Salesforce Database Migration / Digitizing the Employee Onboarding Process

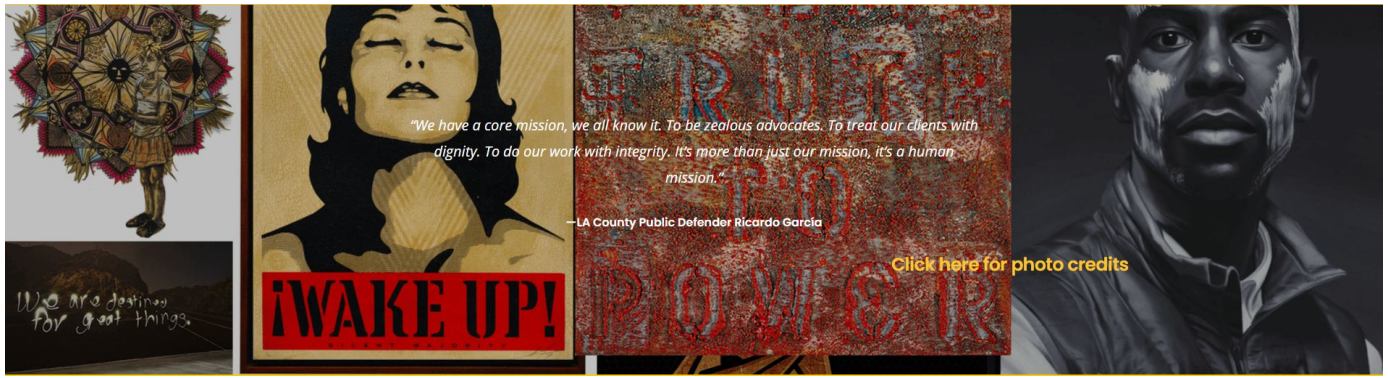
Presented by: Rawad Moussa, Tabassuma Torosa, Adrian Palomares, Paul Clef Ube, Audelia Valdovinoz, Javier Garcia, Pierce Wei, Marlito Refuerzo, Christopher Rodriguez

Sponsored by: Los Angeles County Public Defender
Liaisons: Mohammed Al Rawi & Gratia Dsouza
Project Advisor: Dr. Chengyu Sun

Pierce Wei

Los Angeles County Public Defender's Office

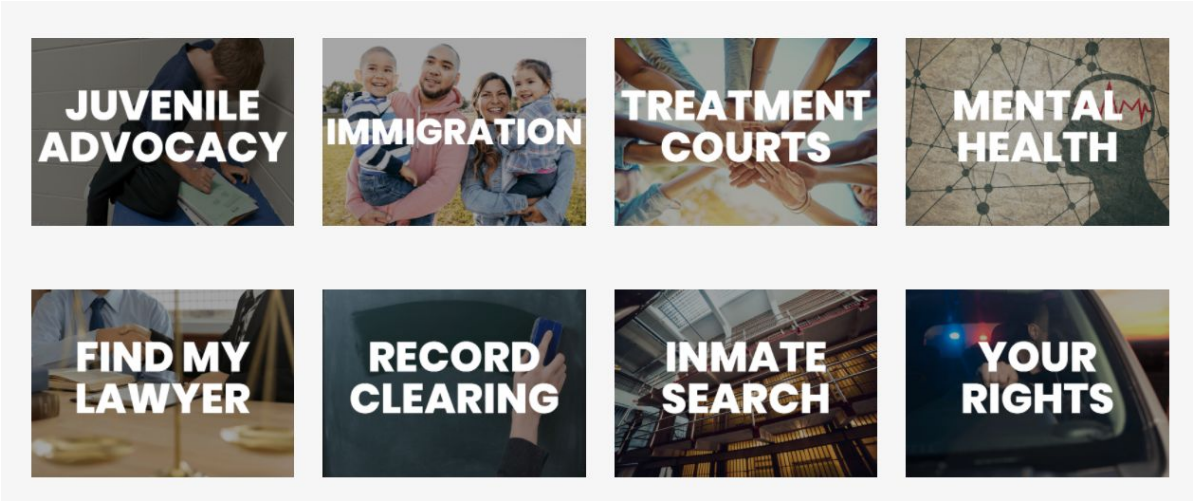
- Widely considered the finest client-centered criminal defense firm in the nation, working to reduce incarceration and the collateral consequences of contact by 2025
- Provides treatment courts, juvenile advocacy, immigration, mental health assistance mainly for criminals
- Giving back to community and representing minorities that are often overlooked



Pierce Wei

Los Angeles County Public Defender's Background

- 32 offices located throughout the country, team of more than 1,200 employees, 700 attorneys, and more staff composed of:
  - Paralegals, investigators, psychiatric social workers, and admin/support staff
- Shows that there is a need for a good IT system for people doing important work



Pierce Wei

Project Overview

Project 1 (HOLD): Migrate legacy content management system and databases to Salesforce.

- Currently this project is on hold because the PD IT staff are busy with a new system going online.

