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

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<th>Description</th>
<th>Value</th>
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<td>Employer Identification Number</td>
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<tr>
<td>Employer Name and Address</td>
<td>Test Company and Test Address</td>
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<tr>
<td>Control Number</td>
<td>123</td>
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<tr>
<td>Employee Name and Address</td>
<td>Test Employee and Test Address</td>
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<tr>
<td>Wages, tips, other compensation</td>
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<tr>
<td>Federal income tax withheld</td>
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<tr>
<td>Social Security Wages</td>
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<td>State Wages</td>
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<td>State Income Tax</td>
<td>1,535</td>
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<tr>
<td>Local Wages</td>
<td>50,000</td>
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</table>
Screen Mockup: W2 Entry Form

W2 Form Submission

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 name Last name Suffix
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

- Virtual Worker (Debra): UiPath
- Desktop Application (Walter): .NET Core
- API Endpoints (Roger)
- Web Application (Lindsey): Angular, React
- Database (Leroy): SQL
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?