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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

System kann in PHP-basierten Anwendungen eingesetzt werden.

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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>
```

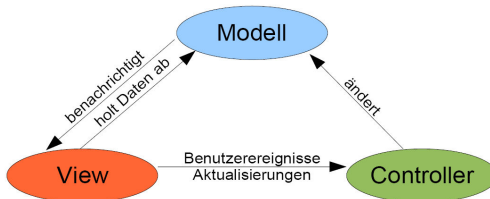

Kapselung in System

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

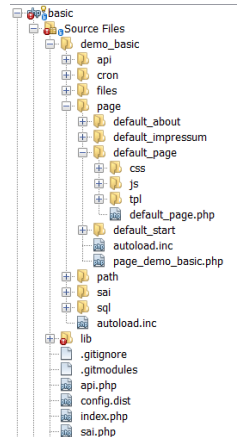
MVC durch Kapselung nach Sprache

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

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 x
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 {css}
10 {js}
11 <link rel="shortcut icon" href="/api.php?call=files&cat=img&id=favicon.png" type="image/x-icon" />
12 </head>
13 <body 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-dialog">
16 <div class="modal-content">
17 <div class="modal-body" id="modaltxt"></div>
18 <div class="modal-footer">
19 <button type="button" class="btn" data-dismiss="modal" id="edit_close">Close</button>
20 </div>
21 </div><!-- /.modal-content -->
22 </div><!-- /.modal-dialog -->
23 </div><!-- /.modal -->
24 <div id="menu">
25 <div id="menu_content">
26 <a href="#!start">{menu_start}</a>
27 <a href="#!about">{menu_about}</a>
28 </div>
29 </div>
30 <div id="content"></div>
31 <div id="footer">
32 <a href="#!impressum" id="impressum">{menu_imprint}</a>
33 </div>
34 </body>
35 </html>

```


SAI - Start

Welcome to the **SYSTEM** Admin Interface - short SAI.
From here you can control and manage your Website.

Week of the year: 67, Monday Feb 2016

Project

Name: megatron

URL: <http://www.megatron.de/web/short/megatron/>

Progress: 99.78%

Username	Open	Closed	All	% Percentage
ulf	0	1	1	100%

Logout

Username:

Locale:

Admin Rights:

Logout before you leave!

[Logout](#)

Analytics

IP: 340	Today	Week	Month
Log	40	105	1549
IPs	1	2	22
Users	2	2	3

Git

Current Project Version: 92c72a8

[missing sql install link](#)

Current SYSTEM Version: a7e0dad

[fixed register error texts](#)

Todo

Status: 112/113

Progress: 99.78%

All	Miss	Free	Others	Generated	User	Report
<input type="text" value=""/> Search						

Row: 1/1 Page: 0

SAI - Log

System Log

Log Analytics

Exception LOGPLAYER_COUNT_CLASSIC LOGPLAYER_COUNT_TBC LOGPLAYER_COUNT_TS RuntimeException

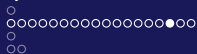
SYSTEMLOGICORROR SYSTEMLOGICORROR SYSTEMLOGGERORROR SYSTEMLOGGERORROR_EXCEPTION

SYSTEMLOGWARNING TeamSpeak3_Adapter_ServerQuery_Exception TeamSpeak3_Node_Exception