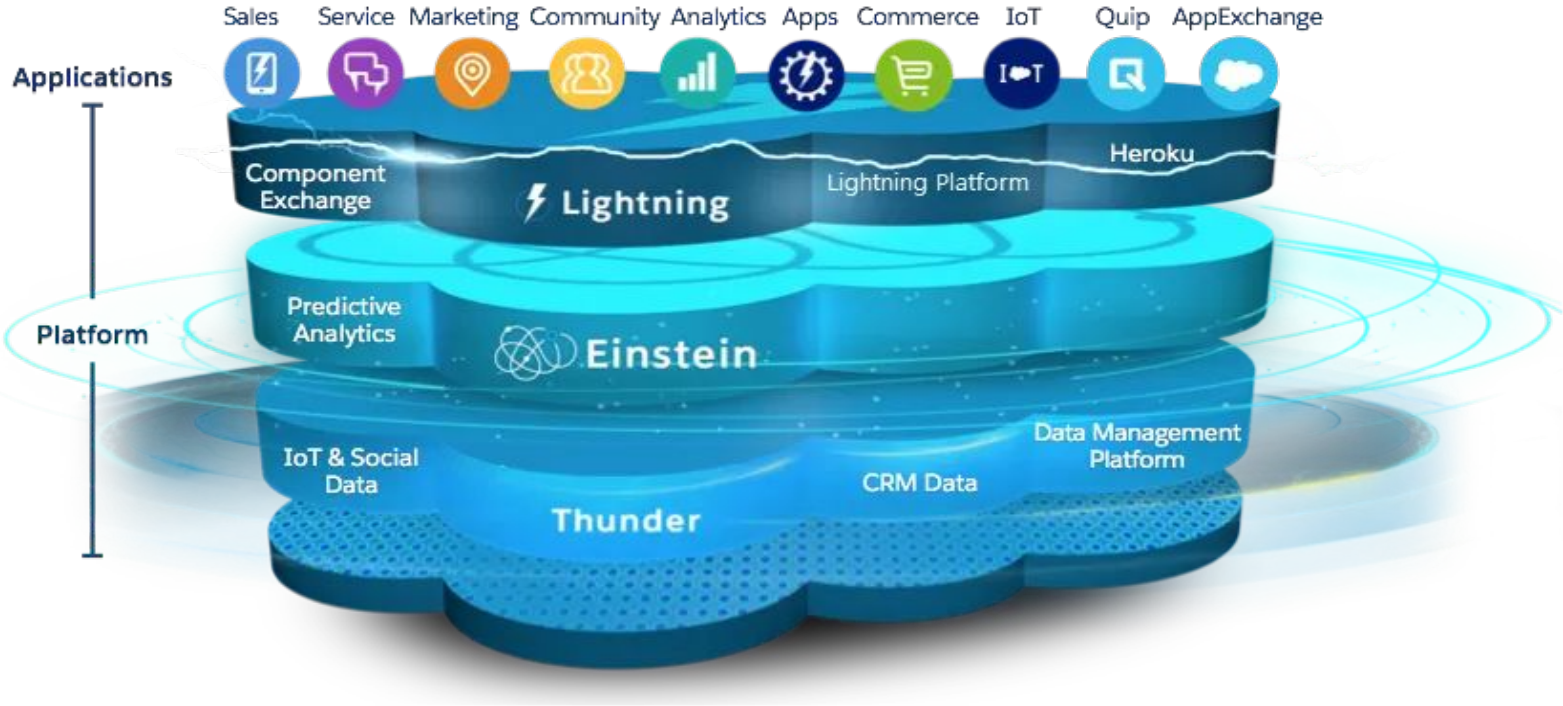
Project 2 (CURRENT): Online Employee/Contractor Enrollment Application

- Allow users to request forms that will be generated via back-end communication with BOX and Adobe API; saved in BOX when signed

Introduction to Salesforce

Presenter: Tabassuma Torosa

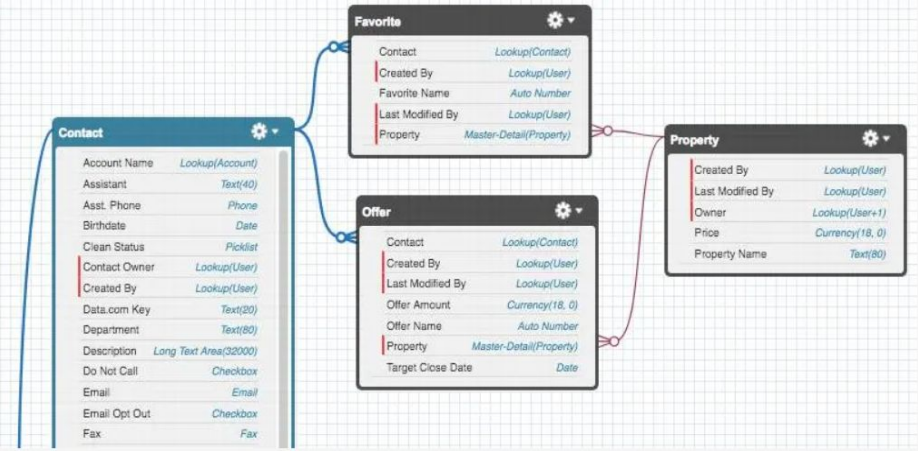
- Salesforce - Cloud based platform that provides multiple services to customers
- Focuses on managing company's interactions with customers

