Aufgabe 1: MongoDB

```
db.degprg.insertOne({ _id: "prg1", name: "Program 1", semesters: 6, description: "Lorem Ipsum" })
db.degprg.insertOne({ _id: "prg2", name: "Program 2", semesters: 6, description: "Lorem Ipsum" })
db.degprg.find().pretty()
db.students.insertOne({ _id: "mat1", degprg: "prg1", name: "Max Muster", start: "01.01.1970" })
db.students.insertOne({ _id: "mat3", degprg: "prg2", name: "Max Masta", start: "01.01.1970" })
db.degprg.aggregate([{$match: {_id: "prg1"}}, {$lookup: {from:"students", localField: "_id", foreignl
```

Aufgabe 2: Cassandra

```
create keyspace ue07 WITH replication = {'class': 'SimpleStrategy',
↪  'replication_factor' : 3};
use keyspace ue07;
create table students ( mat_nr text, first_name text, last_name text, date text,
↪  prg_id text, primary key(mat_nr));
create table deg_prg ( prg_id text, name text, semesters int, description text,
↪  primary key(prg_id));
create table subject ( subject_id text, deg_prg text, semester int, description text,
↪  ects int, primary key(subject_id));
create table grades ( mat_nr text, subject_id text, grade int, primary key(mat_nr,
↪  subject_id));
insert into deg_prg (prg_id, name, semesters, description) values ('prg1', 'Program
↪  1', 4, 'Lorem Ipsum');
insert into deg_prg (prg_id, name, semesters, description) values ('prg2', 'Program
↪  2', 6, 'Lorem Ipsum');
insert into students (mat_nr, first_name, last_name, date, prg_id) values ('s1111',
↪  'Max', 'Muster', '01.01.1970', 'prg1');
insert into students (mat_nr, first_name, last_name, date, prg_id) values ('s1112',
↪  'Max', 'Mustermann', '01.01.1970', 'prg1');
insert into students (mat_nr, first_name, last_name, date, prg_id) values ('s1113',
↪  'Maxi', 'Mustermann', '01.01.1970', 'prg2');insert into subject (subject_id,
↪  deg_prg, semester, description, ects) values ('sub1', 'prg1', 2, 'Lorem Ipsum
↪  sub1', 3);
insert into subject (subject_id, deg_prg, semester, description, ects) values ('sub2',
↪  'prg1', 2, 'Lorem Ipsum sub2', 2);
insert into subject (subject_id, deg_prg, semester, description, ects) values ('sub3',
↪  'prg2', 1, 'Lorem Ipsum sub3', 5);
insert into grades (mat_nr, subject_id, grade) values ('s1111', 'sub1', 3);
insert into grades (mat_nr, subject_id, grade) values ('s1111', 'sub2', 2);
insert into grades (mat_nr, subject_id, grade) values ('s1112', 'sub1', 4);
insert into grades (mat_nr, subject_id, grade) values ('s1113', 'sub3', 2);
create index on students(prg_id);
```

```
19 select * from students where prg_id = 'prg1';
20 create index on subject(deg_prg);
21 select * from subject where deg_prg = 'prg1';
22 select * from grades where mat_nr = 's1111';
23 select * from subject where subject_id = 'sub1';
```