

Inhalt

Was ist ein Framework

System - PHP Framework

Anwendungsbereich

Features

Vorteile und Nachteile

Ausblick

Versionskontrolle

Software Empfehlungen

Was ist ein Framework

Middleware

„Middleware ist eine zusätzliche Schicht zwischen Betriebssystem und Anwendungen.“ Wikipedia

Aufgaben und Funktion einer Middleware

- ▶ Versteckt komplizierte Systeme
- ▶ Bietet einfache Schnittstellen
- ▶ Modularisierung von Software
- ▶ Konkreter und beschränkter Anwendungsbereich



Alternative PHP-Frameworks

Zend Framework

<http://framework.zend.com/>

Laravel

<https://laravel.com/>

Symphony

<http://symfony.com/>



System - PHP Framework

Anwendungsbereich von System

System kann in PHP-basierten Anwendungen eingesetzt werden.

- ▶ Websites
- ▶ Webtools
- ▶ Webapps

Features von System

System vereinfacht die Entwicklung von PHP basierten Anwendungen

- ▶ Kapselung
- ▶ REST Schnittstelle
- ▶ Moderne Webtechnologien
- ▶ Utilities
- ▶ Modulare GUI für administrative Aufgaben

Teilintegration möglich

Klassische Struktur von PHP Projekten

Die klassische Struktur von PHP Projekten orientiert sich oft an der HTML Struktur.

```
<?php
$something = "classname";
$ip = "127.0.0.1";
$port = "8080";
?>
<!-- This works -->
<p>Your IP: <?php echo $ip." ".$port?></p>

<!-- This doesn't work -->
<p class="<?php echo $something?>">Hello</p>
<p class="<?=$something?>">Hello</p>
<span data-ip="<?php echo $ip." ".$port?>">Click here</span>
```

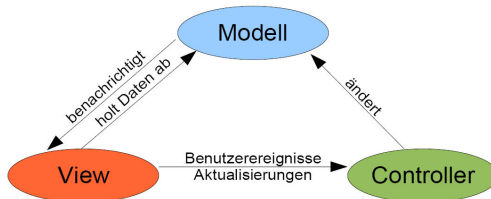

Kapselung in System

Eine Gute Kapselung vereinfacht die Übersicht über das Programm.

- ▶ nach Sprache
- ▶ nach Art der Rückgabe (Website/Daten/Administratives)
- ▶ nach Sinneinheit (Seiten/Module)

Kapselung nach Sprache - MVC-Modell

Der Begriff model view controller (MVC) ist ein Muster zur Strukturierung von Software-Entwicklung in die drei Einheiten Datenmodell, Präsentation und Programmsteuerung. (wikipedia)



Kapselung nach Sprache

Die Kapselung nach Sprache implementiert ein MVC-Modell

MVC durch Kapselung nach Sprache

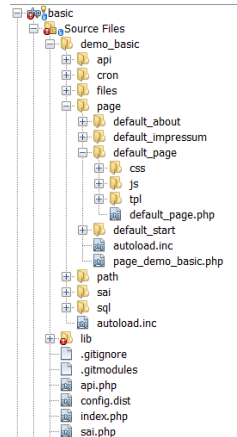
- ▶ PHP (Controller Server)
- ▶ SQL (Model)
- ▶ JS (Controller Client)
- ▶ CSS (View)
- ▶ HTML (View)

System - PHP Framework

Kapselung nach Sinneinheit

- ▶ Ordnerstrukturen ordnen den Code
- ▶ Modulare Schnittstellen - pages, sai module
- ▶ Frei wählbar

Das PHP-Feature “autoload” ermöglicht es Klassen bei Bedarf nachzuladen.



