

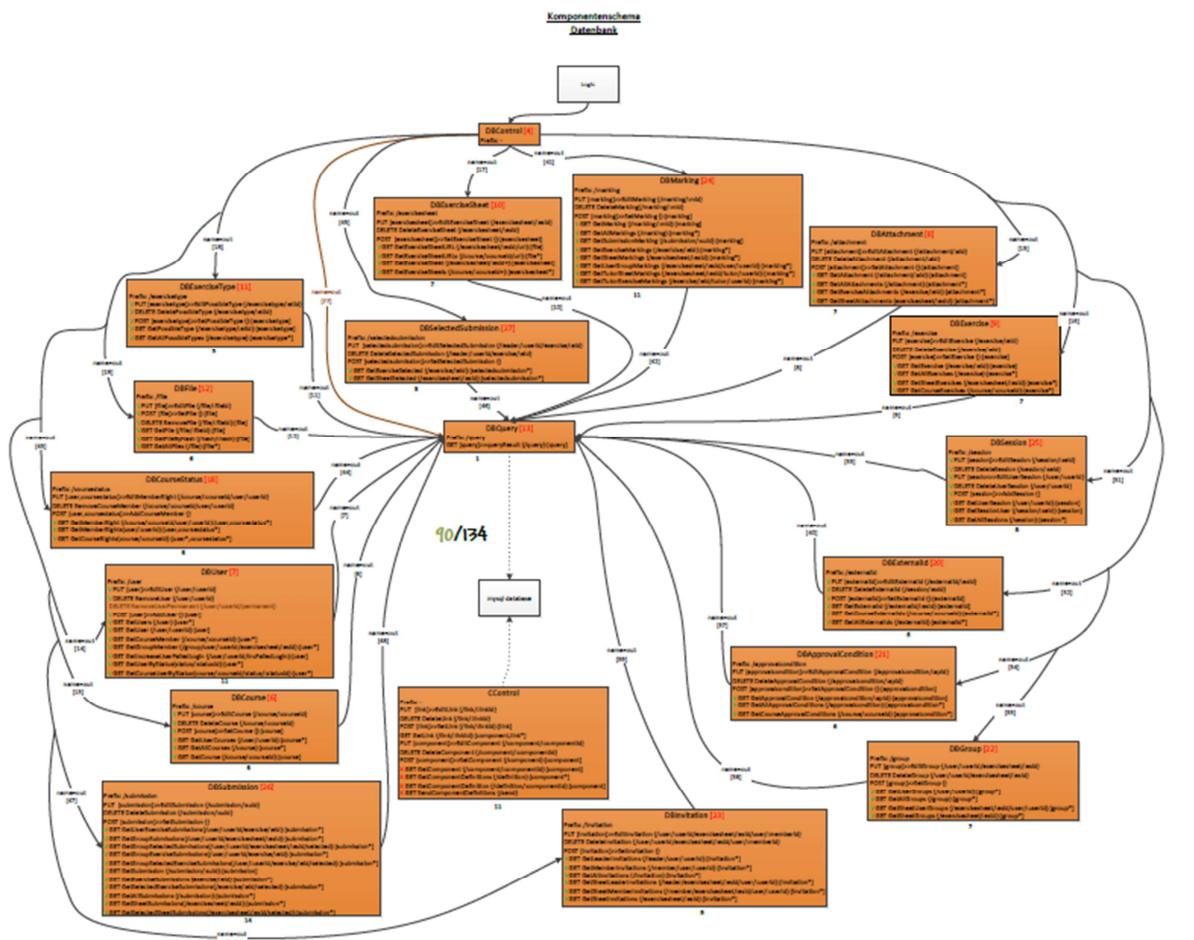
## Datenbankschicht:

- Besteht aus zwei Teilen
- Datenbank (DB) und Datenbanklogik (DBL)

## DBL

- Besteht aus 19 Komponenten
- Regelt Kommunikation zwischen Logikschicht und DB
- Komponenten kommunizieren mit Jason

## DBL-Komponenten:



## DBControl

- Regelt Kommunikation zwischen Komponenten der DBL
- Leitet Informationen aus und an Logikschicht weiter



