DEVELOPING SIO PEOPLEDB3

Scripps IT, Web Operations

R/V Sally Ride, Anacortes, Washington. Credit: Jeff Dillon.
OR, DATABASES IN THE TIME OF VIRTUALIZATION

Scripps IT, Web Operations

Credit: Octavio Aburto
7 Minutes

• Old system
• New system
• How it was made
• What we would have done differently
What are we talking about?

- A database of all the people who are involved with the Scripps Institution of Oceanography
- Cross linked to all other apps at SIO
OLD APP

SIO PEOPLEDB 2

- Native PHP5 app
- MySQL storage with about 75% data in key/value pair table
- Interaction with other apps: MySQL queries
So what was wrong with it?

- complicated integration
- difficult queries
- no permissions
- scaling issues
NEW GOALS

Separate API and front end

Document based storage model

Virtualization and full stack development
Database: MongoDB Shards
Back end: Symfony
Communication: JSON
Front end: Angular
Virtualization: Atomic Host / Docker Swarm
Auth: Google OAuth2 / JWT / Duo
DOCKER SWARM

DEV (personal machine)

DOCKER
- Mongo
- Symfony
- Angular
- (etc)

STAGE

RedHat Atomic

DOCKER
- Mongo
- Symfony
- Angular
- (etc)

PROD

Separate VMs

DOCKER
- Symfony
- Angular
- ID server
- MySQL (auth)

- Mongo 1
- Mongo 2
- Mongo 3
Record:

{ _id: "4ij83ong98o34noutr",
  name: "Grzegorz Brzęczyszczykiewicz",
  email: ["g2brzecz@ucsd.edu",
          "greg_b@ucsd.edu"],
  etc etc}
FROM

... LEFT JOIN
sio_people.people_values AS pv
ON (p.people_id = pv.people_id AND pv.field = "nickname")

LEFT JOIN
sio_people.people_values AS pv2
ON (p.people_id = pv2.people_id AND pv2.field = "known_as")

TO
db.records.find({_by:"studentimport"})
<?php
namespace AppBundle\Controller;

/**
 * Controller in charge data output and mongo/API interactions.
 */

use Sensio\Bundle\FrameworkExtraBundle\Configuration\Route;
use Sensio\Bundle\FrameworkExtraBundle\Configuration\Method;
use Symfony\Bundle\FrameworkBundle\Controller\Controller;
use Symfony\Component\HttpFoundation\Request;
use Symfony\Component\HttpFoundation\Response;
use Symfony\Component\HttpFoundation\JsonResponse;
use AppBundle\Entity\Field;
use AppBundle\Entity\Module;
use AppBundle\Entity\Affiliation;
use AppBundle\Entity\User;
use AppBundle\Entity\Permission;
use AppBundle\Entity\ResultSet;
use AppBundle\Entity\Filter;
use AppBundle\Entity\Notification;
use AppBundle\Entity\Translator;
use Doctrine\ORM\EntityManagerInterface;
use Doctrine\Common\Persistence\ManagerRegistry;
use MongoDB\Client;
use MongoDB\Driver\Manager;
use MongoDB\Driver\Command;
use MongoDB\Driver\BulkWrite;
use MongoDB\Driver\Query;
use MongoDB\Driver\ReadPreference;
use MongoDB\BSON\Regex;
use MongoDB\BSON\UTCDateTime;
use MongoDB\BSON\ObjectId;
use MongoDB\BSON\fromPHP;
• JSON output
• Google Auth + Duo 2 factor
• ORM for internal user database
• Custom handlers for MongoDB
• Permissions for each field
• Unit tests
// angular core stuff
import { Location } from '@angular/common';
import {
  Component,
  HostListener,
  OnInit,
  SecurityListener
} from '@angular/core';
import {
  FormBuilder,
  FormControl,
  FormGroup,
  Validators
} from '@angular/forms';
import { DomSanitizer } from '@angular/platform-browser';
import { ActivatedRoute, Params, Router } from '@angular/router';

// third-party modules
import { ScrollToService } from 'ng2-scroll-to-el';

// third-party helpers
import { Observable, EMPTY } from 'rxjs';
import { switchMap } from 'rxjs/operators';

// custom services
import {
  AlertService,
  AuthenticationService,
  DataService,
  DevlogService,
  OverlayService,
  PeopleAPIService
} from '../core/services';

// custom guards
import { ComponentCanDeactivate } from '../core/guards/unsaved-changes.guard';

// custom models
SIo Web Apps Login

Choose an authentication method

What is this? Can I need help?

Duo Push, used automatically: Send Me a Push
Call Me: Call Me
Passcode: Enter a Passcode
Remember me for 12 hours:

Pushed a login request to your device...
SIO People DB

An SIO-centric repository of data across all divisions, the Department, the Director's office, SOMTS, Sea Grant, and the Birch Aquarium.

Resources
Training for beginners and experts.
Schedule Training

Reporting
Canned and ad hoc reports.
Go to reports

Create Record
Available for affiliates only.
Create record

Leadership
Current leadership status at SIO.
View list

Recent Activity
No recent activity.