REST in System - quality APIs

Funktion

- ▶ Mapping von URL-Parametern auf Funktionsnamen
- ▶ Regeln definiert zulässige Aufrufe
- ▶ Parameter-Typ-Prüfung

Nutzen

- ▶ Sicherheit
- ▶ Zuverlässigkeit
- ▶ Persistenz

Moderne Webtechnologien, von System unterstützt

- ▶ Hashbang Crawling-Scheme - #!adresse
- ▶ JQuery & Bootstrap
- ▶ SCSS(SASS)
- ▶ Minify
- ▶ Git



Utilities von System

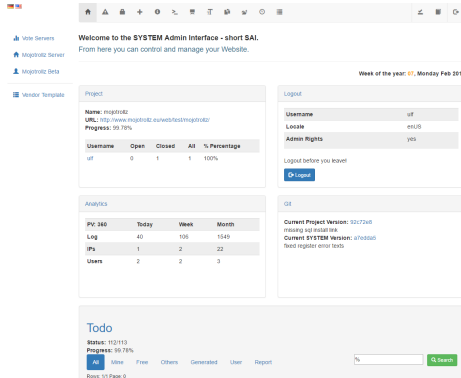
Codebeispiel - Template System

```

default_page.tpl
Source History
1 <html>
2 <head>
3 <meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
4 <meta name="viewport" content="width=device-width, initial-scale=1">
5 <meta name="description" content="{meta_description}">
6 <meta name="keywords" content="{meta_keywords}">
7 <meta name="author" content="{meta_author}">
8 <title>{meta_title}</title>
9 </head>
10 <body>
11 <link rel="shortcut icon" href="/api.php?call=files&cat=img&id=favicon.png" type="image/x-icon" />
12 </body>
13 <div style="background: #000000; padding-top: 10px;">
14 <div class="modal fade" id="modal_text" style="" tabindex="-1" role="dialog" aria-labelledby="myModalLabel" aria-hidden="true">
15 <div class="modal-content">
16 <div class="modal-body" id="modaltxt"></div>
17 <div class="modal-footer">
18 <button type="button" class="btn" data-dismiss="modal" id="edit_close">Close</button>
19 </div>
20 </div><!-- /.modal-content -->
21 </div><!-- /.modal-dialog -->
22 </div><!-- /.modal -->
23 <div id="menu">
24 <div id="menu_content">
25 <a href="#!start">{menu_start}</a>
26 <a href="#!about">{menu_about}</a>
27 </div>
28 </div>
29 <div id="content"></div>
30 <div id="footer">
31 <a href="#!impressum" id="impressum">{menu_imprint}</a>
32 </div>
33 </html>
34
35

```


SAI - Start



SAI - Log

System Log

Log Analytic

Vendor Template

Exception LOGPLAYER_COUNT_CLASSIC LOGPLAYER_COUNT_TBC LOGPLAYER_COUNT_TS RuntimeException

SYSTEMLOG.LOGCOUNTER SYSTEMLOG.LOGCRON SYSTEM.LOGERRORR SYSTEM.LOGERRORR_EXCEPTION

SYSTEMLOG.WARNING TeamSpeak3_Adapter_ServerQuery_Exception TeamSpeak3_NetEx_Exception

