

SPYNdoctors

CS6440 – Intro to Health Informatics.

Fall 2017

Team Final Project Presentation (D4)

<https://www.youtube.com/watch?v=cGw8dtY2P3Y>

Nargis Bisset – Project Manager/QA Engineer

Arjun Puri – Project Manager/QA Engineer

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Project

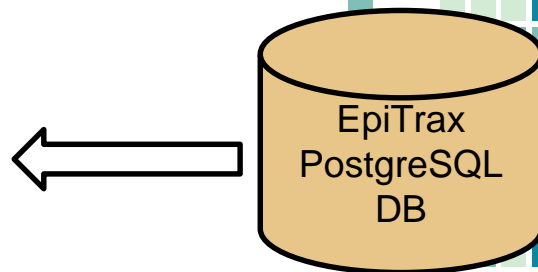
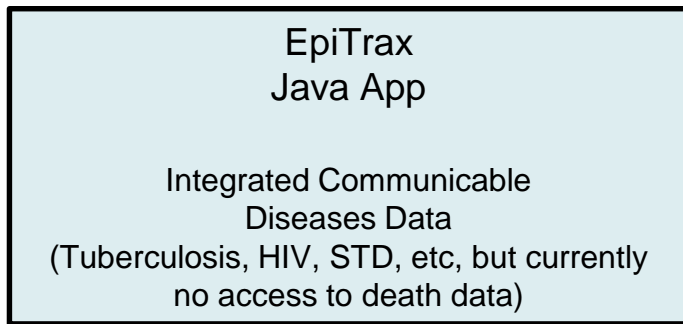
MASTER PERSON INDEX (DOHMPI) WHICH AIDS WITH DE-DUPLICATION AND MAINTAINING CONSISTENT ID FOR ITS DATA SOURCES; SUCH AS THE DEATH INFORMATION SYSTEM, EDEN

Project Mentors

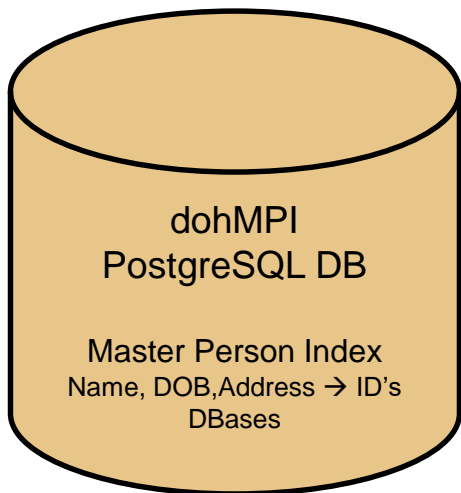
Utah Department of Health
Dr. Kailah Davis
Dr. Jeffrey Duncan



Project Background and Goal

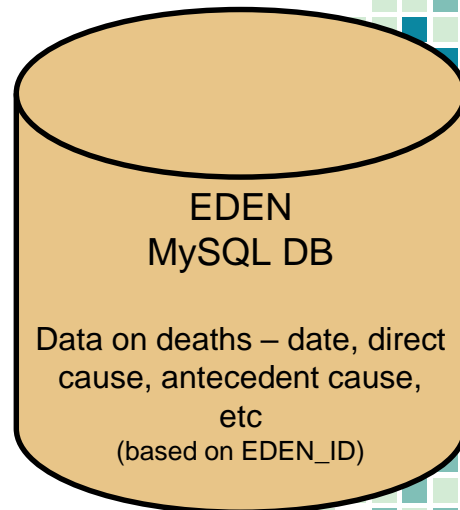


Only person index, no health data



Is covered by dohMPI: dohMPI
Contains EDEN_ID among its ID's

Goal of the project:
Provide access to death data
for EpiTrax users



Project requirements: Input and Output

Input fields:

- First name*
- Last name*
- Date of birth*
- Gender*
- Address (Street number)*
- Address (Street name)*
- Address (Apartment number)
- City
- Zip code
- Phone number

Fields with * plus fields with either * or * are required.

Output:

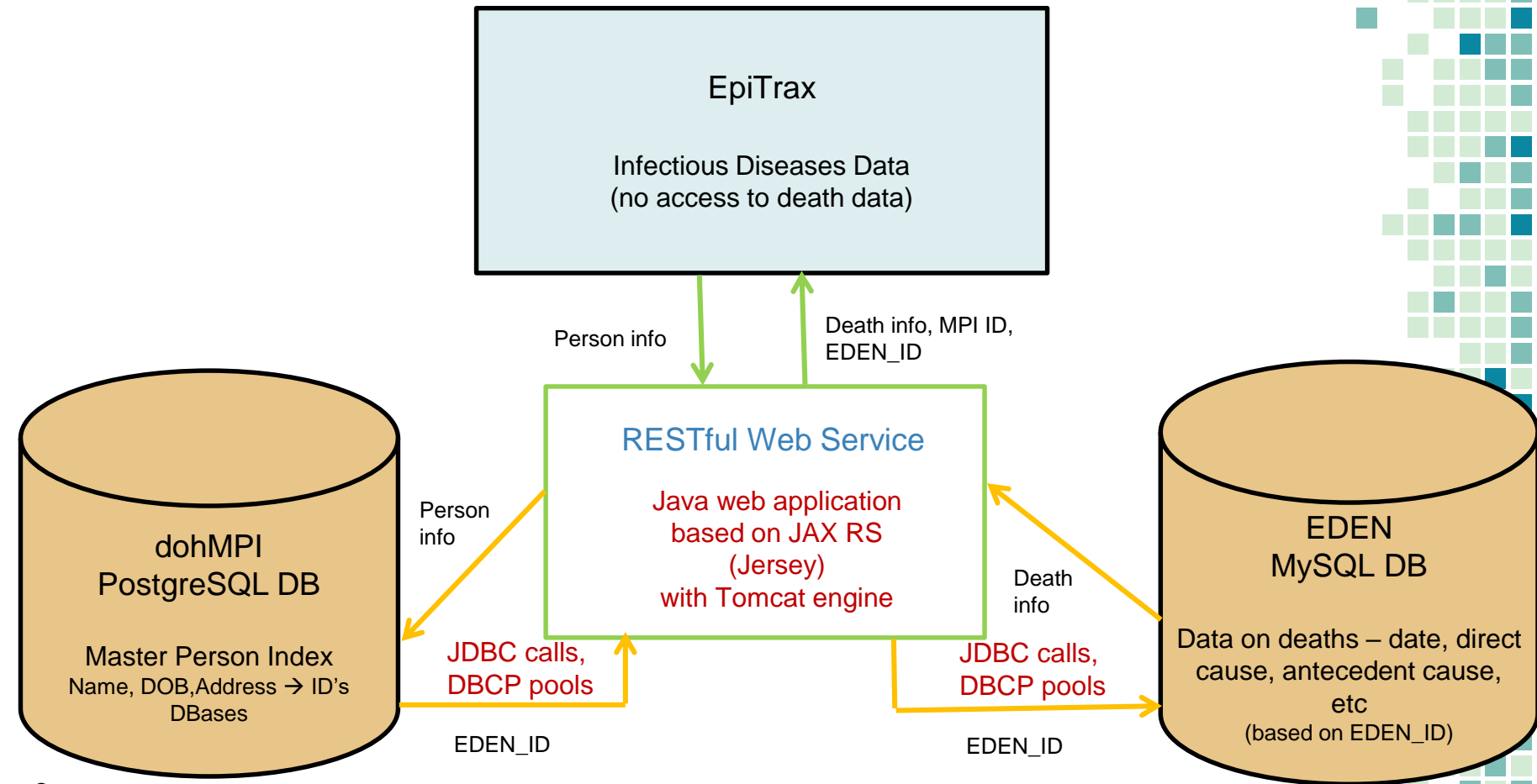
XML string:

contents depends on matching success

Will report matching status and, in case of successful matching, “golden” MPI personal data, MPI_ID, and death info from EDEN



Technical Implementation



RESTful API

Operations for /match

Show/Hide | List Operations | Expand Operations | Raw

GET /match/first_name/{first_name}/last_name/{last_name}/gender/{gender}/date_of_birth/{date_of_birth} getResult()

http://localhost:8888/DohMPI_EDEN/rest/match/first_name/{first_name}/last_name/{last_name}/gender/{gender}/date_of_birth/{date_of_birth}

Parameters

template params

gender	string
date_of_birth	string
last_name	string
first_name	string

Responses

status:
200 - OK
representations
application/xml ServiceResult

POST /match getResult()

http://localhost:8888/DohMPI_EDEN/rest/match

Parameters

representations
application/x-www-form-urlencoded

query params

first_name	string
last_name	string
gender	string
date_of_birth	string
street_number	string
street_name	string
apartment	string
city	string
zip	string
phone	string

Responses

status:
200 - OK
representations
application/xml ServiceResult

Browser Client: Input and Output

Mozilla Firefox
http://localhost:8888/DohMPI_EDEN/

Enter Personal Data for DOH MPI matching

First name:*

Last name:*

Date of birth (MM/DD/YYYY):*

Gender:**

Address. Street number:**

Address. Street name:**

Address. Unit/Apt number:

Address. City:

Address. Zip code:

Phone Number (10 digits; no other chars) :