## DBExerciseSheet

- Verwaltet DB-Tabelle ExerciseSheet

- Übersetzt Anforderungen der Logik in SQL für DBQuery

**DBExerciseSheet [10]**  
 Prefix: /exerciseshet  
 PUT [exerciseshet]>>EditExerciseSheet {/exerciseshet/:esid}  
 DELETE DeleteExerciseSheet {/exerciseshet/:esid}  
 POST [exerciseshet]>>SetExerciseSheet {}:[exerciseshet]  
 ✓ GET GetExerciseSheetURL {/exerciseshet/:esid/url}:[file]  
 ✓ GET GetExerciseSheetURLs {/course/:courseid/url}:[file\*]  
 ✓ GET GetExerciseSheet {/exerciseshet/:esid+}:[exerciseshet]  
 ✓ GET GetExerciseSheets {/course/:courseid+}:[exerciseshet\*]

#### DBSelectedSubmission

- Verwaltet
- Übersetzt Anforderungen der Logik in SQL für DBQuery

**DBSelectedSubmission [27]**  
 Prefix: /selectedsubmission  
 PUT [selectedsubmission]>>EditSelectedSubmission {/leader/:userid/exercise/:eid}  
 DELETE DeleteSelectedSubmission {/leader/:userid/exercise/:eid}  
 POST [selectedsubmission]>>SetSelectedSubmission {}  
 ✓ GET GetExerciseSelected {/exercise/:eid}:[selectedsubmission\*]  
 ✓ GET GetSheetSelected {/exerciseshet/:esid}:[selectedsubmission\*]

#### DBQuery

- Übernimmt Kommunikation zwischen DBL und DB

**DBQuery [13]**  
 Prefix: /query  
 GET [query]>>queryResult {/query}:[query]

#### DBMarking

- Verwaltet Marking-Tabelle der DB
- Übersetzt Anforderungen der Logik in SQL für DBQuery

**DBMarking [24]**  
 Prefix: /marking  
 PUT [marking]>>EditMarking {/marking/:mid}  
 DELETE DeleteMarking{/marking/:mid}  
 POST [marking]>>SetMarking {}:[marking]  
 ✓ GET GetMarking {/marking/:mid}:[marking]  
 ✓ GET GetAllMarkings {/marking}:[marking\*]  
 ✓ GET GetSubmissionMarking {/submission/:suid}:[marking]  
 ✓ GET GetExerciseMarkings {/exercise/:eid}:[marking\*]  
 ✓ GET GetSheetMarkings {/exerciseshet/:esid}:[marking\*]  
 ✓ GET GetUserGroupMarkings {/exerciseshet/:esid/user/:userid}:[marking\*]  
 ✓ GET GetTutorSheetMarkings {/exerciseshet/:esid/tutor/:userid}:[marking\*]  
 ✓ GET GetTutorExerciseMarkings {/exercise/:eid/tutor/:userid}:[marking\*]

#### DBAttachment

- Verwaltet Attachment-Tabelle
- Übersetzt Anforderungen der Logik in SQL für DBQuery

### DBAttachment [8]

Prefix: /attachment

```
PUT [attachment]>>EditAttachment {/attachment/:aid}
DELETE DeleteAttachment {/attachment/:aid}
POST [attachment]>>SetAttachment {}:[attachment]
✓ GET GetAttachment {/attachment/:aid}:[attachment]
✓ GET GetAllAttachments {/attachment}:[attachment*]
✓ GET GetExerciseAttachments {/exercise/:eid}:[attachment*]
✓ GET GetSheetAttachments {exerciseshet/:esid}:[attachment*]
```

### DBExercise

- Verwaltet Exercise-Tabelle der DB
- Übersetzt Anforderungen der Logik in SQL für DBQuery

### DBExercise [9]

Prefix: /exercise

```
PUT [exercise]>>EditExercise {/exercise/:eid}
DELETE DeleteExercise {/exercise/:eid}
POST [exercise]>>SetExercise {}:[exercise]
✓ GET GetExercise {/exercise/:eid}:[exercise]
✓ GET GetAllExercises {/exercise}:[exercise*]
✓ GET GetSheetExercises {/exerciseshet/:esid}:[exercise*]
✓ GET GetCourseExercises {/course/:courseid}:[exercise*]
```

### DBSession

- Verwaltet die Session-Tabelle der DB
- Übersetzt Anforderungen der Logik in SQL für DBQuery

### DBSession [25]

Prefix: /session

```
✓ PUT [session]>>EditSession {/session/:seid}
✓ DELETE DeleteSession {/session/:seid}
✓ PUT [session]>>EditUserSession {/user/:userid}
✓ DELETE DeleteUserSession {/user/:userid}
✓ POST [session]>>AddSession {}
✓ GET GetUserSession {/user/:userid}:[session]
✓ GET GetSessionUser {/session/:seid}:[session]
✓ GET GetAllSessions {/session}:[session*]
```