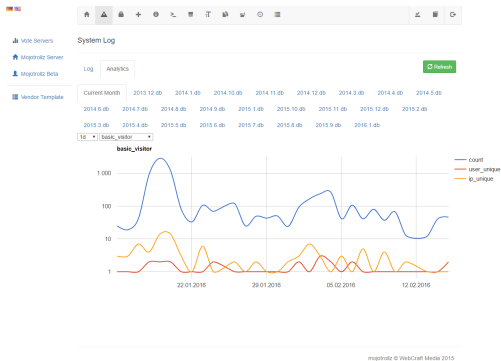
Search

Rows: 180/581 Page 0

| Time Ago | Class | Message | File | Line | IP | URL | User | Querytime |
|---------------|----------------------|-------------------------------|---------------------------|------|---------------|--|------|-----------|
| 1 minutes ago | SYSTEMLOG.LOGCOUNTER | API was called success fully. | netherwebseite\logapi.php | 5 | 37.24.143.137 | www.mighttribz.eu/8nweb/testmighttribz/p4.php?call=cachedin=15d6e18c1ce206&brain10at7334ab0a09f5e2b441cf735768_=145558615265 | uf | 0.072 |
| 1 minutes ago | SYSTEMLOG.LOGCOUNTER | API was called success fully. | netherwebseite\logapi.php | 5 | 37.24.143.137 | www.mighttribz.eu/8nweb/testmighttribz/p4.php?call=cachedin=15d6e18c1ce206&brain10at7334ab0a09f5e2b441cf735768_=145558615264 | uf | 0.068 |
| 1 minutes ago | SYSTEMLOG.LOGCOUNTER | API was called success fully. | netherwebseite\logapi.php | 5 | 37.24.143.137 | www.mighttribz.eu/8nweb/testmighttribz/p4.php?call=cachedin=15d6e18c1ce206&brain10at7334ab0a09f5e2b441cf735768_=145558615263 | uf | 0.076 |
| 2 minutes ago | SYSTEMLOG.LOGCOUNTER | API was called success fully. | netherwebseite\logapi.php | 5 | 37.24.143.137 | www.mighttribz.eu/8nweb/testmighttribz/p4.php?call=cachedin=15d6e18c1ce206&brain10at7334ab0a09f5e2b441cf735768_=145558615262 | uf | 0.068 |
| 2 minutes ago | SYSTEMLOG.LOGCOUNTER | API was called success fully. | netherwebseite\logapi.php | 5 | 37.24.143.137 | www.mighttribz.eu/8nweb/testmighttribz/p4.php?call=cachedin=15d6e18c1ce206&brain10at7334ab0a09f5e2b441cf735768_=145558615261 | uf | 0.108 |
| 2 minutes ago | SYSTEMLOG.LOGCOUNTER | API was called success fully. | netherwebseite\logapi.php | 5 | 37.24.143.137 | www.mighttribz.eu/8nweb/testmighttribz/p4.php?call=cachedin=15d6e18c1ce206&brain10at7334ab0a09f5e2b441cf735768_=145558615260 | uf | 0.06 |
| 2 minutes ago | SYSTEMLOG.LOGCOUNTER | API was called success fully. | netherwebseite\logapi.php | 5 | 37.24.143.137 | www.mighttribz.eu/8nweb/testmighttribz/p4.php?call=cachedin=15d6e18c1ce206&brain10at7334ab0a09f5e2b441cf735768_=145558615259 | uf | 0.128 |



SAI - Analysis





SAI - Cron

Schedule Cron

Last Visit: 11 Stunden(s) zuvor
Start Cron

| class | min | hour | day | day_week | month | last_run | next_run | status | action |
|------------------------------|-----|------|-----|----------|-------|------------------------|---------------------|--------|--------|
| cron_postprocessing | 0 | 0 | 1 | 0 | 0 | 2016-02-15 07:40:29+01 | 2016-02-15 07:40:00 | St > | C ✓ ✗ |
| cron_preprocessing | 0 | 0 | 1 | 0 | 0 | 2016-02-15 07:40:29+01 | 2016-02-15 07:40:00 | St > | C ✓ ✗ |
| SYSTEMCRON/cron_cache_delete | 0 | 0 | 1 | 0 | 0 | 2016-02-15 07:40:29+01 | 2016-02-15 07:40:00 | St > | C ✓ ✗ |
| SYSTEMCRON/cron_logdelete | 0 | 0 | 1 | 0 | 0 | 2016-02-15 05:17:01+01 | 2016-02-15 05:17:00 | St > | C ✓ ✗ |

Push Message + Hinzufügen

Calibration

Vorteile bei Einsatz von System

- ▶ Kompakt und Einfach
- ▶ Noch jung, keine starren Strukturen
- ▶ Git kompatibel
- ▶ frei (<https://github.com/webcraftmedia/system>)

