

MICHIGAN STATE

U N I V E R S I T Y

Project Plan
Walter, You Gotta Go
The Capstone Experience
Team Quicken Loans

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From Students...
...to Professionals

Functional Specifications

- Quicken Loans has legacy applications they wish to replace
- Creating new applications could take several years to complete
- Create a new web-based front end while still using legacy application in the background
- Automate use of legacy applications with Robotic Process Automation (RPA)



Meet the Team



Lindsey



Leroy



Walter



Roger



Debra

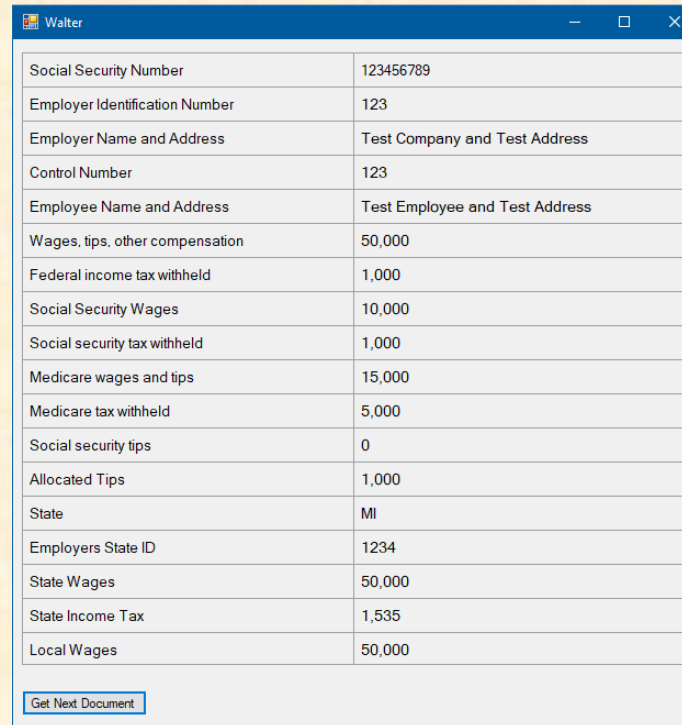


Design Specifications

- Modern web-based front-end that's easier for users to use
- “Virtual worker” that automates the data entry process for legacy app
- Central API that aids communication between different systems and the database



Screen Mockup: Legacy Application



The screenshot shows a window titled "Walter" with a table of data and a button at the bottom. The table contains the following information:

Social Security Number	123456789
Employer Identification Number	123
Employer Name and Address	Test Company and Test Address
Control Number	123
Employee Name and Address	Test Employee and Test Address
Wages, tips, other compensation	50,000
Federal income tax withheld	1,000
Social Security Wages	10,000
Social security tax withheld	1,000
Medicare wages and tips	15,000
Medicare tax withheld	5,000
Social security tips	0
Allocated Tips	1,000
State	MI
Employers State ID	1234
State Wages	50,000
State Income Tax	1,535
Local Wages	50,000

Below the table is a button labeled "Get Next Document".



Screen Mockup: W2 Entry Form

lindsey.quickenloans.com X

← → ↻ http://lindsey.quickenloans.com/ ☆ ⋮

For quick access, place your bookmarks here on the bookmarks bar. Import bookmarks now...

Gabe

W2 Form Submission RobertJohnsonW2.form

W2 Forms ▾

- RobertJohnsonW2.pdf
- PaulWilsonW2.pdf
- JackSmithW2.pdf
- StefanKarlW2.pdf
- JohnSmithW2.pdf
- LaurenTellerW2.pdf
- JamesMichaelW2.pdf