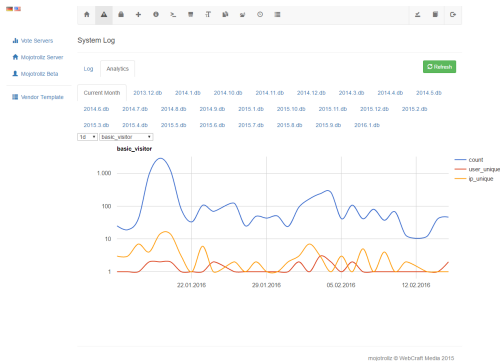
Refresh Search

Raw: 19050881 Page 0

Time Ago	Class	Message	File	Line	IP	URL	User Querying
1 minutes(s) ago	SYSTEMLOGCOUNTER	API was ca led success fully	b:\systemlog icorror.php	5	37.24.143.137	www.mgkdrbz.eu/80webtest/mgkdrbz2 _pi.php?ca=cacheid=1f4d8e181ccce206 6c1at10w7334ba095fe2d441cf79578_ 1455556610264	uff
1 minutes(s) ago	SYSTEMLOGCOUNTER	API was ca led success fully	b:\systemlog icorror.php	5	37.24.143.137	www.mgkdrbz.eu/80webtest/mgkdrbz2 _pi.php?ca=cacheid=1f4d8e181ccce206 6c1at10w7334ba095fe2d441cf79578_ 1455556610264	uff
1 minutes(s) ago	SYSTEMLOGCOUNTER	API was ca led success fully	b:\systemlog icorror.php	5	37.24.143.137	www.mgkdrbz.eu/80webtest/mgkdrbz2 _pi.php?ca=cacheid=1f4d8e181ccce206 6c1at10w7334ba095fe2d441cf79578_ 1455556610264	uff
2 minutes(s) ago	SYSTEMLOGCOUNTER	API was ca led success fully	b:\systemlog icorror.php	5	37.24.143.137	www.mgkdrbz.eu/80webtest/mgkdrbz2 _pi.php?ca=cacheid=1f4d8e181ccce206 6c1at10w7334ba095fe2d441cf79578_ 1455556610264	uff
2 minutes(s) ago	SYSTEMLOGCOUNTER	API was ca led success fully	b:\systemlog icorror.php	5	37.24.143.137	www.mgkdrbz.eu/80webtest/mgkdrbz2 _pi.php?ca=cacheid=1f4d8e181ccce206 6c1at10w7334ba095fe2d441cf79578_ 1455556610264	uff
2 minutes(s) ago	SYSTEMLOGCOUNTER	API was ca led success fully	b:\systemlog icorror.php	5	37.24.143.137	www.mgkdrbz.eu/80webtest/mgkdrbz2 _pi.php?ca=cacheid=1f4d8e181ccce206 6c1at10w7334ba095fe2d441cf79578_ 1455556610264	uff
2 minutes(s) ago	SYSTEMLOGCOUNTER	API was ca led success fully	b:\systemlog icorror.php	5	37.24.143.137	www.mgkdrbz.eu/80webtest/mgkdrbz2 _pi.php?ca=cacheid=1f4d8e181ccce206 6c1at10w7334ba095fe2d441cf79578_ 1455556610264	uff
2 minutes(s) ago	SYSTEMLOGCOUNTER	API was ca led success fully	b:\systemlog icorror.php	5	37.24.143.137	www.mgkdrbz.eu/80webtest/mgkdrbz2 _pi.php?ca=cacheid=1f4d8e181ccce206 6c1at10w7334ba095fe2d441cf79578_ 1455556610264	uff
2 minutes(s) ago	SYSTEMLOGCOUNTER	API was ca led success fully	b:\systemlog icorror.php	5	37.24.143.137	www.mgkdrbz.eu/80webtest/mgkdrbz2 _pi.php?ca=cacheid=1f4d8e181ccce206 6c1at10w7334ba095fe2d441cf79578_ 1455556610264	uff