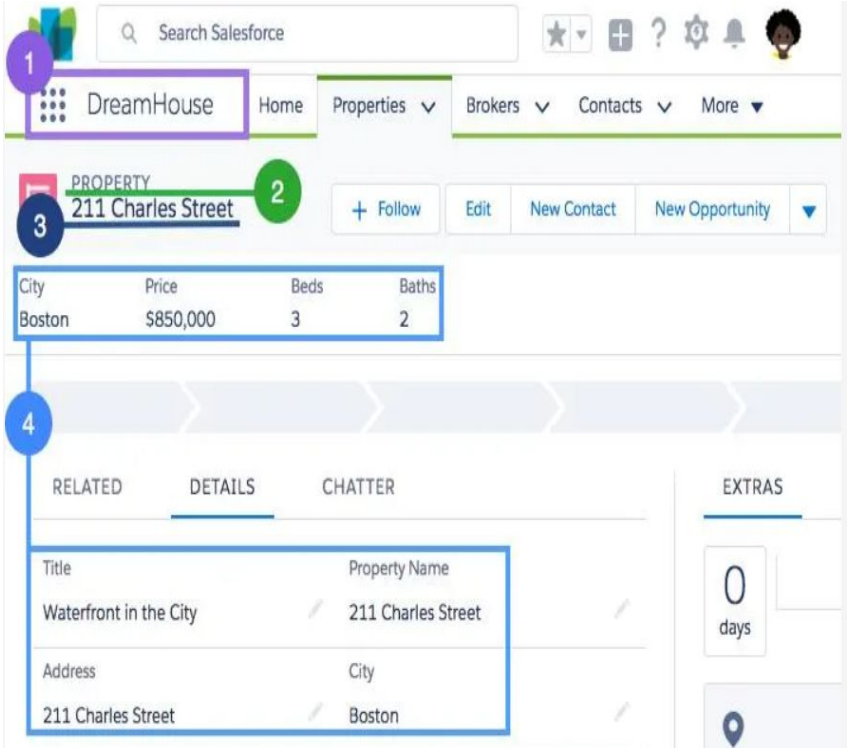


Our Progress with Salesforce

Presenter: Tabassuma Torosa

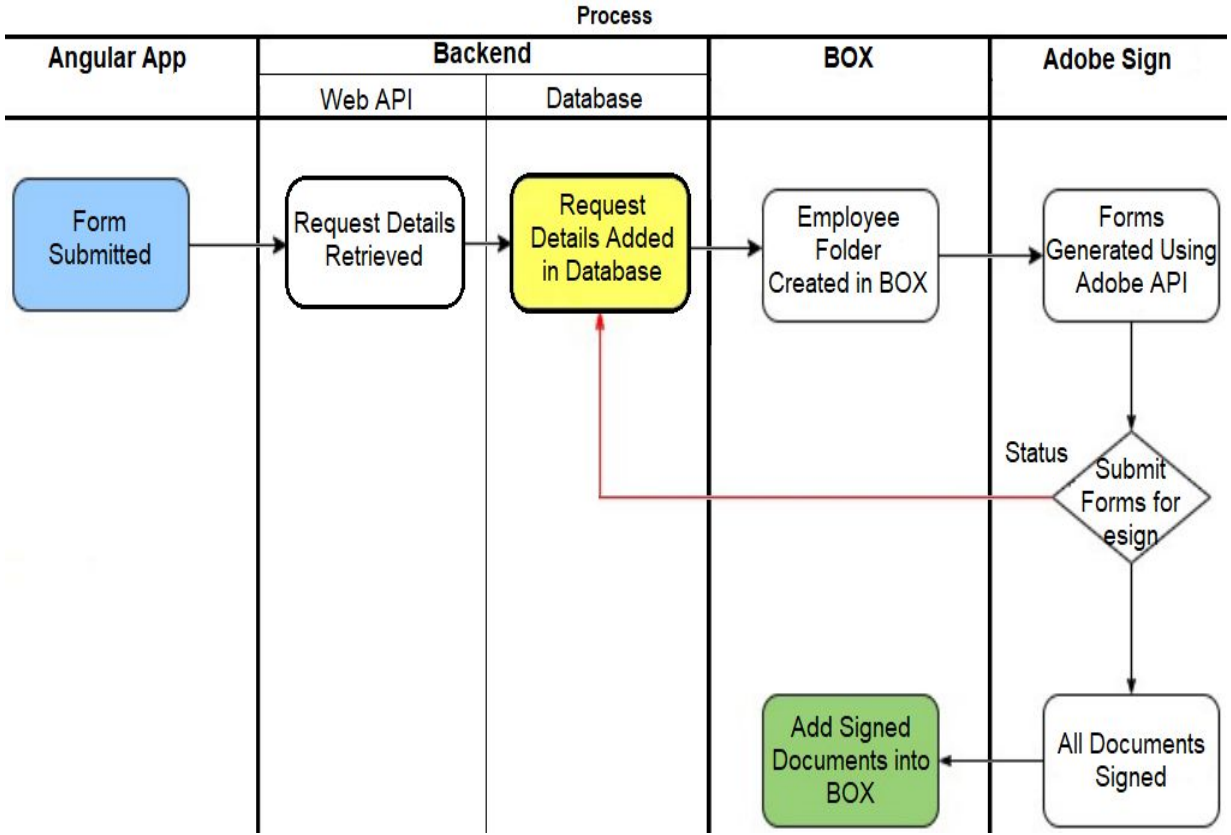
- Export and import data
- Create schema to model data
- Install apps/packages
- Deploy customized app in Salesforce app store