Nachteile bei Einsatz von System

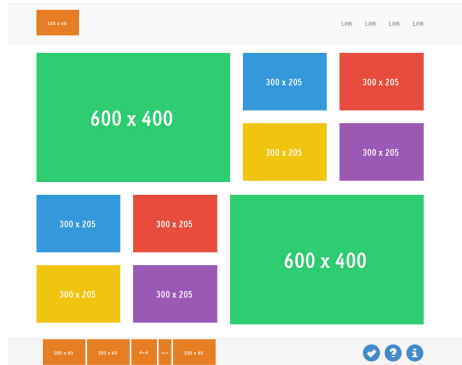
- ▶ Geringe Verbreitung
- ▶ Geringer Anteil an Dokumentation
- ▶ Unzureichende Nutzerverwaltung

Ausblick - Bootstrap

- ▶ Bootstrap Grid
- ▶ Col füllen/nachladen
- ▶ Bootstrap Menü

Nutzen

- ▶ “Click Click” Webseiten
- ▶ Noch einfacher
- ▶ Wiederverwertung von Templates/Code

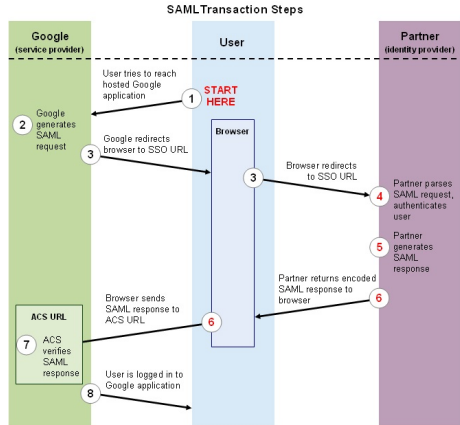


Ausblick - Usermanagement

- unzureichend
- umständlich
- Tabelle pro Projekt

SAML

- IDPs
- SPs
- verwaltung mehrer Seiten, Zentralisierung

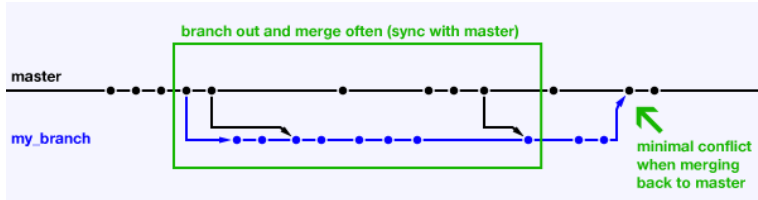


Versionskontrolle

Was Ist Versionskontrolle?



Git Branch



Git Workflow



Welche Versionskontrollsystem gibt es?

- ▶ Git
- ▶ Mercurial
- ▶ SVN
- ▶ Andere (2005)

Welches Versionskontrollsystem ist das richtige?

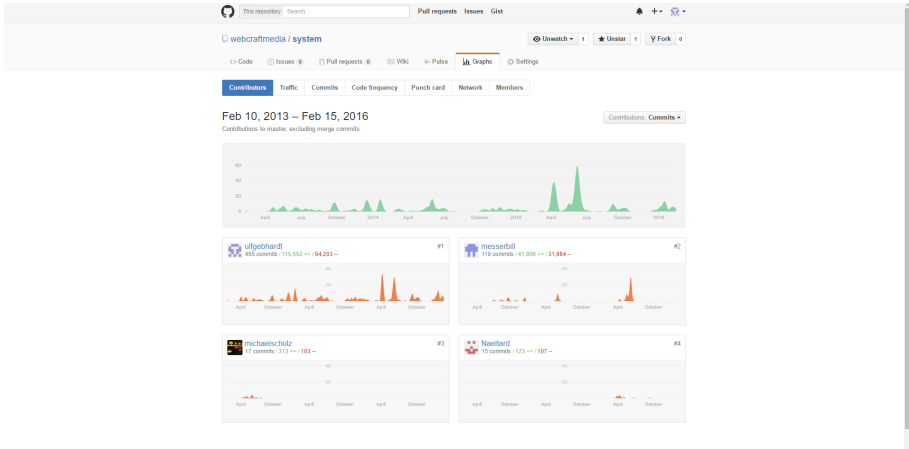
- ▶ Mercurial (code.google.com)
- ▶ SVN (Probleme, zu alt)
- ▶ Git (github.com - Die Bibliothek von Alexandria des 21. Jahrhunderts)