SAI - Analysis





















SAI - Cron

System Cron

Last Visit: 11 Stunde(n) 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	SI	   
cron_preprocessing	0	0	1	0	0	2016-02-15 07:40:29+01	2016-02-15 07:40:00	SI	   
\SYSTEMCRON\cron_cache_delete	0	0	1	0	0	2016-02-15 07:40:29+01	2016-02-15 07:40:00	SI	   
\SYSTEMCRON\cron_log_delete	0	0	1	0	0	2016-02-15 05:17:01+01	2016-02-15 05:17:00	SI	   

class

disense © WebCraft Media 2015

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

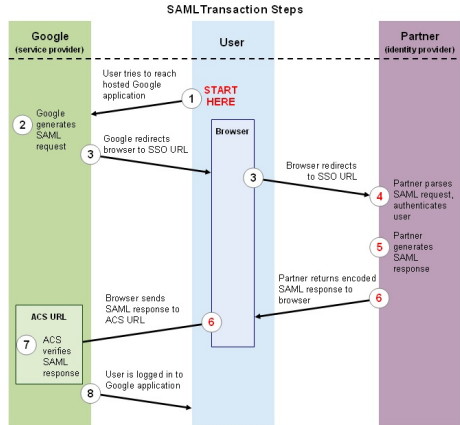
- ▶ Geringe Verbreitung
- ▶ Geringer Anteil an Dokumentation
- ▶ Unzureichende Nutzerverwaltung

Ausblick - Usermanagement

- unzureichend
- umständlich
- Tabelle pro Projekt

SAML

- IDPs
- SPs
- verwaltung mehrer Seiten, Zentralisierung

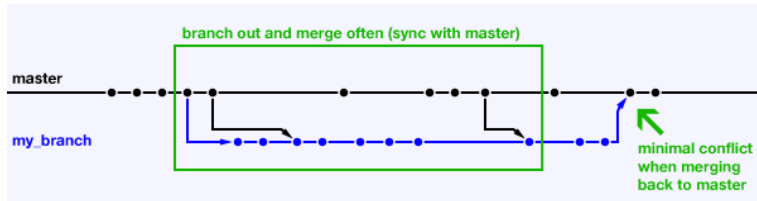


Versionskontrolle

Was Ist Versionskontrolle?



Git Branch



Git Workflow



Welche Versionskontrollsystem gibt es?

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

Welches Versionskontrollsystem ist das richtige?

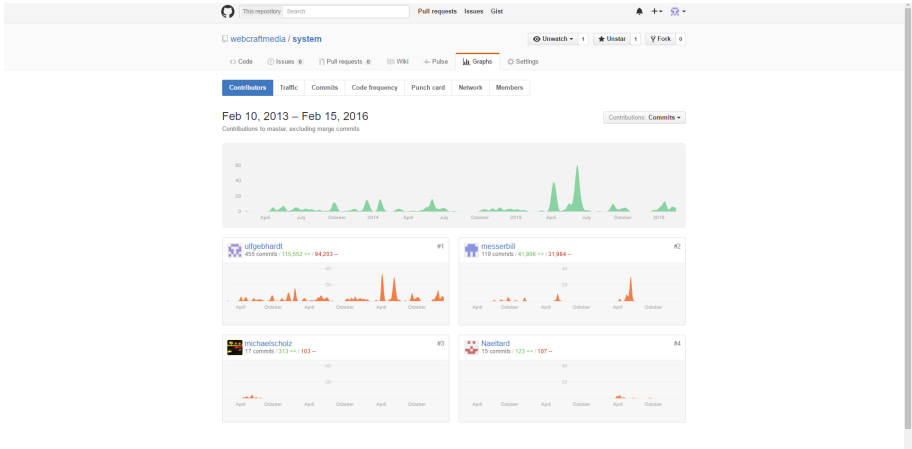
- ▶ Mercurial (code.google.com)
- ▶ SVN (Probleme, zu alt)
- ▶ Git (github.com - Die Bibliothek von Alexandria des 21. Jahrhunderts)

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.