### DBExternalId

- Verwaltet die ExternalId-Tabelle
- Übersetzt Anforderungen der Logik in SQL für DBQuery

### DBExternalId [20]

Prefix: /externalid

```
✓ PUT [externalid]>>EditExternalId {/externalid/:exid}
✓ DELETE DeleteExternalId {/session/:exid}
✓ POST [externalid]>>SetExternalId {}:[externalid]
✓ GET GetExternalId {/externalid/:exid}:[externalid]
✓ GET GetCourseExternalIds {/course/:courseid}:[externalid*]
✓ GET GetAllExternalIds {/externalid}:[externalid*]
```

### DBApprovalCondition



- Verwaltet die ApprovalConditions-Tabelle der DB
- Übersetzt Anforderungen der Logik in SQL für DBQuery

**DBApprovalCondition [21]**

Prefix: /approvalcondition

PUT [approvalcondition]>>EditApprovalCondition {/approvalcondition/:apid}

DELETE DeleteApprovalCondition {/approvalcondition/:apid}

POST [approvalcondition]>>SetApprovalCondition {}:[approvalcondition]

✓ GET GetApprovalCondition {/approvalcondition/:apid}:[approvalcondition]

✓ GET GetAllApprovalConditions {/approvalcondition}:[approvalcondition\*]

✓ GET GetCourseApprovalConditions {/course/:courseid}:[approvalcondition\*]

#### DBGroup

- Verwaltet die Group-Tabelle der DB
- Übersetzt Anforderungen der Logik in SQL für DBQuery

**DBGroup [22]**

Prefix: /group

PUT [group]>>EditGroup {/user/:userid/exercisesheet/:esid}

DELETE DeleteGroup {/user/:userid/exercisesheet/:esid}

POST [group]>>SetGroup {}

✓ GET GetUserGroups {/user/:userid}:[group\*]

✓ GET GetAllGroups {/group}:[group\*]

✓ GET GetSheetUserGroups {/exercisesheet/:esid/user/:userid}:[group\*]

✓ GET GetSheetGroups {/exercisesheet/:esid}:[group\*]

#### DBInvitation

- Verwaltet die Invitation-Tabelle
- Übersetzt Anforderungen der Logik in SQL für DBQuery

**DBInvitation [23]**

Prefix: /invitation

PUT [invitation]>>EditInvitation {/user/:userid/exercisesheet/:esid/user/:memberid}

DELETE DeleteInvitation {/user/:userid/exercisesheet/:esid/user/:memberid}

POST [invitation]>>SetInvitation {}

✓ GET GetLeaderInvitations {/leader/user/:userid}:[invitation\*]

✓ GET GetMemberInvitations {/member/user/:userid}:[invitation\*]

✓ GET GetAllInvitations {/invitation}:[invitation\*]

✓ GET GetSheetLeaderInvitations {/leader/exercisesheet/:esid/user/:userid}:[invitation\*]

✓ GET GetSheetMemberInvitations {/member/exercisesheet/:esid/user/:userid}:[invitation\*]

✓ GET GetSheetInvitations {/exercisesheet/:esid}:[invitation\*]

#### CControl

- Verwaltet die CControl-Tabelle der DB
- Übersetzt Anforderungen der Logik in SQL für DBQuery
- Beinhaltet die Adressen aller Komponenten der Übungsplattform

## CControl

Prefix: -

```
PUT [link]>>EditLink {/link/:linkid}
DELETE DeleteLink {/link/:linkid}
POST [link]>>SetLink {/link/:linkid}:{link}
GET GetLink {/link/:linkid}:{component,link*}
PUT [component]>>EditComponent {/component/:componentid}
DELETE DeleteComponent {/component/:componentid}
POST [component]>>SetComponent {/component/:component}
X GET GetComponent {/component/:componentid}:{component}
X GET GetComponentDefinitions {/definition/:component*}
X GET GetComponentDefinition {/definition/:componentid}:{component}
X GET SendComponentDefinitions {/send}
```

## DBSubmission

- Verwaltet die Submission-Tabelle
- Übersetzt Anforderungen der Logik in SQL für DBQuery

