

H-Sektionen: Developer Documentation

Introduction

This document describes the specifications and setup for H-Sektionen, and gives tips for H-sektionen developers.

What is H-Sektionen?

H-Sektionen is an Android application that provides information and useful links to students about H-sektionen and campus Lindholmen. Users can read news, see events, find lunch menus and get in touch with H-sektionen and support.

Getting started

Install Android SDK

If you do not already have Android SDK installed, download it on <http://developer.android.com/sdk/index.html> and install it.

Install Git

If you do not already have Git installed, go to <http://git-scm.com/> and install it.

Clone the git repository

```
git clone git://github.com/jonasberglund/skrubb_DAT255.git
```

Open project in Android SDK (Eclipse)

Import H-Sektionen by using File > Import > “Existing Android Code Into Workspace”. H-Sektionen is found under */your/git/repository/skrubb_DAT255/H-sektionen/*. The H-Sektionen project depends on “android-support-v7-appcompat”, which you have to import. Import appcompat via File > Import > “Existing Android Code Into Workspace” and find it under */your/git/repository/skrubb_DAT255/supportv7/appcompat/*.

Limitations & Capabilities

H-sektionen don't need Internet access to operate but the following activities will be limited or out of service until connection is reestablished.

Activity	Needs
Main (News)	Internet and server
Events	Internet
Lunch	Internet
Pub	Internet
Information	Internet and server
Suggest	email client
Faultreport	email client

Build Environment

- Android Developer Tools (ADT)
- Build: v22.2.0-822323
- <http://eclipse.org/>

Dependencies

- Java 7 SE
- Android SDK
- An Android device

Android Private Libraries

- android-support-v7-appcompat.jar
- Parse-1.3.0.jar
- Json_simple-1.1.jar
- android-support-v4.jar

Android Dependencies

- appcompat.jar

Server Requirements

- PHP 5.2
- Mysql 5.5.30-cll-lve
- Apache 2.2.22(Ubuntu)

Design Decisions

Android SDK targets

Because the application is targeted to all students with an Android phone, we decided to use SDK 8 as minimum and SDK 18 as the target. According to Android's webpage there could be a maximum of 0.7% users with an Android phone which uses a lower SDK than 8.

MVC

It is a natural design pattern to use when programming application for Android to separate the activities (controller) from the views (.xml-files) and the models (.java-classes).

PHP/MySQL

Why PHP/MySQL? - Because it is easy to setup and modify a PHP/MySQL and our application only needs a server that serves and forwards information.

Server side

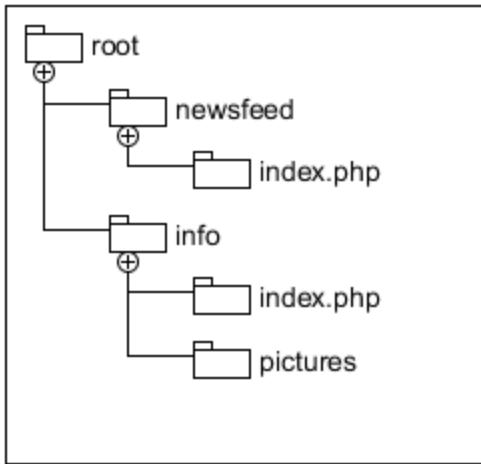
H-Sektionen uses an Apache server with MySQL and PHP to make the application dynamic and easy to manage.

Database

The database is a MySQL database and stores information used in the information view in the application. See Appendix 1 for the structure.

File structure

The following folder structure is used by the server.



Newsfeed

In the newsfeed folder you will find the index.php that is responsible for all communication with Facebook's servers. The communication with Facebook servers is accomplished by exchanging our app id and secret id to facebook. In exchange Facebook send us a token which we use to request the H-sektionen news feed. The newsfeed will be sent to us in JSon format.

H-sektionen Facebook page id is: **109143889143301**

For application id and secret id log into Facebook developers. Contact Styret at Chalmers Lindholmen, styret@htek.chalmers.se for login information to Facebook developers.

Info

The "info" folder contains a php file, "index.php" and a sub folder, "pictures". The php file fetches information from the database and creates a JSON formatted string containing the information (links, opening hours and board members).

Building and installing

An H-sektionen.apk will be created by the ADT. If the ADT is connected to an Android device the H-Sektionen will start automatically.

Tests

Manually test are in the form of .md files with step by step instructions on how to perform the test including “definition of success” described in the test file.