Enrollment Application Project

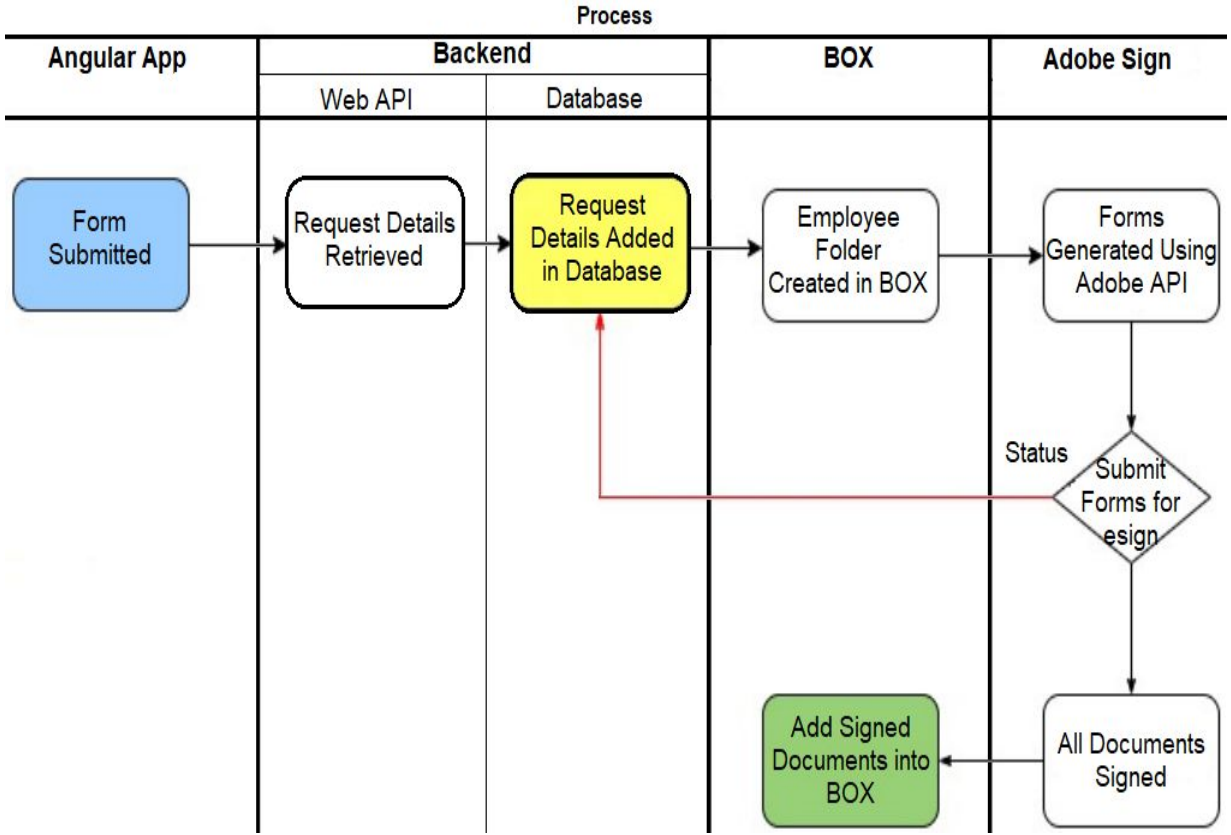
Presenter: Audelia Valdovinoz



- Angular app is used to submit employee & contractor requests.
  - Includes Request Status page where the user can search by certain fields
  - Requestor is sent a RequestID
- Backend retrieves and stores request details to database.

Enrollment Application Project (cont.)

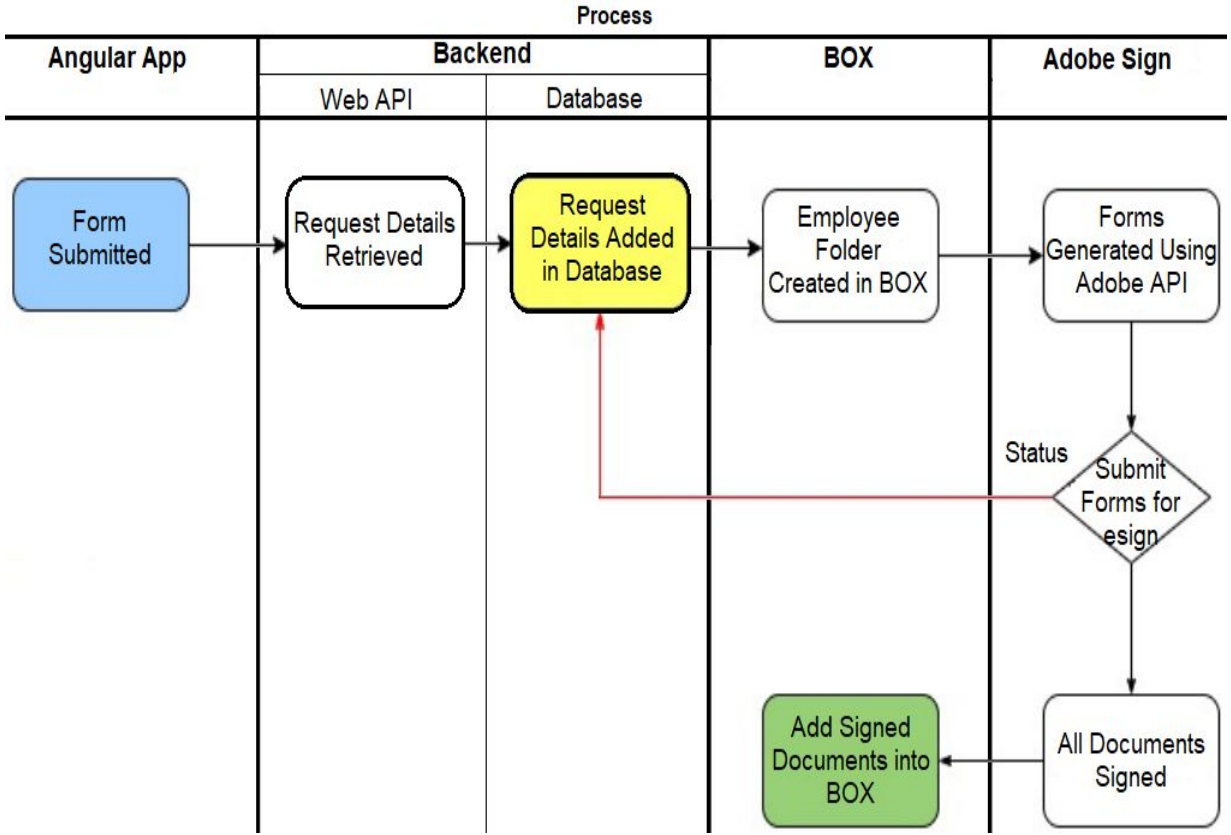
Presenter: Audelia Valdovinoz



- BOX is a cloud storage service.
- Corresponding forms are generated and filled with requestor provided data.
- Generated documents are sent to the requestor for review and to be esigned.