Recent Updates
June 10, 2019
- Reports page: Relationship columns display names correctly

June 6, 2019
- Speed improvements in showing the Reports page

Data Stewards
- admin@ucsd.edu
- admin@ucsd.edu
### Report: Active Records

#### Filters
- Canned Reports

#### Record Status
- Active

#### Employment / HR
- SIO Role
- SIO Business Office
- Home Dept
- Display Title
- Appointment Title
- Census Category
- RIP Report Category
- Relationships

#### Columns
- Employment
- Relationships
- Hiring
- Personal
- Education
- Leadership
- Research

#### Results
2786/15155 results

- [Bookmark this report](#)
- [Export this report to CSV](#)
- [Export this report to PDF](#)

<table>
<thead>
<tr>
<th>Full Name</th>
<th>Department Affiliation(s)</th>
<th>Email</th>
<th>SIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Active</td>
<td>ICPP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Active</td>
<td>IGCC, MPL, Physics, SCH ENG</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Active</td>
<td>ICPP</td>
<td></td>
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### Report: Active Records

#### Columns
- Employment
- Relationships
- Hiring
- Personal
- Education
- Leadership
- Research

#### Results
1/15155 results

<table>
<thead>
<tr>
<th>Full Name</th>
<th>Supervisor(s)</th>
<th>Department Affiliation(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MILIK, EDGAR JAN</td>
<td>GONZALEZ, LUCY</td>
<td>SIO/DO</td>
</tr>
</tbody>
</table>

- [Bookmark this report](#)
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- [Export this report to PDF](#)

- Previous 1 Next »

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**SiO People DB**

Find someone by name, employee ID, or email address
How was it done?
How was it done?

- JIRA
- git
- Bitbucket
- Docker Cloud
- PHP Unit
- Slack (with bots)
HOW WAS IT DONE

[Image of a software project page showing open issues and a specific issue titled "missing visa for"]

Description:

Despite being in the PPS upload, the data is missing in record.

Checklists:

None

Activity:

Add a comment...
<table>
<thead>
<tr>
<th>Author</th>
<th>Commit</th>
<th>Message</th>
<th>Date</th>
<th>Builds</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tomohisa Kusano</td>
<td>39c4c78</td>
<td>Merged in delete-require-master (pull request #128)</td>
<td>2019-06-11</td>
<td></td>
</tr>
<tr>
<td>Tomohisa Kusano</td>
<td>48846b4</td>
<td>/admin/deleteVersion requires master</td>
<td>2019-06-11</td>
<td></td>
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<tr>
<td>Edgar Milik</td>
<td>7f98fde</td>
<td>Merged in permissions-addingBlackmon (pull request #127)</td>
<td>2019-06-30</td>
<td></td>
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<tr>
<td>Edgar Milik</td>
<td>a97185c</td>
<td>synced to the spreadsheet as of 2019-06-30</td>
<td>2019-06-30</td>
<td></td>
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<tr>
<td>Edgar Milik</td>
<td>@8a15f5</td>
<td>added</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Michael Chadwick</td>
<td>1824597</td>
<td>Merged in PEOPLE-819-google-drive-api (pull request #126)</td>
<td>2019-06-23</td>
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<tr>
<td>Michael Chadwick</td>
<td>d4d49f8</td>
<td>added method to get google api key and test for it</td>
<td>2019-06-23</td>
<td></td>
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<tr>
<td>Michael Chadwick</td>
<td>2398c31</td>
<td>added getGoogleKey endpoint</td>
<td>2019-06-23</td>
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<tr>
<td>Pipeline</td>
<td>Status</td>
<td>Started</td>
<td>Duration</td>
<td></td>
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<td>#794</td>
<td>Successful</td>
<td>14 days ago</td>
<td>14 min 3 sec</td>
<td></td>
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<td>14 days ago</td>
<td>16 min 5 sec</td>
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<tr>
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<td>Successful</td>
<td>a month ago</td>
<td>16 min 38 sec</td>
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<td>13 min 6 sec</td>
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<td>a month ago</td>
<td>14 min 46 sec</td>
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<td>a month ago</td>
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<tr>
<td>#785</td>
<td>Successful</td>
<td>a month ago</td>
<td>14 min 3 sec</td>
<td></td>
</tr>
</tbody>
</table>
HOW WAS IT DONE
HOW WAS IT DONE

08:03 Bitbucket Cloud APP

✔️ Pipeline #714 passed for master @ 21c60c0 by @mchadwick

Michael Chadwick

21c60c0 Merged in PEOPLE-837-report-cell-overload (pull request #151)

SIO People Front End

08:04 Michael Chadwick @sioatomic deploy people3.angular prod-714

08:04 sioatomic APP 🔄 Deployed docker.io/scrippsit/people3-angular:prod-710

Id: 258e7b17fedece811a6e499f1811d3e36c07407ed89b93d797310c8d25895143
Name: people3.angular.2.ohcl31jd7y0r75lb9tzg7uq6v
Image: 'docker.io/scrippsit/people3-angular:prod-710'
State: running
Status: 'Up 8 days'

Show more
Things we would do next time

- Front end tests
- Generally more tests
- Test driven development
- Live data testing
Scripps IT, Web Operations is:

Lucina Gonzalez (supervisor)
Edgar Milik (programming lead)
Michael Chadwick (programmer)
Tomohisa Kusano (programmer)
Gabe Castillo (sysadmin)
Nate Huffnagle (sysadmin)
Luis Avila (database design)
WE ARE CONTRACTUALLY OBLIGATED TO END WITH A PHOTO OF THE PIER.

THIS IS THE PIER.