There are also a few JUnit tests, which in general test the server.

All tests are located in the Test package under “src”.

Test libraries

- JUnit 4.10

Testing

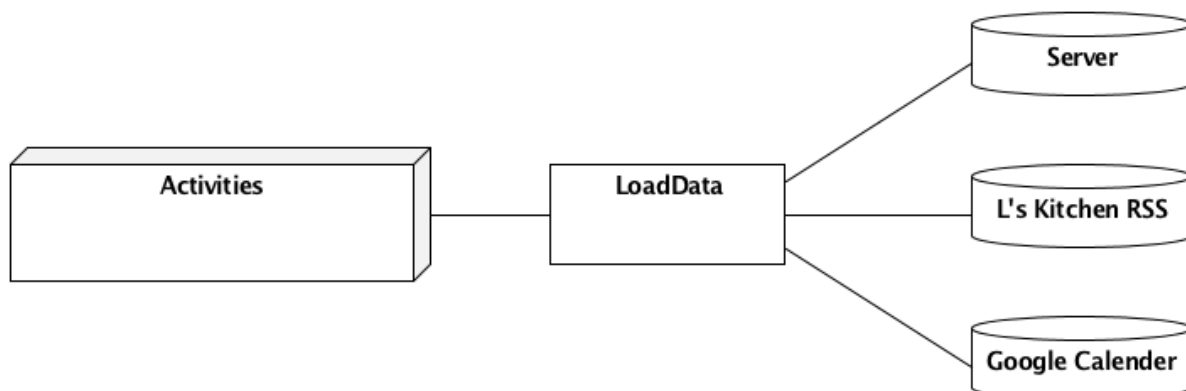
Follow the steps in the .md-files to make sure that the application work properly. The JUnit tests are tested using Eclipse.

Architecture

All activity-classes uses the class LoadData to get their data. The class itself contains a method that makes a HTTP GET request to a given url to retrieve data and methods for parsing the data to the different activities.

The data is retrieved from the following locations:

- **News / MainActivity** - Server
- **Info / InfoActivity** - Server
- **Events / EventsActivity** - Google Calender (Styret)
- **11:an / PubActivity** - Google Calender (PubF)
- **Lunch / LunchActivity** - L's Kitchen RSS



For more detailed class diagrams see the UML folder in Documentation.

Known Bugs

- In News view images may appear temporarily in the wrong post while the application is loading images from Internet. The images are loaded in a background thread and displayed in the post when loading is completed. But in some cases the view displaying the initial post has already expired and now has the purpose of displaying another post which leads to the image being displayed in the wrong post until the view is called again.
- When loading new posts in the News view you might need to scroll to the bottom of the list multiple times to get new posts. This is because the application gets posts from the server in a time interval of three weeks. If the application requests a time interval (mainly during summer months) where no posts were made it will not receive any posts. When this happens you need to scroll to the bottom again to get the next three weeks of posts until you reach a time interval that actually contain posts.
- When expanding an event in the pub or event view it sometimes instantly collapses again.

Not implemented functionality

- Switching back to a previously accessed view will not require data to be downloaded again.
- No ability to click on links in news view.
- No ability to click or copy the contact information from the members of Styret.

Appendix 1

Database documentation

The server side of the Android Application, H-Sektionen, uses PHP and MySQL. Below, you can see the structure of the database. The name of the database is 'hsektionen'.

hsektionen

Table name	Type	Collation
members	InnoDB	utf8_general_ci
links	InnoDB	utf8_general_ci
openinghours	InnoDB	utf8_general_ci

members

#	Column	Type	Collation	Null	Default	Extra
1	id	int(11)		No	None	AUTO_INCREMENT
2	name	varchar(255)	utf8_general_ci	No	None	
3	email	varchar(255)	utf8_general_ci	No	None	
4	position	varchar(255)	utf8_general_ci	No	None	
5	picture	varchar(255)	utf8_general_ci	No	None	
6	phone	varchar(255)	utf8_general_ci	No	None	

links

#	Column	Type	Collation	Null	Default	Extra
1	id	int(11)		No	None	AUTO_INCREMENT
2	name	varchar(255)	utf8_general_ci	No	None	
3	href	varchar(255)	utf8_general_ci	No	None	

openinghours

#	Column	Type	Collation	Null	Default	Extra
1	id	int(11)		No	None	AUTO_INCREMENT
2	name	varchar(255)	utf8_general_ci	No	None	
3	opentime	varchar(255)	utf8_general_ci	No	None	