Enrollment Application Project (cont.)

Presenter: Audelia Valdovinoz



- The requestor then sends the forms to the appropriate parties for review.
- Once successfully completed, the documents are added to the employee's folder in BOX.

Project Requirements

Presenter: Marlito Refuerzo

- Developed w/ a Custom Form using Angularjs for specific form information
- Request Status page w/ specific searchable fields via Angular App
- Request (through Form Submission) is recorded and adds an entry to the database
- Values inputted in specific PDF templates (based on type) generates the specific forms and inputs the data into the new forms
- Sends generated and filled out form to the Requestor for review
- Allows Requestor to review, prep, and send forms to others for review
- Upon completion, stores document

Employee Fields

- First Name
- Last Name
- Telephone
- Address (Street, City, State, Zip)
- Email ID
- Employee Type (Defaults to Employee)
- Employee ID
- Submission Date (Defaults to Current Date)
- Requestor Name
- Requestor Email
- Approvers
- Department Number
- Department Name

Contractor Fields

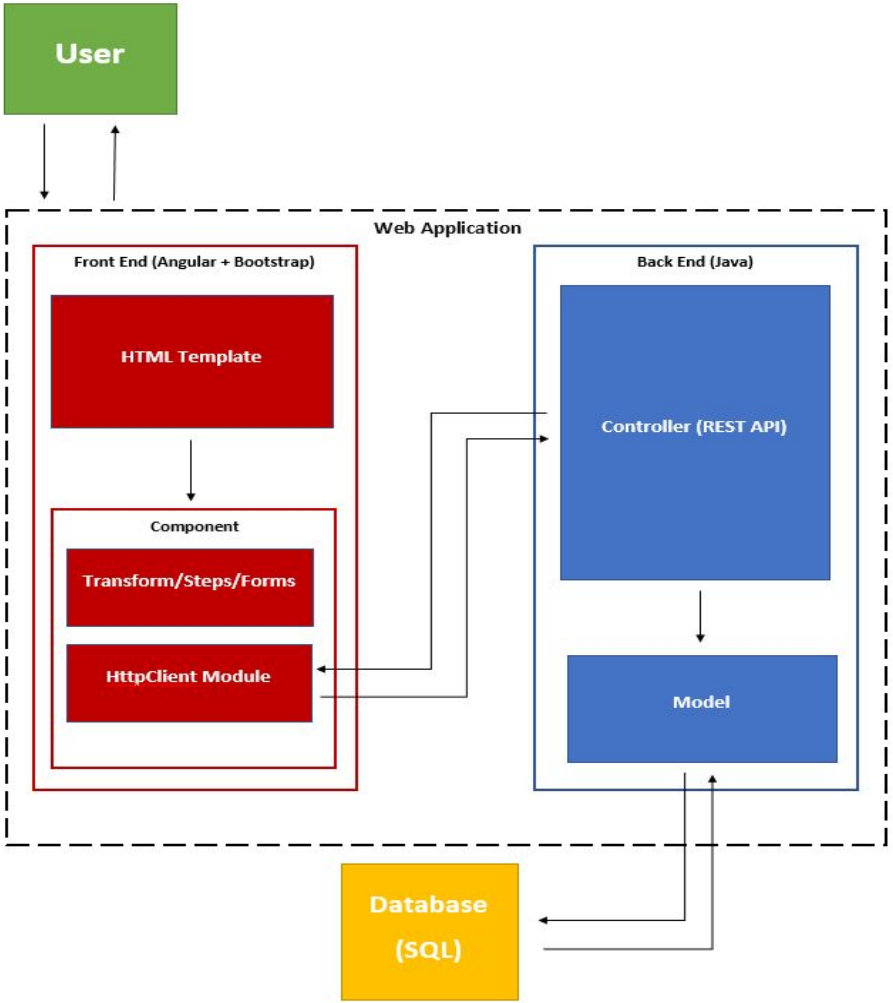
- First Name
- Last Name
- Contracting Company
- Telephone
- Address (Street, City, State, Zip)
- Company Email ID
- Employee Type (Defaults to Contractor)
- Employee ID (Only Available if Type is set to Employee)
- Submission Date (Defaults to Current Date)
- Requestor Name
- Requestor Email
- Approvers
- Department Number
- Contract Work Order Number
- Contract Expiration Date
- Business Street Address
- Department Name

Searchable Fields

- Request ID
- Employee ID
- Contracting Company
- First Name
- Last Name

Overall System Architecture Diagram

Presenter: Paul Clef Ube



Overall System Architecture

Presenter: Paul Clef Ube

User: Make requests and receive responses to the Web Application

Web Application: Contains a Front End and Back End. The web application sends the HTML template (user interface) to the user to interact and fill out forms.

Front End: Has an HTML template that interacts with Angular components. The HttpClient Module then sends service requests and receive responses from the Back End controller.

Back End: Receives service requests from Front End, models data in Java, stores in relational database.

Database: Keeps data in storage. It sends requested data to the model of the Back End.

Backend Operations



Presenter: Javier Garcia

Technologies

The backend infrastructure uses the following Java-based frameworks:

- Spring Boot: A streamlined extension of the Spring application framework. The built-in libraries and server functionalities lead to greater efficiency as many low-level configurations are already accounted for.

