Loan Calculator Application

TECHNICAL DESIGN DOCUMENT

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**Version History**

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| Name | Date | Reason for Change | Version |
| *Loan Application* | *12/4/2022* | *New document format* | *1.0.0* |
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# SECTION 1: INTRODUCTION

## Purpose

*The Loan Calculator is an online application used to estimate monthly payments and interest will be paid through the term of a loan.*

## Terminology

|  |  |
| --- | --- |
| **Name** | **Comments** |
| *MEAN Stack* | *MongoDB, Express, Angular, and Node.js* |
| *VS Code* | *Development IDE* |
| *SoapUI* | *API testing tool* |
| *MongoDB Compass* | *Database development IDE* |
| *Angular Material* | [*https://material.angular.io/*](https://material.angular.io/) |
| *Flex-layout* | [*https://github.com/angular/flex-layout*](https://github.com/angular/flex-layout) |

## User Personas

*A picture containing person

Description automatically generated*

***User 1****: Jennifer Smith****Age****: 24 years old****Purpose****: In the market for a new car. First major solo purchase.****Technology****: Above average computer skills.****Motivations****: Instant gratification, confidence builders, trust-worthy sources.****Pain Points****: Waiting, being ignored, disorganization.****Profile****: Jennifer is a newly promoted project manager for a well-established firm. She enjoys developing her team, producing high quality results, and meeting deadlines. Her management style is respectful and inclusive. In her downtime, Jennifer hikes with her dog and spends time with her family. She seeks to maintain a positive attitude in any circumstance.*

*A person folding his arms

Description automatically generated* ***User 2****: Pedro Martinez****Age****: 34 years old****Purpose****: Husband and father in the market for a larger home.****Technology****: Average computer skills.****Motivations****: Simplicity, clean appearance, functionality that makes sense.****Pain Points****: Downtime, disruptions, bright colors.****Profile****: Pedro is a dedicated, patient father and a loving husband. He works as a mechanic in a family business and likes to keep busy. His meticulous attention to detail makes it challenging to accept mistakes. Pedro spends his time off with his family, going on adventures, and staying active.*

*A picture containing sky, person, outdoor

Description automatically generated* ***User 3****: Jean Connor****Age****: 76 Years Old****Purpose****: Considering downsizing to a condo.****Technology****: Below average computer skills.****Motivations****: Ease of use, visibility, simplicity.****Pain Points****: Vision/hearing difficulties, inexperience with technology.****Profile****: Jean and her husband are thinking about buying a condo closer to their son and his family. Jean likes making informed decisions, having control in situations, and the freedom of being retired. Her hobbies include reading, cooking, and going for walks in local parks.*

## User Stories

|  |  |
| --- | --- |
| ***User Stories for User 1:*** | ***Work Estimations:*** |
| ***1.*** *As a young user, I want modern design, so that I have a good experience using the app.* | ***Hours: 2***  ***Points: 5*** |
| ***2.*** *As an experienced user, I want an engaging app, so that it holds my interest.* | ***Hours: 8***  ***Points: 40*** |
| ***3.*** *As a young user, I want the app to be easy to use, so that I get results quickly.* | ***Hours: 6***  ***Points: 21*** |
| ***User Stories for User 2:*** |  |
| ***1.*** *As an adult user, I want clean design, so that I can navigate easily.* | ***Hours: 3***  ***Points: 8*** |
| ***2.*** *As a minimalist, I want few distractions, so that I have a good experience.* | ***Hours: 2***  ***Points: 2*** |
| ***3.*** *As a smart user, I want accurate results, so that I can trust the application.* | ***Hours: 3***  ***Points: 13*** |
| ***User Stories for User 3:*** |  |
| ***1.*** *As an inexperienced user, I want simplicity, so that I don’t get overwhelmed.* | ***Hours: 3***  ***Points: 3*** |
| ***2.*** *As a visually impaired user, I want easy to read, so that I can use the application.* | ***Hours: 1***  ***Points: 1*** |
| ***3.*** *As a smart user, I want accurate results, so that I can make an informed decision.* | ***Hours: 3***  ***Points: 34*** |

# SECTION 2: PROCESS DESIGN

## 2.1. Prototypes

*Home pageGraphical user interface, application

Description automatically generated  
Home page errorsGraphical user interface, text, application

Description automatically generated*

*About us pageGraphical user interface, text, application, Word

Description automatically generated*

*Contact us pageGraphical user interface, application, website

Description automatically generated*

## 2.2. ORD (Object Relational Diagram(s)

*Diagram

Description automatically generated*

## 2.3. NoSQL Document Diagram

*[Covert the above ORD into a NoSQL Document Diagram]*

## 2.4. NoSQL Data Structure

*[Covert the above NoSQL Document Diagram into a NoSQL Data Structure (JSON data)]*

# SECTION 3: QA TESTING

## 3.1. QA Test Plan

*[Weekly Test Cases]*

## 3.2. Unit Tests

*[Images of SoapUI Unit Tests]*

# SECTION 4: REFERENCES

*Woman portrait - Photo by <a href="https://unsplash.com/@wocintechchat?utm\_source=unsplash&utm\_medium=referral&utm\_content=creditCopyText">Christina @ wocintechchat.com</a> on <a href="https://unsplash.com/s/photos/woman-portrait?utm\_source=unsplash&utm\_medium=referral&utm\_content=creditCopyText">Unsplash</a>*

*Man portrait - Photo by <a href="https://unsplash.com/@markfarias?utm\_source=unsplash&utm\_medium=referral&utm\_content=creditCopyText">Mark Farías</a> on <a href="https://unsplash.com/s/photos/man-portrait?utm\_source=unsplash&utm\_medium=referral&utm\_content=creditCopyText">Unsplash</a>*

*Woman 2 portrait - Photo by <a href="https://unsplash.com/@christianbuehner?utm\_source=unsplash&utm\_medium=referral&utm\_content=creditCopyText">christian buehner</a> on <a href="https://unsplash.com/s/photos/grandmother?utm\_source=unsplash&utm\_medium=referral&utm\_content=creditCopyText">Unsplash</a>*