Features von GIT

Git ist zentraler Bestandteil jeder modernen IT-Firma.

- ▶ Kontrolle der Entwicklung/Abrechnung
- ▶ Motivation
- ▶ Deploy
- ▶ Mehrere Entwickler können an dem selben Projekt arbeiten
- ▶ Backup inklusive Historie

Projektverlauf visualisiert über Git



Software Empfehlungen - Entwicklung

Versionskontrollsoftware für GIT

- ▶ Git Console
- ▶ Tortoise Git
- ▶ Smart Git (commercial)

Git Console

```

MINGW32:~/git
Welcome to Git (version 1.8.3-preview20130601)

Run 'git help git' to display the help index.
Run 'git help <command>' to display help for specific commands.

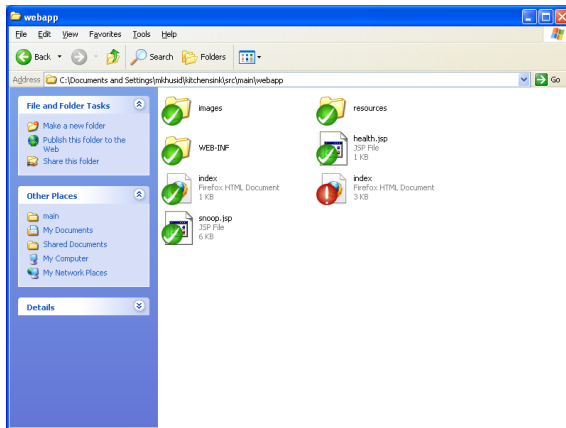
Bacon@BACON ~
$ git clone https://github.com/msysgit/git.git
Cloning into 'git'...
remote: Counting objects: 177468, done.
remote: Compressing objects: 100% (52057/52057), done.
remote: Total 177468 (delta 133396), reused 166093 (delta 123576)
Receiving objects: 100% (177468/177468), 42.16 MiB | 1.84 MiB/s, done.
Resolving deltas: 100% (133396/133396), done.
Checking out files: 100% (2576/2576), done.

Bacon@BACON ~
$ cd git

Bacon@BACON ~/git (master)
$ git status
# On branch master
nothing to commit, working directory clean

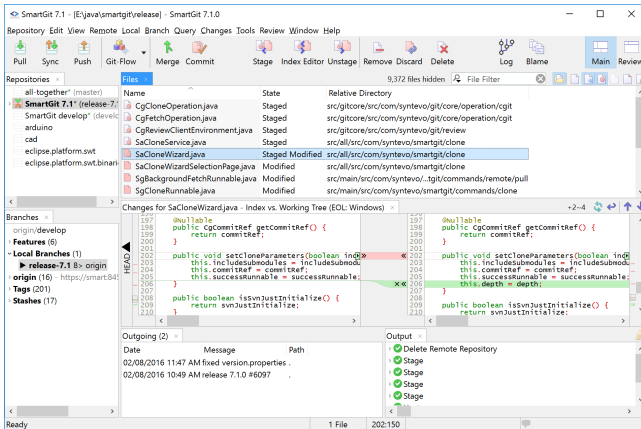
Bacon@BACON ~/git (master)
$
    
```