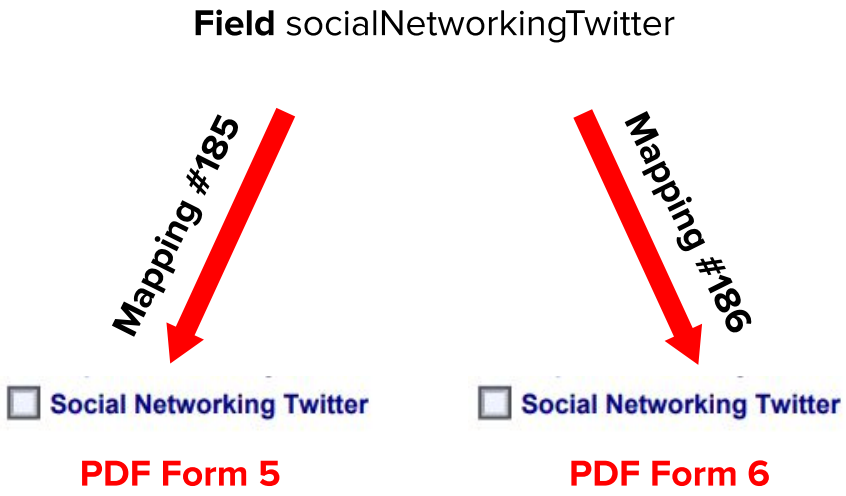
- Hibernate: An object-relational mapping framework. Provides an intuitive interface between the object-oriented Java and relational SQL data models via the intermediary language HQL (Hibernate Query Language).

Backend Operations

Presenter: Javier Garcia

PDF Handling

- Information stored in the backend database directly populates the PDF forms used for the onboarding process.
- Fields in the web form are mapped to their corresponding fields in the PDF forms.
- Account for shared fields across multiple PDF forms, each one mapping back to the same web field.



Backend Operations

Presenter: Javier Garcia

API Design (REST model)

Resource	**GET** (Read)	**POST** (Create)	**PUT** (Update)	**DELETE** (Delete)
/service_requests	**Returns** a list of *Service Requests*.	**Creates** a new *Service Request*.	Method not allowed (405).	Method not allowed (405).
/service_requests/{id}	**Returns** a specific *Service Request*.	Method not allowed (405).	**Updates** a specific *Service Request*.	**Deletes** a specific *Service Request*.
/forms	**Returns** a list of *Forms*.	**Creates** a new *Form*.	Method not allowed (405).	Method not allowed (405).
/forms/{id}	**Returns** a specific *Form*.	Method not allowed (405).	**Updates** a specific *Form*.	**Deletes** a specific *Form*.
/fields	**Returns** a list of *Fields*.	**Creates** a new *Field*.	Method not allowed (405).	Method not allowed (405).
/fields/{id}	**Returns** a specific *Field*.	Method not allowed (405).	**Updates** a specific *Field*.	**Deletes** a specific *Field*.
/mappings	**Returns** a list of *Mappings*.	**Creates** a new *Mapping*.	Method not allowed (405).	Method not allowed (405).
/mappings/{id}	**Returns** a specific *Mapping*.	Method not allowed (405).	**Updates** a specific *Mapping*.	**Deletes** a specific *Mapping*.

Backend Operations

Presenter: Javier Garcia

Current API (REST Model)

/forms


```
{
  "id" : 1,
  "name" : "ISD Active Directory
  Hosted Registration Forms
  Contractor and Vendors",
  "fields":[
    {
      "id" : 22,
      "name" : "lastName",
      "type" : "text"
    },
    {
      "id" : 23,
      "name" : "firstName",
      "type" : "text"
    },
    {
      "id" : 24,
      "name" : "middleInitial",
      "type" : "text"
    },
```


...

/fields


```
{
  "id":22,
  "name":"lastName",
  "type":"text"
},
{
  "id":23,
  "name":"firstName",
  "type":"text"
},
{
  "id":24,
  "name":"middleInitial",
  "type":"text"
},
{
  "id":25,
  "name":"employeeNumber",
  "type":"text"
},
```


...

/mappings


```
{
  "id":29,
  "requestFieldName":"lastName",
  "formId":1,
  "fieldId":"TextBox_1"
},
{
  "id":30,
  "requestFieldName":"lastName",
  "formId":2,
  "fieldId":"TextBox_1"
},
{
  "id":31,
  "requestFieldName":"lastName",
  "formId":5,
  "fieldId":"TextBox_1"
},
```


...

/service_requests


```
{
  "id":52,
  "createDate":"10/15/2020",
  "submitDate":"11/01/2020",
  "uuid":null,
  "registrationType":"New",
  "requestType":null,
  "lastName":"Doe",
  "firstName":"John",
  "middleInitial":"F",
  "employeeNumber":15,
  "hostedId":265,
  "departmentName":"Example Department",
  "departmentNumber":512,
  "companyName":null,
  "companyEmailAddress":null,
  "departmentEmailAddress":"john_doe@example.com",
  "countyEmailAddress":null,
  "employeeEmailAddress":null,
  "businessStreetAddress":"500 Example Ave.",
  "businessCity":"Los Angeles",
  "businessState":"CA",
  "businessZip":"90032",
```