Pay Stubs >

Bank Statements >

a. SSN

b. Employer ID

c. Employer's name, address and ZIP code

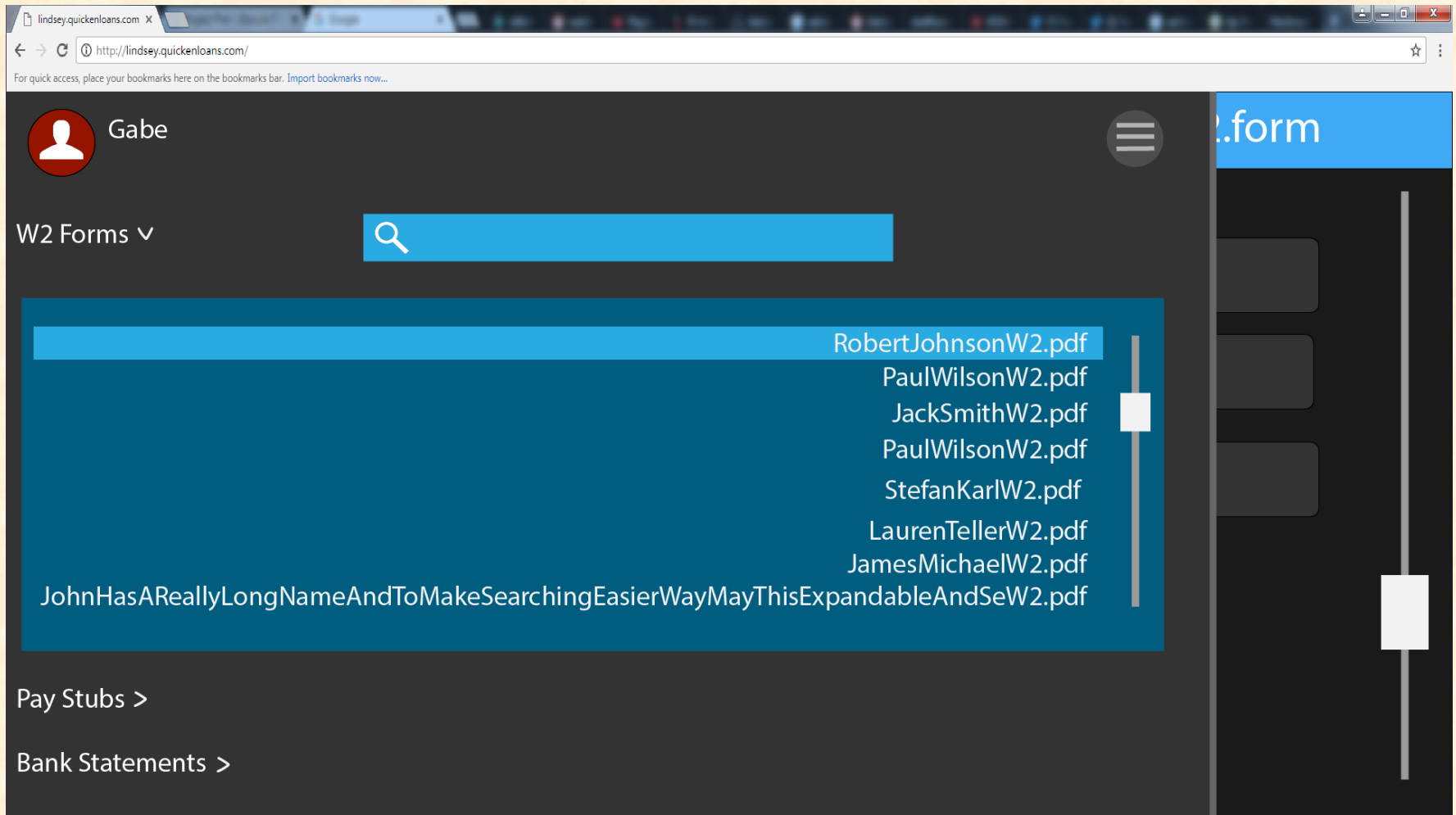
d. Control Number

e. Employee's first Last name Suff.