* Required field

** Either gender or both Street number and Street name are required

Mozilla Firefox
localhost:8888/DohMPI_EDEN/rest/match

This XML file does not appear to have any style information associated with it. The document tree is

```
<ServiceResult>
  <ResponseStatus>DohMPI: Match successful. EDEN: Match successful.</ResponseStatus>
  <FirstName>CARRIE</FirstName>
  <LastName>WHITE</LastName>
  <Gender>F</Gender>
  <DateOfBirth>06/22/1969</DateOfBirth>
  <MPI_ID>1162</MPI_ID>
  <Is_Deceased>true</Is_Deceased>
  <DateOfDeath>08/31/2016</DateOfDeath>
  <Address>4359SOUTHELMSTREET</Address>
  <City>SALTLAKECITY</City>
  <Zip>84114</Zip>
  <Phone>
  <AddressLastChangedOn>2017-10-20 10:50:15</AddressLastChangedOn>
  <ImmediateCause>Multiple Stab Wounds To Torso And Neck</ImmediateCause>
  <AdditionalCause1>
  <AdditionalCause2>
  <MannerOfDeath>4</MannerOfDeath>
  <UnderlyingCause>
  <UnderlyingCode>
  <ContribCode1>
  <ContribCode2>
  <ContribCode3>
  <ContribCode4>
  <ContribCode5>
  <ContribCode6>
  <ContribCode7>
  <ContribCode8>
  <ContribCode9>
</ServiceResult>
```


Java Application Client: Input and Output

DohMPI-EDEN Client Application

Enter service base URL:

First Name: Street Number:

Last Name: Street Name:

DOB(MM/DD/YYYY): Apartment:

Gender: City:

Phone: Zip:

```
<?xml version="1.0" encoding="UTF-8"?>
<ServiceResult>
  <ResponseStatus>
    DohMPI: Match successful. EDEN: Match successful.
  </ResponseStatus>
  <FirstName>
    Carrie
  </FirstName>
  <LastName>
    White
  </LastName>
  <Gender>
    F
  </Gender>
  <DateOfBirth>
    06/22/1969
  </DateOfBirth>
  <MPI_ID>
    1162
  </MPI_ID>
  <Is_Deceased>
    true
  </Is_Deceased>
  <DateOfDeath>
    08/31/2016
  </DateOfDeath>
  <Address>
    4359SOUTHELMSTREET
  </Address>
  <City>
    SALT LAKE CITY
  </City>
  <Zip>
    84114
  </Zip>
  <Phone/>
  <AddressLastChangedOn>
    2017-10-20 10:50:15
  </AddressLastChangedOn>
  <ImmediateCause>
    Multiple Stab Wounds To Torso And Neck
  </ImmediateCause>
  <AdditionalCause1/>
  <AdditionalCause2/>
  <MannerOfDeath>
    4
  </MannerOfDeath>
  <UnderlyingCause/>
  <UnderlyingCode/>
  <Cont ribCode1/>
  <Cont ribCode2/>
  <Cont ribCode3/>
  <Cont ribCode4/>
  <Cont ribCode5/>
```

Deployment Details

- Deployed as DohMPI_EDEN.war file to be expanded and launched on the startup of Java web container.
- Should be compatible with any Java web containers, e.g. Tomcat, JBoss/WildFly, GlassFish, etc.
- Developed and tested with Tomcat.
- Configured with the help of matcher.properties file providing connection details for all databases.
- Location of the properties file is communicated to container with the help of environment variable, e.g. setting CATALINA_OPTS for Tomcat or JAVA_OPTS for JBoss to -DMatcherPropertiesFilePath=/usr/local/tomcat/matcher.properties

matcher.properties file example:

```
-----  
dohMPIhost=postgresdb  
dohMPIport=5432  
dohMPIuser=postgres  
dohMPIpassword=cs6440  
dohMPIdatabase=postgres  
EDENhost=mysqlpdb  
EDENport=3306  
EDENuser=edenuser  
EDENpassword=cs6440  
EDENdatabase=eden  
dohUnmatchedHost=postgresdb  
dohUnmatchedPort=5432  
dohUnmatchedUser=postgres  
dohUnmatchedPassword=cs6440  
dohUnmatchedDatabase=postgres  
-----
```

Submission for Grading (using Docker)

Four images are pulled from hub.docker.com and spinned up into containers via “docker-compose up” command:



Postgres, DohMPI

- Postgres database pre-populated with schema and test data simulating DohMPI



MySQL, EDEN

- MySQL database populated during “docker-compose up” operation with schema and test data simulating EDEN



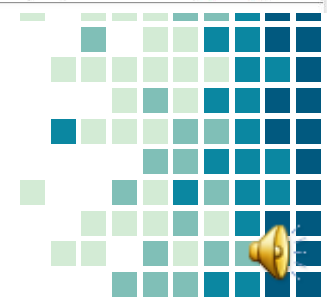
Tomcat, DohMPI_EDEN

- Tomcat running DohMPI_EDEN web application



Ubuntu, DohMPI_EDEN_Client

- Ubuntu instance running Java stand-alone DohMPI_EDEN_Client application



THANKS!