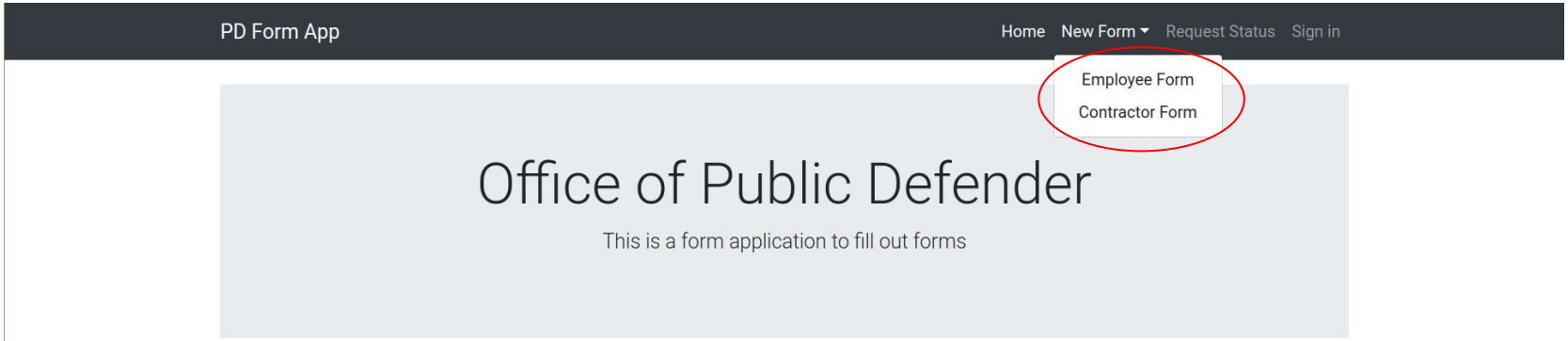

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Front End Operations

- Built with Angular
  - Easy to build user interfaces
  - Reusable code
  - Material UI
- Styled with Bootstrap

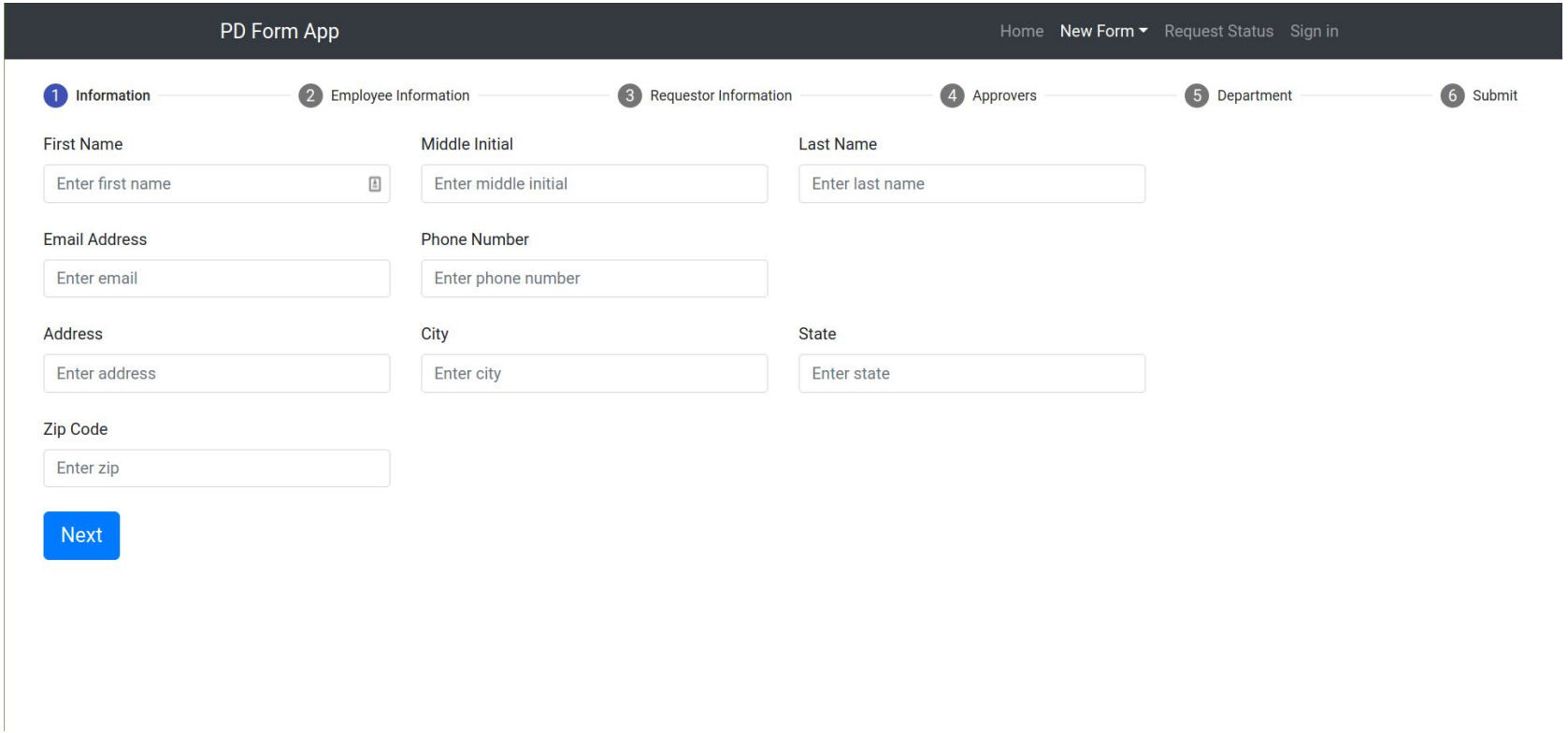


User Interface



Adrian Palomares

User Interface



Adrian Palomares

Current Progress & Achievements

Rawad Moussa

Initial Project: Migrate PD systems and databases to Salesforce.

- **Salesforce:** platform development, data modeling, data management, data security, and building apps using cloud technologies.

