

```
D(studentIdnr, studentName, login, branchName, programName, courseCode,  
courseName, credits, departmentName, capacity, classification, grade, position)
```

## 2. FD:s

```
studentIdnr -> studentName  
studentIdnr -> login  
studentIdnr -> programName  
studentIdnr -> branchName
```

```
login -> studentIdnr
```

```
courseCode -> courseName  
courseCode -> capacity  
courseCode -> departmentName  
courseCode -> credits
```

```
{studentIdnr, courseCode} -> position
```

```
{courseCode, position} -> studentIdnr
```

```
{studentIdnr, courseCode} -> grade
```

## 3. Decompose with BCNF

We got these 4 tables using the BCNR normalisation tool at  
<http://www.grammaticalframework.org/qconv/>

### 1. Attributes:

courseCode courseName credits departmentName capacity

Keys:

courseCode

### 2. Attributes:

login studentIdnr studentName branchName programName

Keys:

studentIdnr

login

### 3. Attributes:

courseCode position login grade

Keys:

courseCode login

courseCode position

### 4. Attributes:

courseCode classification position

Keys:

courseCode classification position

R1(courseCode courseName credits capacity departmentName)

R2(studentIdnr login studentName branchName programName)

R3(login courseCode position grade)

R4(login courseCode classification)

## 4. MVD

courseCode  $\twoheadrightarrow$  classification is a multivalued dependency

So the relation R4 should be decomposed into two different relations

Ra(login courseCode)

and

Rb(courseCode classification)