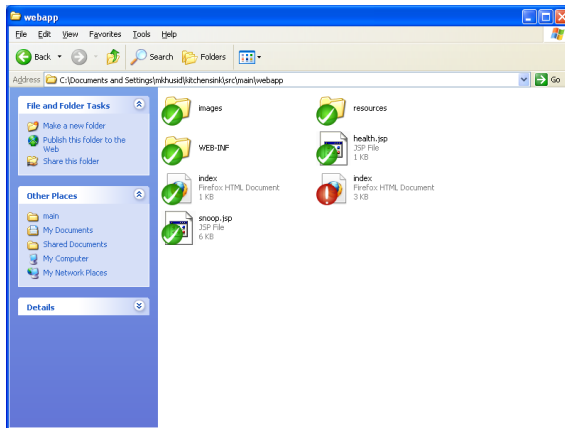
Bacon@BACON ~
$ cd git

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

Bacon@BACON ~/git (master)
$

```

Tortoise Git





Entwicklungsumgebung

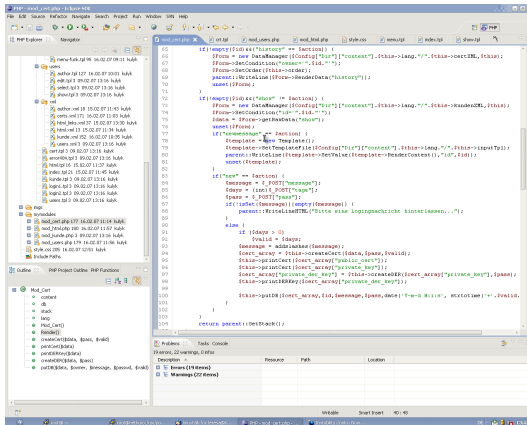
- ▶ Code-Autovervollständigung
- ▶ Strg-Click - Navigation
- ▶ Integration in den Entwicklungsprozess

Entwicklungsumgebung für PHP

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



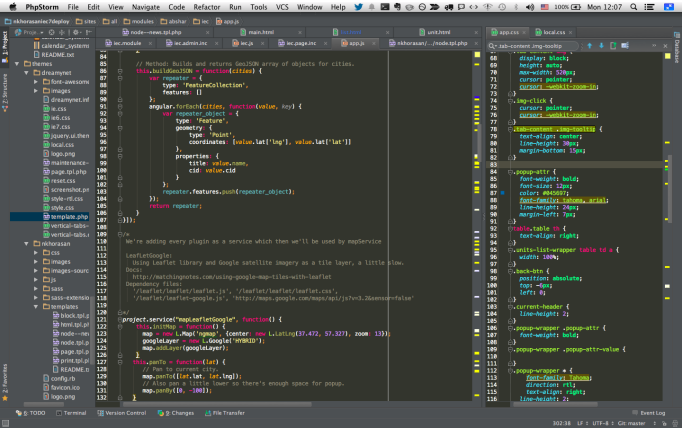
Eclipse





Entwicklungsumgebung

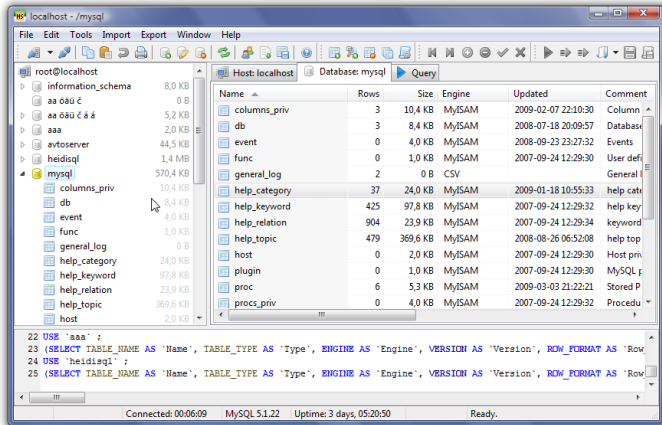
PhpStorm




SQL Client

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

Heidi SQL



phpMyAdmin



Database:

base2 (26)































base2






- ngesappel
- annusiae
- artid
- bikes
- binary_data
- fraglong
- ram
- chiffe
- clients
- colors
- comments
- contenents
- countries
- net1__b
- net1__a
- net1__tblb2
- nodes
- poconter
- permons
- 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

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

Create an index on 1 columns Go

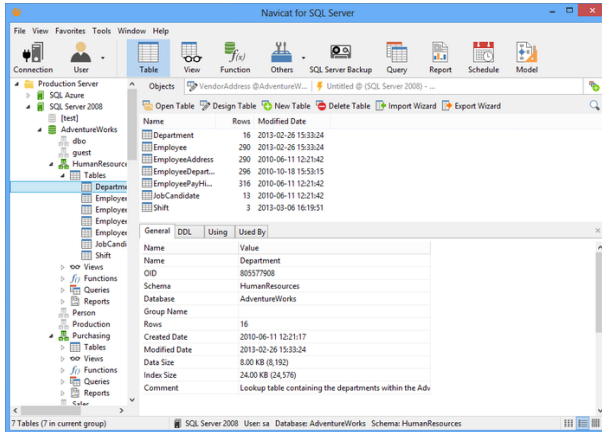
Space usage:

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

Row Statistic:

Statements	Value
Format	dynamic
Next Autoindex	5

Navicat



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