New Project: Online employee enrollment application.

- Frontend team: web form user interface
- Backend team: backend API
- PDF team: PDF API

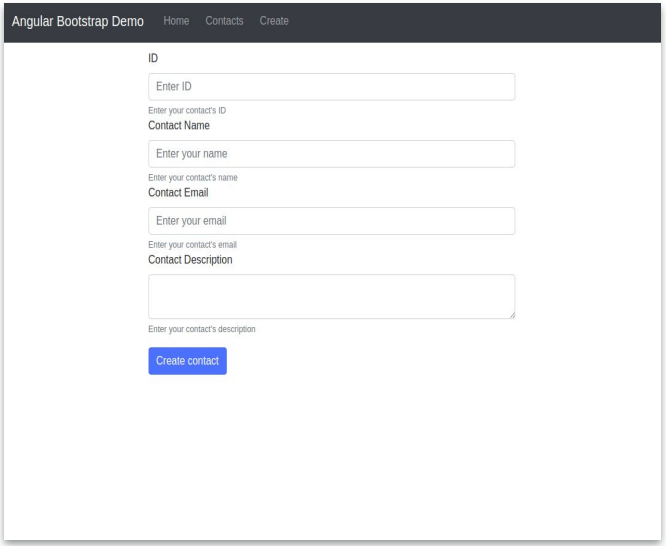


Current Progress & Achievements (cont.)

Rawad Moussa

Frontend team: Designing the web form user interface.

- Learning Angular
- Designing Web forms with Bootstrap
- Submitting requests to the backend API



Current Progress & Achievements (cont.)

Rawad Moussa

Backend team: Developing the backend REST API system using Spring Boot

- Learning Spring Boot, Hibernate, and data modeling
- Creating data models
- Storing data in the database



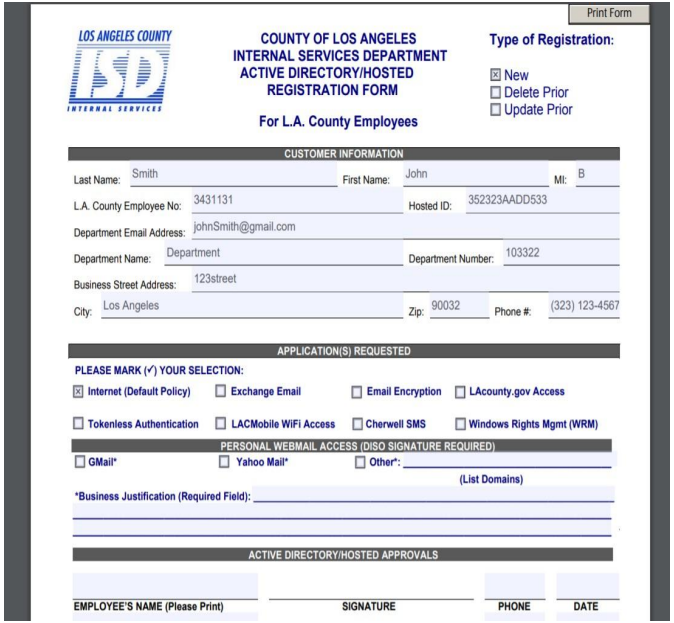
Current Progress & Achievements (cont.)

Rawad Moussa

PDF team: Using PDF libraries to fill out PDF forms.

- Using PDFBox to fill PDF forms
- Designing spreadsheet for the PDF fields
- Building the database schema

APACHE PDFBox



Print Form

LOS ANGELES COUNTY ISD INTERNAL SERVICES

COUNTY OF LOS ANGELES
INTERNAL SERVICES DEPARTMENT
ACTIVE DIRECTORY/HOSTED
REGISTRATION FORM

For L.A. County Employees

Type of Registration:
☒ New
☐ Delete Prior
☐ Update Prior

CUSTOMER INFORMATION

Last Name: Smith First Name: John MI: B
L.A. County Employee No: 3431131 Hosted ID: 352323AADD533
Department Email Address: johnSmith@gmail.com
Department Name: Department Department Number: 103322
Business Street Address: 123street
City: Los Angeles Zip: 90032 Phone #: (323) 123-4567

APPLICATION(S) REQUESTED

PLEASE MARK (✓) YOUR SELECTION:

☒ Internet (Default Policy) ☐ Exchange Email ☐ Email Encryption ☐ LAcounty.gov Access
☐ Tokenless Authentication ☐ LACMobile WiFi Access ☐ Cherwell SMS ☐ Windows Rights Mgmt (WRM)

PERSONAL WEBMAIL ACCESS (DISO SIGNATURE REQUIRED)

☐ GMail* ☐ Yahoo Mail* ☐ Other*: (List Domains)

*Business Justification (Required Field):

ACTIVE DIRECTORY/HOSTED APPROVALS

EMPLOYEE'S NAME (Please Print) SIGNATURE PHONE DATE

Current Progress & Achievements (cont.)

Rawad Moussa

Challenges & Overcomes:

- **Challenge #1:** Keeping the teams on the same page.
  Overcome: Weekly meetings, messaging, and screen sharing.

- **Challenge#2:** Learning new platforms and languages without prior experience.
  Overcome: Using the same tutorials and answering questions on Discord.

Plan For Next Semester

Christopher Rodriguez

- Finished functional project
  - Project tasks
    - Request status page
    - Database entry
    - BOX folder
    - Generated PDF forms
  - Connecting the components
  - Testing
  - Documentation

Plan For Next Semester

Christopher Rodriguez

- Far future implementations
  - Secondary components
    - Login component
    - Email component
  - Website
  - Mobile App

