

Project Description

MA State Employee Retirement Pension Calculator

Prepared by Team 307, October 5th, 2017

Project Overview

The Massachusetts State Retirement Board (MSRB) manages the retirement system for past and current MA state employees. One of the online tools they offer in that system is a calculator used for computing a state employee's retirement pension. This project aims to provide an improvement to this tool used by state employees and technical support members of the Massachusetts State Employees Retirement System (MSERS).

Project Purpose

This online tool is mainly used by active state employees who would like evaluate their retirement plan by estimating the amount of money to expect in each monthly pension check. There are 90,014 active members inside the Massachusetts State Employees Retirement System, with a total of \$2.096 billion benefits paid, with an average annual benefit of \$33,680. Creating a better and more useable version of this tool would provide state employees a more efficient way to estimate pensions. This would have two beneficial results:

1. Employees can confidently determine their monthly pension checks through a easy-to-understand, easy-to-learn workflow.
2. Increases the success rate for employee self-service, which reduces the probability for users phoning support, which would alleviate the workload for the MSRB support team.

To attain these benefits and attain the goals of this project, the end product needs to:

1. Streamline the calculator's user experience and user flow
2. Seamlessly integrate field descriptions and instructions within the workflow
3. [TBD] Eliminate manual steps by auto-filling fields using the MSRB database
4. Retain all features available from the original product.

Besides redesigning the calculator functionalities, this project also aims to modularize and document the codebase for future extensibility.

Stakeholders

Clients

The clients of this project is the MSRB, including Robin Healey, Chief Information Officer, and Sam Hammar, Director of Digital Engagement, both from the Department of the State Treasurer.

End Users

1. Current/Past State Employee

Role	To estimate how amount of monthly pension check based on their current earnings.
Subject Matter Exp.	Some experience with retirement procedures, but needs instructions to understand the meaning behind each field, as well as pension options.
Technological Experience	Tech novice with knowledge to navigate webpages

2. MSERS Support Group

Role	To assist current/past state employees in estimating their pension amounts, using this calculator.
Subject Matter Exp.	Highly experienced with the MSERS procedures and each component used for calculating an employee's pension options.
Technological Experience	Knowledgeable about common technology interfaces. Has expectation of how the calculator should behave based on the legacy tool.

Scope of Work

The scope of work to be completed is comprised of two primary pieces, understanding the logic / accounting mathematics used in the existing pension estimation tool(s) and developing a new implementation of pension estimation logic wrapped in a streamlined user interface. The implementation must be modularized and well documented.

Legacy	<p>Reverse engineer existing JS implementation to extract core business logic and accounting logic necessary to compute accurate pension estimates (ideally, enough to create a fresh implementation). Study existing implementation to identify flaws in common user work-flows.</p> <p>A legacy front-end layout contains all of the fields necessary to perform the calculation. This new iteration should be a subset of all of these fields redesigned into a user-friendly and streamlined workflow.</p> <p>The MSERS owns a database containing state employees data relevant to this tool, although they have yet to share its schema.</p>
Present	<p>Produce a fresh implementation of core logic for pension estimation. Wrap fresh implementation of core logic in a streamlined and efficient UI.</p>

Functional Requirements

Class	Requirement
MUST	The system must streamline the user experience into a single workflow.
MUST	The system must seamlessly integrate field descriptions and instructions within each field and each step of the workflow.
MUST	<p>The system must retain all features available from the original product:</p> <ul style="list-style-type: none">• Differentiate between members entering service before April 2, 2012 and on and after April 2, 2012• Display a disclaimer message for using this tool• Display all input fields used for entering the values used for calculating the pension options• Validate input for each input field and provide relevant error messages for user.• A button that generates three pension options based on the criterion logic specified by the MSRB:

	<ul style="list-style-type: none"> ○ Option A - No Survivor Benefit ○ Option B - Protects Your Annuity ○ Option C - Option C - Joint Survivor Allowance ● For each option, display the following values: <ul style="list-style-type: none"> ○ Estimated annual Allowance ○ Estimated monthly allowance ○ Estimated Beneficiary Annual Allowance ○ Estimated Beneficiary Monthly Allowance
MAY	<p>The system may eliminate manual steps by auto-filling fields by querying the MSRB database, for example:</p> <ul style="list-style-type: none"> ● Date of birth ● Group Number ● Veteran status ● Service Years ● Average of highest sixty consecutive months of annual regular compensation
MAY	<p>The system may contain an authentication layer used to auto-fill from the database, using a username and password pair.</p>

Use Cases

See documents:

“nonexistingUserRetiresHypotheticalInput.docx”

“existingUserRetiresToday.docx”

“existingUserRetiresInFuture.docx”

“existingUserRetiresHypotheticalInput.docx”

References and Links

Massachusetts State Retirement Board. "CS4500 – The Retirement System Calculator Project",

Microsoft PowerPoint file

Massachusetts State Retirement Board. "2017-msers-fact-sheet", June 14 2017.

Massachusetts State Retirement Board. "Benefit Guide for the Massachusetts State Employees' Retirement System", August 2017.

CS4500 – The Retirement System Calculator Project:

<https://drive.google.com/file/d/0B0QFQHm7qmDuWDNwTS1NN1FKTWYtd3ZBUFYyV2ZjUC1HQXJF/view>

2017-msers-fact-sheet:

<https://drive.google.com/file/d/0B0QFQHm7qmDuVXFYRVR4YWRpSEhLWm1ISlp3d0Rja21rX05F/view>

Benefit Guide for the Massachusetts State Employees' Retirement System"

<https://drive.google.com/file/d/0B0QFQHm7qmDueGNnQTdnb1NoUHQ5SDU4Yko3Tjdkc2dJUTeW/view>