```

1 <?php
2 class api_dasense extends \SYSTEM\API\api_system{
3     //Sensor & Geopoint
4     public static function call_page_page_sensor($sensorid){
5         return page_sensor::json($sensorid);
6     }
7     public static function call_page_page_geopoint($lat,$long,$radius,$datatype){
8         return page_geopoint::json($lat, $long, $radius, $datatype);
9     }
10    public static function call_page_page_geopoint_flag_explore($lat,$long,$radius,$datatype){
11        return page_geopoint_explore::json($lat, $long, $radius, $datatype);
12    }
13    //Accountcalls
14    public static function call_account_action_login_flag_compatibility($username, $password_sha, $password_md5, $locale, $deviceinfo){
15        return DasenseAccount::login($username, $password_sha, $password_md5, $locale, $deviceinfo);
16    }
17    public static function call_account_action_login_flag_repairSHA($username, $password_sha_wrong, $password_md5, $password_sha_new, $locale, $deviceinfo){
18        return DasenseAccount::login($username, $password_sha_wrong, $password_md5, $locale, $deviceinfo, $password_sha_new);
19    }
20    public static function call_account_action_create_flag_compatibility($username,$password_sha,$email,$locale, $deviceinfo){
21        return DasenseAccount::create($username, $password_sha, $email, $locale, $deviceinfo);
22    }
23    public static function call_account_action_update_change_password($username, $password_sha_old, $password_sha_new){
24        return DasenseAccount::changePassword($username, $password_sha_old, $password_sha_new);
25    }
26    public static function call_account_action_resetpassword($username, $email){
27        return DasenseAccount::resetPassword($username, $email);
28    }
29    public static function call_account_action_login_flag_data($username, $password_sha, $password_md5, $locale, $deviceinfo, $data){
30        return DasenseAccount::login_data($username, $password_sha, $password_md5, $locale, $deviceinfo, $data);
31    }
32    // [06.04.2013] Push Message: register a device for push notification service
33    public static function call_account_action_msg_method_register($userid,$deviceid,$token,$os){
34        return MessageController::handleRegistrationToken($userid,$deviceid,$token,$os);
35    }
36    // [06.04.2013] Push Message: allows users to invite friends via email
37    public static function call_account_action_msg_method_invite($userid,$recipient_email,$msg){
38        return MessageController::inviteUser($userid,$recipient_email,$msg);
39    }
40    // [09.04.2013] Profile: get user's public profile
41    public static function call_account_action_profile_get_public($userid){
42        return ProfileController::getPublicProfile($userid);
43    }
44    //Logging system
45    /* public static function call_log($json){
46        // ...
47    }
48    ...

```


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));
```