



# DHIS2 Installation and Web API

INF5750/9750 - Lecture 9 (Part I)

# Lecture contents

- DHIS 2 Installation for developers
- Basic Features of DHIS2
  - (mostly covered in Lect 5.B)
- DHIS2 Web API Resources
- Authentication and CORS

# DHIS2 installation (for devs)

- Get code from bzd branch (trunk? or stable?)
  - bzd branch lp:dhis2
- Build projects
  1. dhis2 (api, services, support)
  2. dhis2-web (commons, web modules)
  3. mvn jetty:run dhis-web-portal
- My default deployed in H2 in memory. Let us define hibernate.properties
- Deploy through jetty/tomcat

# DHIS2 Features Overview

- Aggregate data
  - Routine data
  - Surveys
- Events
  - Tracker
  - Individual records
  - Cases
  - Programs

# DHIS2 Aggregate & Tracker

## Aggregate system

- Data management
  - Data elements
  - Categories
  - Indicators
  - Data sets
  - Organisation units
- User management
  - Users
  - User roles
- Data analytics
  - Pivot tables
  - Charts
  - GIS
  - Dashboard
  - Interpretations
- Messages

## Tracker system

- Programs and stages
- Persons
  - Attributes
  - Identifiers
  - Lost to follow-up support and reminders
  - Visit schedule
- Aggregation queries
- From events to aggregate numbers
- Anonymous events
- Analytics
  - Tabular report
  - Overview of events
  - Ad-hoc aggregation

Who gets sick?

Who gets sick?

with what?

where?

when?

why?



for whom?

where?

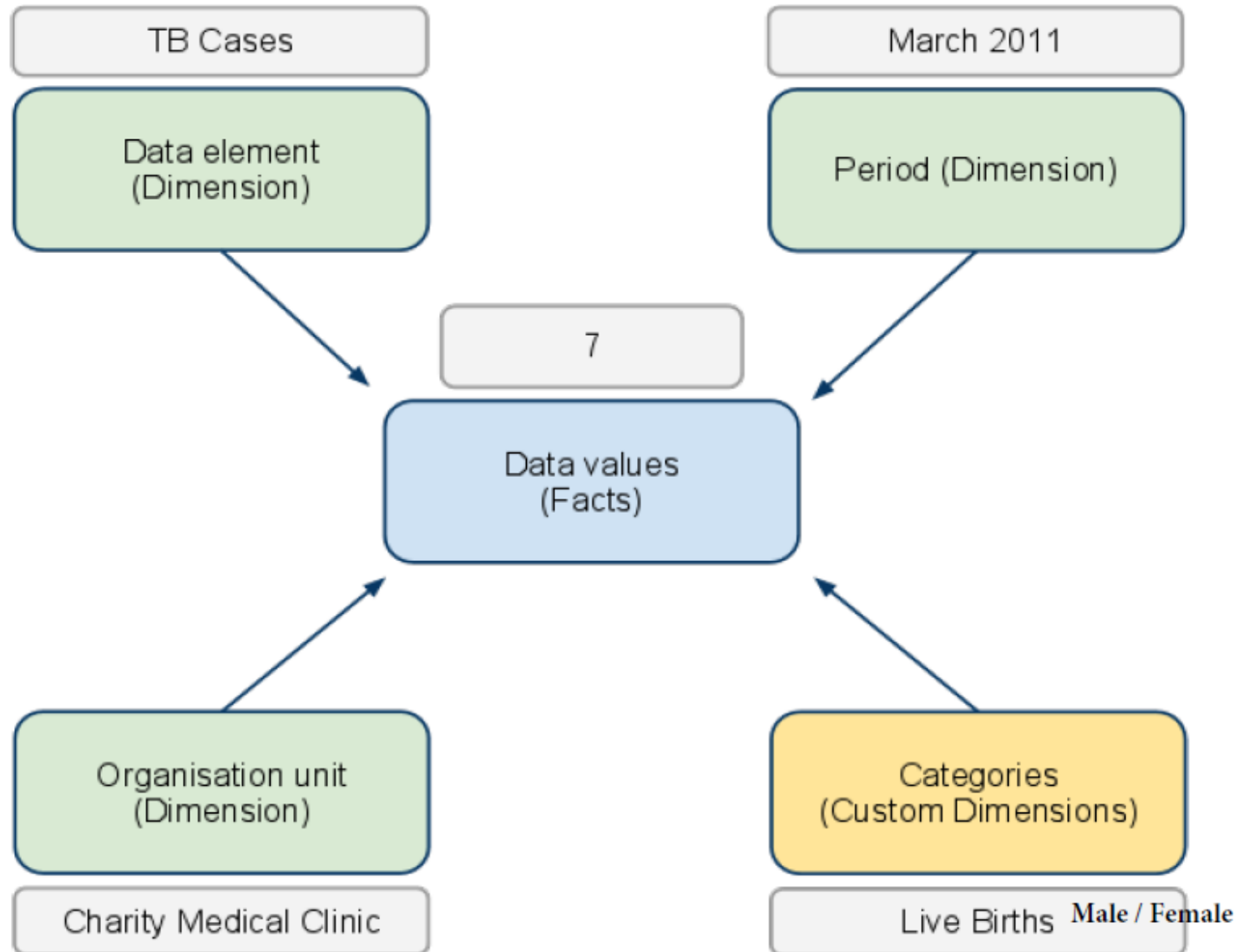
when?

why?

how much?

What health services exist?

# Data Storage: Dimensional Approach



# DHIS2 Web API

- A RESTful (?) web service in DHIS2
  - /api/resources - lists all the available resources
- Basic authentication
  - Pass Base64 encoded “Basic user:pass” in the value of the Authorization HTTP header
- Web API with 6 representation mimeTypes
  - html, xml, json, jsonp, pdf, csv
- GET datavalue
- POST datavalue



# Selecting Formats

Two ways of selecting format:

- Extensions .json, .xml, etc
- Using headers:
  - “I want you to send me this format”:
    - Accept: format
    - application/xml
    - application/json
  - “I am sending you this format”:
    - Content-Type: format
    - application/xml
    - application/json

# Date and Period formats

Date format: `yyyy-MM-dd` (e.g. 2013-06-10 for June 10)

Interval	Format	Example	Description
Day	yyyyMMdd	20040315	March 15 2004
Week	yyyyWn	2004W10	Week 10 2004
Month	yyyyMM	200403	March 2004
Quarter	yyyyQn	2004Q1	January-March 2004
Six-month	yyyySn	2004S1	Janary-June 2004
Year	yyyy	2004	2004

# Form-based authentication

- Based on cookies

```
jQuery(document).ready(function() {  
    $.post( "localhost/dhis-web-commons-security/login.action", {  
        j_username: "admin", j_password: "district"  
    }  
    );  
});
```

- Plain-text username/password exposed as part of your JS source code

# Basic Authentication and CORS

- DEMO
- CORSFilter - Tomcat 7
  - [http://tomcat.apache.org/tomcat-7.0-doc/config/filter.html#CORS\\_Filter](http://tomcat.apache.org/tomcat-7.0-doc/config/filter.html#CORS_Filter)

# Resources

- Some implementer installation details:
  - <http://www.dhis2.org/doc/snapshot/en/implementer/html/ch08.html>
- Intro to DHIS2 database
  - <http://www.dhis2.org/doc/snapshot/en/user/html/ch02s05.html>
- DHIS2 Web API
  - <http://www.dhis2.org/doc/snapshot/en/user/html/ch25.html>