

Overview

Project ideas

1. Creating an initial project repository at <https://gitlab.mi.hdm-stuttgart.de>.

Tip

Include your lecturer into your team providing at least read access.

2. Committing a Readme .md file describing the project's goals.

This includes a precise description of the prototype's desired functionality likely to be extended along with your project's progress.

3. Identify individual tasks like e.g.:

- Creating sample data.
- Setting up test scenarios.
- Selecting a documentation tool set.

4. Assign team members to tasks.

5. Implementation resulting in:

- A deployable piece of software
- Both functional and software internal documentation.

Tip

Don't start this step too late. The »Real programmers don't document, the code is obvious« myth no longer works!

Project ideas

- ↳ Extending UNIX **grep** to databases

UNIX grep sample

```
> grep --color ① -i ② fraction App.java
package de.hdm_stuttgart.mi.sd1.fraction;
 * Playing with fraction objects.
   final Fraction threeSeven =
       new Fraction(3, 7);
   final Fraction
```

Database grep requirements

- Connection profile handling
- Search level specification:
 - Whole database
 - Table(s)
 - Table column(s)
 - Recordsets
- Output formatting, limiting/filtering and paging

Connection profile handling

Command	File ~/.dbgrep/Profiles/postgresTest.cfg
<pre>dbgrep --profile postgresTest ...</pre>	<pre>host=myserver.companynet.com port=5432 database=main_test_data user=testuser password=secret driver=Driver/postgresql-42.6.0.jar</pre>

Search level specification

```
dbgrep ... ①  
dbgrep ... --table User --table Stocks ② ...  
dbgrep ... --column User.userId ③ ...  
dbgrep ... --table Stocks --column User.userId ... ④
```

Property based searches

```
dbgrep ... --equal 237 ①  
dbgrep ... --greater 4.43 ②  
dbgrep ... --like 'Smit%' ③  
dbgrep ... --like 'Smit%' --and --greater 4 ④  
dbgrep ... --range [-3:17] ⑤
```

- ① Search for integer values equal to 237. Depending on the corresponding search level we distinguish:

Database

Search all tables for compatible integer columns. Return either a list of all tables containing at least one occurrence of 237 or the data records themselves depending on an output formatting rule,

②

③

④