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

![Mockup Image]

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

[Get Next Document]
Screen Mockup: W2 Entry Form

W2 Form Submission

RobertJohnsonW2.form

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

W2 Forms

RobertJohnsonW2.pdf
PaulWilsonW2.pdf
JackSmithW2.pdf
PaulWilsonW2.pdf
StefanKarlW2.pdf
LaurenTellerW2.pdf
JamesMichaelW2.pdf
JohnHasARellyLongNameAndToMakeSearchingEasierWayMayThisExpandableAndSeW2.pdf

Pay Stubs >

Bank Statements >
Screen Mockup: Side Bar Search

W2 Forms

StefanKarlW2.pdf

Pay Stubs

Bank Statements

The Capstone Experience

Team Quicken Loans Project Plan Presentation

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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)

API Endpoints (Roger)

.NET Core

Database (Leroy)

SQL

Web Application (Lindsey)
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?