Tortoise Git



Versionskontrolle

Smart Git



Entwicklungsumgebung

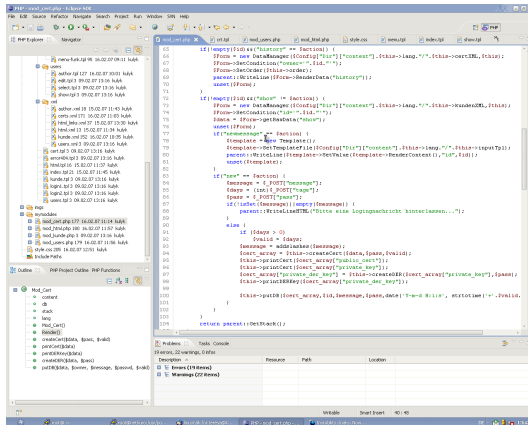
- ▶ Code-Autovervollständigung
- ▶ Strg-Click - Navigation
- ▶ Integration in den Entwicklungsprozess

Entwicklungsumgebung für PHP

- ▶ Netbeans
- ▶ Eclipse
- ▶ PhpStorm (commercial)



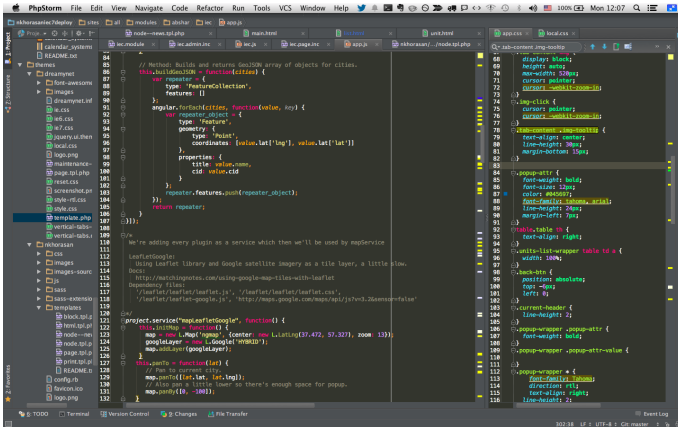
Eclipse





Entwicklungsumgebung

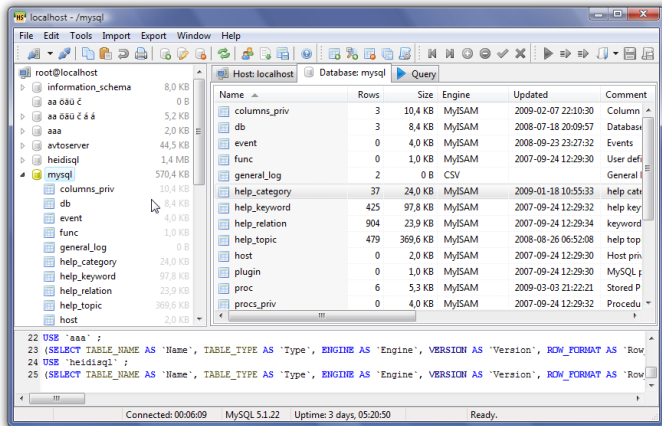
PhpStorm




SQL Client

- ▶ Heidi SQL
- ▶ phpMyAdmin
- ▶ Navicat (commercial)

Heidi SQL



phpMyAdmin



Database:

base2 (28)




































base2






- ngesappel
- annusiae
- artid
- bikes
- binary_data
- fraglong
- ram
- chiffe
- clients
- colors
- comments
- contenents
- countries
- net1__b
- net1__a
- net1__tblb2
- nodes
- postcounter
- permors
- process
- self_jan

Server: localhost Database: base2 Table: persons

Structure Browse SQL Search Insert Export Operations Empty Drop









table personnes aaa; InnoDB free: 343040 kB; ('town_code') REFER 'base2:towns' ('town_code'); ('country_code') REFER 'base2:countries' ('country_code')

| Field | Type | Attributes | Null | Default | Extra | Action |
|---------------------------------------|--------------|------------|----------|---------|----------------|--|
| <input type="checkbox"/> id | tinyint(4) | | No | | auto_increment |        |
| <input type="checkbox"/> person_name | varchar(200) | | No | | |        |
| <input type="checkbox"/> town_code | varchar(5) | | Yes 0 | | |        |
| <input type="checkbox"/> country_code | char(1) | | Yes NULL | | |        |
| <input type="checkbox"/> car_code | char(3) | | No | | |        |

