product_Name":"Book", "Price":40}]  
    }');  
  
INSERT INTO customer  
VALUES (2, 'John', 'Helsinki',  
    '{"Order_no":"0c6df511",  
    "Orderlines": [  
        {"Product_no":"2454f", "Product_Name":"Computer", "Price":34 }]  
    }');
```



POSTGRESQL — SIMPLE QUERIES

```
SELECT * FROM customer;
```

```
SELECT json_build_object('id',id,'name',name,'orders',orders) FROM customer;
```

```
SELECT jsonb_each(orders) FROM customer;
```

```
SELECT jsonb_object_keys(orders) FROM customer;
```

```
SELECT name,  
       orders->>'Order_no' as Order_no,  
       orders#>' {Orderlines,1}'->>'Product_Name' as Product_Name  
FROM customer  
where orders->>'Order_no' <> '0c6df511';
```



REFERENCES

- Documentation: <https://www.postgresql.org/docs/current/index.html>
- JSON functions and operators
<https://www.postgresql.org/docs/current/functions-json.html>