### DBSubmission [26]

Prefix: /submission

```
PUT [submission]>>EditSubmission {/submission/:suid}
DELETE DeleteSubmission {/submission/:suid}
POST [submission]>>SetSubmission {}
V GET GetUserExerciseSubmissions{/user/:userid/exercise/:eid}:{submission*}
V GET GetGroupSubmissions{/user/:userid/exercisesheet/:esid}:{submission*}
V GET GetGroupSelectedSubmissions{/user/:userid/exercisesheet/:esid/selected}:{submission*}
V GET GetGroupExerciseSubmissions{/user/:userid/exercise/:eid}:{submission*}
V GET GetGroupSelectedExerciseSubmissions{/user/:userid/exercise/:eid/selected}:{submission*}
V GET GetSubmission {/submission/:suid}:{submission}
V GET GetExerciseSubmissions {exercise/:eid}:{submission*}
V GET GetSelectedExerciseSubmissions{exercise/:eid/selected}:{submission*}
V GET GetAllSubmissions {/submission}:{submission*}
V GET GetSheetSubmissions{/exercisesheet/:esid}:{submission*}
V GET GetSelectedSheetSubmissions{/exercisesheet/:esid/selected}:{submission*}
```

## DBCOURSE

- Verwaltet die Course-Tabelle in der DB
- Übersetzt Anforderungen der Logik in SQL für DBQuery

### DBCOURSE [6]

Prefix: /course

```
V PUT [course]>>EditCourse {/course/:courseid}
V DELETE DeleteCourse {/course/:courseid}
V POST [course]>>SetCourse {}:course
V GET GetUserCourses {/user/:userid}:{course*}
V GET GetAllCourses {/course}:{course*}
V GET GetCourse {/course/:courseid}:{course}
```

## DBUser

- Verwaltet die User-Tabelle in DB
- Übersetzt Anforderungen der Logik in SQL für DBQuery

### DBUser [7]

Prefix: /user

```
✓ PUT [user]>>EditUser {/user/:userid}
✓ DELETE RemoveUser {/user/:userid}
  DELETE RemoveUserPermanent {/user/:userid/permanent}
✓ POST [user]>>AddUser {}: [user]
✓ GET GetUsers {/user/:user*}
✓ GET GetUser {/user/:userid}: [user]
✓ GET GetCourseMember {/course/:courseid}: [user*]
✓ GET GetGroupMember {/group/user/:userid/exercisesheet/:esid}: [user*]
✓ GET GetIncreaseUserFailedLogin {/user/:userid/incFailedLogin}: [user]
✓ GET GetUserByStatus {status/:statusid}: [user*]
✓ GET GetCourseUserByStatus {course/:courseid/status/:statusid}: [user*]
```

### DBCOURSESTATUS

- Verwaltet die CourseStatus-Tabelle
- Übersetzt Anforderungen der Logik in SQL für DBQuery

### DBCOURSESTATUS [18]

Prefix: /coursestatus

```
PUT [user,coursestatus]>>EditMemberRight {/course/:courseid/user/:userid}
DELETE RemoveCourseMember {/course/:courseid/user/:userid}
POST [user,coursestatus]>>AddCourseMember {}
✓ GET GetMemberRight {/course/:courseid/user/:userid}: [user,coursestatus*]
✓ GET GetMemberRights {user/:userid}: [user,coursestatus*]
✓ GET GetCourseRights {course/:courseid}: [user*,coursestatus*]
```

### DBFile

- Verwaltet die File-Tabelle in der DB
- Übersetzt Anforderungen der Logik in SQL für DBQuery
- Speichert Informationen über Dateien die auf der Übungsplattform hochgeladen wurden

### DBFile [12]

Prefix: /file

```
✓ PUT [file]>>EditFile {/file/:fileid}
✓ POST [file]>>SetFile {}: [file]
✓ DELETE RemoveFile {/file/:fileid}: [file]
✓ GET GetFile {/file/:fileid}: [file]
✓ GET GetFileByHash {/hash/:hash}: [file]
✓ GET GetAllFiles {/file}: [file*]
```

### DBExerciseType

- Verwaltet die Exercise-Tabelle der DB
- Übersetzt Anforderungen der Logik in SQL für DBQuery

### DBExerciseType [11]

Prefix: /exercisetype

```
✓ PUT [exercisetype]>>EditPossibleType {/exercisetype/:etid}
✓ DELETE DeletePossibleType {/exercisetype/:etid}
✓ POST [exercisetype]>>SetPossibleType {}: [exercisetype]
✓ GET GetPossibleType {/exercisetype/:etid}: [exercisetype]
✓ GET GetAllPossibleTypes {/exercisetype}: [exercisetype*]
```