Check All / Uncheck All With selected:     

Print view Relation view Propose table structure

Add 1 field(s) At End of Table At Beginning of Table After id Go

| Keyname | Type | Cardinality | Action | Field |
|--------------|---------|-------------|---|---------------------------|
| PRIMARY | PRIMARY | 2 |   | id |
| town_code | INDEX | 2 |   | town_code |
| country_code | INDEX | 2 |   | country_code |
| pays-ville | INDEX | 2 |   | country_code town_code |

Space usage:

| Type | Usage |
|-------|--------------|
| Data | 16,384 Bytes |
| Index | 49,152 Bytes |
| Total | 65,536 Bytes |

Row Statistic:

| Statements | Value |
|----------------|---------|
| Format | dynamic |
| Next Autoindex | 5 |

More than one INDEX key was created for column 'country_code'

Create an index on 1 columns Go

Navicat

The screenshot displays the Navicat for SQL Server application window. The title bar reads "Navicat for SQL Server". The menu bar includes File, View, Favorites, Tools, Window, and Help. The toolbar contains icons for Connection, User, Table, View, Function, Others, SQL Server Backup, Query, Report, Schedule, and Model. The main interface is divided into three panes:

- Left Pane (Object Explorer):** Shows the database hierarchy. The "Production Server" is expanded, showing "SQL Azure" and "SQL Server 2008". Under "SQL Server 2008", the "AdventureWorks" database is selected. Within "AdventureWorks", the "Tables" folder is expanded, listing tables such as Department, Employee, EmployeeAddress, EmployeeDepart..., EmployeePayHi..., JobCandidate, and Shift.
- Top Center Pane (Object List):** Displays a list of objects for the selected table. The objects are: Department (16 rows, 2013-02-26 15:33:24), Employee (290 rows, 2013-02-26 15:33:24), EmployeeAddress (290 rows, 2010-06-11 12:21:42), EmployeeDepart... (296 rows, 2010-10-18 15:53:15), EmployeePayHi... (316 rows, 2010-06-11 12:21:42), JobCandidate (13 rows, 2010-06-11 12:21:42), and Shift (3 rows, 2013-03-06 16:19:51).
- Bottom Center Pane (Table Properties):** Shows the properties for the "Department" table. The "General" tab is active, displaying the following details:

| General | DDL | Using | Used By |
|---------------|--|-------|---------|
| Name | | Value | |
| Name | Department | | |
| OID | 805577908 | | |
| Schema | HumanResources | | |
| Database | AdventureWorks | | |
| Group Name | | | |
| Rows | 16 | | |
| Created Date | 2010-06-11 12:21:17 | | |
| Modified Date | 2013-02-26 15:33:24 | | |
| Data Size | 8.00 KB (8,192) | | |
| Index Size | 24.00 KB (24,576) | | |
| Comment | Lookup table containing the departments within the Adv | | |

The status bar at the bottom indicates: "7 Tables (7 in current group)" and "SQL Server 2008 User: sa Database: AdventureWorks Schema: HumanResources".