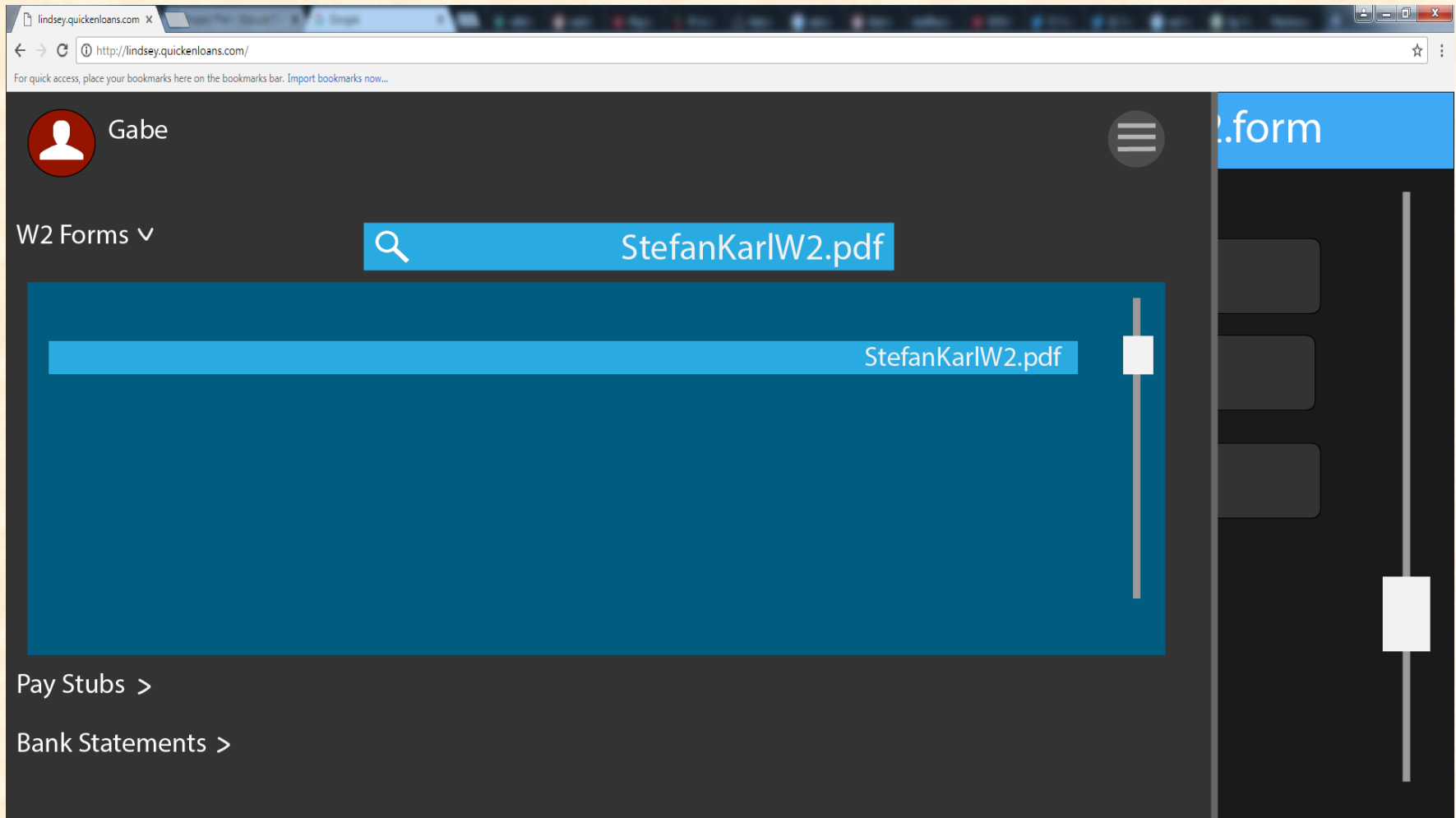
f. Employee's address and ZIP code



Screen Mockup: Expanded Side Bar



Screen Mockup: Side Bar Search

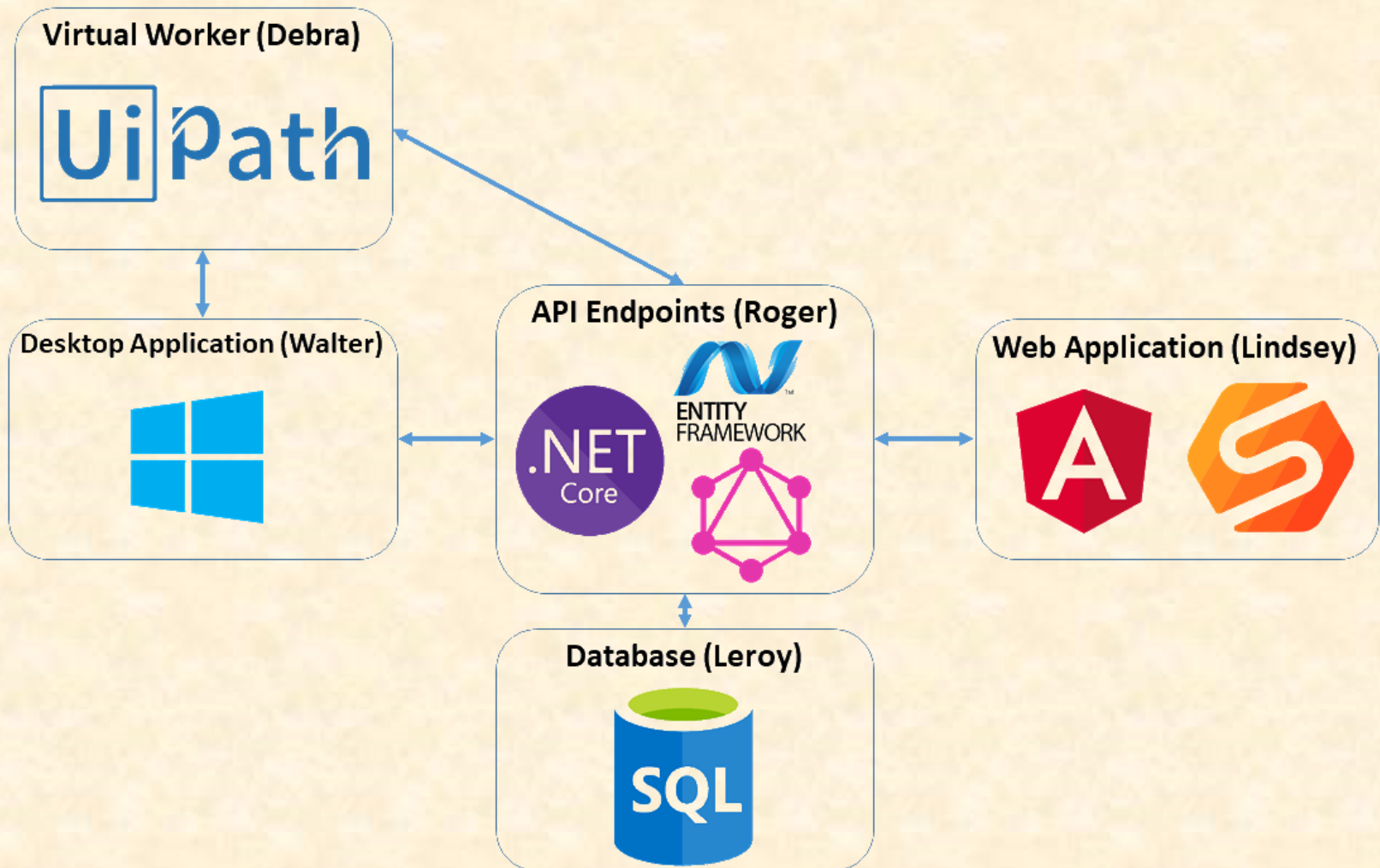


Technical Specifications

- WinForms desktop application with Azure Notifications
- Robotic Process Automation system using UiPath to locate data with screen scraping
- GraphQL API that queries the Microsoft SQL database via the Entity Framework
- Web application designed using Angular and the Spark Design System



System Architecture



System Components

- Hardware Platforms
 - None
- Software Platforms / Technologies
 - Microsoft Azure
 - UiPath
 - GraphQL
 - Microsoft SQL
 - Angular w/ Spark UI
 - .NET WinForms



Risks

- Scope Creep
 - Working on non-essential features early in the project
 - Clearly designate stretch goals and set aside until later
- Setting up Screen Scraping
 - Teaching the RPA to find the correct data fields when pulling data
 - Get system running early for extensive experimentation
- Integrating Azure Tools
 - Successfully integrating each system with each other
 - Establish connections early into development to catch issues earlier
- Lack of Useful Documentation
 - Certain software tools have limited documentation
 - Research pre-existing samples to better understand the tools



Questions?

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