Outro

Fragen

Danke für Ihre Aufmerksamkeit

System - Gems

- ▶ API - REST in System
- ▶ Quick Query - Sichere SQL Querys

System - Gems

API - REST in System

URL

`http://www.example.com/?page=start`

Regeln

| system_api (7×1) | | | | | | |
|------------------|-------|------|----------|-------------|------|--------|
| ID | group | type | parentID | parentValue | name | verify |
| 1 | 1 | 0 | -1 | (NULL) | page | (NULL) |

Funktion

```
public static function page_start()
```

API Class Beispiel

```
<?php
class api_dasense extends \SYSTEM\API\api_system{
    //Sensor & Geopoint
    public static function call_page_page_sensor($sensorid){
        return page_sensor::json($sensorid);
    }
    public static function call_page_page_geopoint($lat,$long,$radius,$datatype){
        return page_geopoint::json($lat, $long, $radius, $datatype);
    }
    public static function call_page_page_geopoint_flag_explore($lat,$long,$radius,$datatype){
        return page_geopoint_explore::json($lat, $long, $radius, $datatype);
    }

    //Accountcalls
    public static function call_account_action_login_flag_compatibility($username, $password_sha, $password_md5, $locale, $deviceinfo){
        return DasenseAccount::login($username, $password_sha, $password_md5, $locale, $deviceinfo);
    }
    public static function call_account_action_login_flag_repairSHA($username, $password_sha_wrong, $password_md5, $password_sha_new, $locale, $deviceinfo){
        return DasenseAccount::login($username, $password_sha_wrong, $password_md5, $locale, $deviceinfo, $password_sha_new);
    }
    public static function call_account_action_create_flag_compatibility($username, $password_sha, $email, $locale, $deviceinfo){
        return DasenseAccount::create($username, $password_sha, $email, $locale, $deviceinfo);
    }
    public static function call_account_action_update_change_password($username, $password_sha_old, $password_sha_new){
        return DasenseAccount::changePassword($username, $password_sha_old, $password_sha_new);
    }
    public static function call_account_action_resetpassword($username, $email){
        return DasenseAccount::resetPassword($username, $email);
    }
    public static function call_account_action_login_flag_data($username, $password_sha, $password_md5, $locale, $deviceinfo, $data){
        return DasenseAccount::login_data($username, $password_sha, $password_md5, $locale, $deviceinfo, $data);
    }

    // [06.04.2013] Push Message: register a device for push notification service
    public static function call_account_action_msg_method_register($userid,$deviceid,$token,$os){
        return MessageController::handleRegistrationToken($userid,$deviceid,$token,$os);
    }

    // [06.04.2013] Push Message: allows users to invite friends via email
    public static function call_account_action_msg_method_invite($userid,$recipient_email,$msg){
        return MessageController::inviteUser($userid,$recipient_email,$msg);
    }

    // [09.04.2013] Profile: get user's public profile
    public static function call_account_action_profile_get_public($userid){
        return ProfileController::getPublicProfile($userid);
    }

    //Logging system
    /* public static function call_log($json){
        // ...
    }
}
```


Quick Query - Sichere SQL Querys

QQ

```
k?php
2 namespace SYSTEM\SQL;
3 class SYS_CACHE_DELETE_ALL extends \SYSTEM\DB\QQ {
4     public static function get_class(){return \get_class();}
5     public static function pgsql(){return
6         'DELETE FROM system.cache;';
7     }
8     public static function mysql(){return
9         'DELETE FROM system_cache;';
10    }
11 }
```

QP

```
k?php
2 namespace SYSTEM\SQL;
3 class SYS_CACHE_DELETE extends \SYSTEM\DB\QP {
4     public static function get_class(){return \get_class();}
5     public static function pgsql(){return
6         'DELETE FROM system.cache'.
7         ' WHERE "CacheID" = $1 AND'.
8         ' "Ident" = $2;';
9     }
}
```

Quick Query - Sichere SQL Querys

Q1 - Eine Zeile

```
$res = SYS_SAIMOD_API_SELECT::Q1(array($ID,$group));
```

QA - Alle Zeilen

```
$res = SYS_SAIMOD_API_SELECT::QA(array($ID,$group));
```

QQ - Selber Interrieren

```
$res = SYS_SAIMOD_API_SELECT::QQ(array($ID,$group));
```

QI - Einfügen/Löschen

```
$res = SYS_SAIMOD_API_SELECT::QI(array($ID,$group));
```