Assignment 9.2:

WhatABook

Technical Design Document

(TDD)

Bellevue University

WEB 335: Introduction to NoSQL

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House Arcadia:

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# Section 1: Introduction

## Purpose

WhatABook, a small used bookstore has decided to expand their presence by offering customers a solution they can install on their personal computers.

WhatABook would like to establish an application that:

* allows customers to browse their in-store book listing
* allows customers to add books to a wishlist
* allows customers to view their wishlist
* shows a listing of books by genre,
* shows a listing of books by author,
* search for book by title
* search for book by bookId

The interface must be as simplistic as possible because most of WhatABook’s customers are middle-aged users with minimal computer experience.

WhatABook has given us three (3) weeks to complete the project.

### Team: House Arcadia

A logo with a bird in the center

Description automatically generated

Team Captain: Bernice Templeman

Team Mascot: Arcadian Owls

The Team name “House Arcadia” was given to us and, according to dictionary,com, means “any real or imaginary place offering peace and simplicity.” The name is appropriate because our goal in development is to offer peace and simplicity in our WhatABook application.

Owls were chosen as our mascot because they symbolize wisdom, insight, mystic, adaptability, strength, and knowledge.

The team is building the MongoDB database scripts, queries, and console application through Python for the WhatABook website.

Team Members:

|  |  |  |
| --- | --- | --- |
| A person smiling for a selfie  Description automatically generated |  | A person with long hair smiling  Description automatically generated |
| Meher Salim  Web Designer/Developer | Sheldon Skaggs  Software Developer | Bernice Templeman  Software Developer |
| Web Development student with 10 years of experience in Web Design. Skilled in HTML, CSS, JavaScript, Python, and proficient in Adobe Software. | Over 20 years of web development experience in the Microsoft Stack from web sites to APIs and stand-alone applications. Solid understanding of C#, MS SQL, TypeScript, and IIS. | Software Developer for over 20 years with recent experience in full-stack development.  Seeking to leverage high proficiency in NoSQL, Python, JavaScript, HTML, and CSS in a full-time career as a full-stack developer. |

## 1.2 User Personas

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Joshua Kimble Archetype: Infrequent Reader  Work: More than 40-hour week Characteristics  |  |  | | --- | --- | | Middle-aged | Overworked | | Occasional Reader | |  FeaturesInterested Find Book by Title  Add Book to Wishlist Uninterested Listing by Genre Application Needs Easy to find a book by its title.  Easy to add or remove books from Wishlist.  Easy to navigate from Wishlist book entry to store entry. Computer Proficiency Below Average Goals Find what I’m looking for when I search for it. Frustrations Confusing interfaces  Wasting time | |  | | --- | | A person wearing sunglasses and smiling  Description automatically generated | | “When I am able, I like to read books recommend by friends or on the NY Times Best Sellers list.” | |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Andrea Norton Archetype: Genre Preferred  Work: Full time Characteristics  |  |  | | --- | --- | | Shopper | Frequent Reader | | Fun-loving |  |  FeaturesInterested List Books by Genre  Add Books to Wishlist Uninterested Find Book by Title Application Needs Intuitive and easy to user interface  Easy to list books by genre.  Easy to add or remove books from Wishlist. Computer Proficiency Average Goals Quickly find books in my preferred genres. Frustrations Confusing interfaces  Unnecessary steps to get things done. | |  | | --- | | A person wearing sunglasses and smiling  Description automatically generated | | “I know what I like and rarely stray from those genres.” | |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Alistair Bachman Archetype: Bookworm  Work: Graduate Student Characteristics  |  |  | | --- | --- | | Organized | Reads Anything | | Curious | Fast Reader |  Application FeaturesInterested Find Book by Title.  List Books by Genre. Uninterested Wishlist Application Needs Intuitive Interface  Mobile Friendly Computer Proficiency High Goals When I find a book, I want to finish it so I can move on to the next interesting book.  Read books from many genres. Frustrations Annoying ads, unnecessary steps to achieve goals. | |  | | --- | | A person wearing glasses and a baseball cap  Description automatically generated | | “If it seems interesting, I’ll read it. If I enjoy it, I’ll keep it.” | |

## User Stories

|  |
| --- |
| Joshua Kimble: Stories |
| Story 1: As a customer, I need an application to see books and wishlist. |
| Story 2: As a customer, I need to register so I can login. |
| Story 3: As a customer, I need to login so I can see all the books. |
| Story 4: As a customer, I need to see books by author, so I can quickly find other books to read by my favorite authors. |
| Story 5: As a customer, I need to see books by genre, so that I can quickly find books that I am interested in. |
| Andrea Norton: Stories |
| Story 6: As a customer, I need to search by title, so I can quickly find specific books. |
| Story 7: As a customer, I need to search by book id, so that I can quickly find books for classes. |
| Story 8: As a customer, I need to view a wish list, so that I know what book I am reading next. |
| Story 9: As a customer, I need to add books to a wish list, so that I can keep track of what I want to read. |
| Story 10: As a customer, I need to edit my wishlist, so that I can keep it current after finishing books. |
| Alistair Bachman: Stories |
| Story 11: As a customer, I need to have a secured login, so my account is secure. |
| Story 12: As a customer, I need to update my password, so that I can keep my account secure. |
| Story 13: As a customer, I need to access from my device, so that I can see my books anywhere, |
| Story 14: As a customer, I need an application that works, so that I don’t waste time. |
| Story 15: As a customer, I need to have an application available for download. |

## Work Estimation (story points)

|  |  |  |
| --- | --- | --- |
| Stories and Tasks | Work Hours | Points |
| Story 1: As a customer, I need an application to see books and wishlist. | 18 hours | 9 |
| Task 1.1: Create Template | 4 | 2 |
| Task 1.2: Create a Home Page | 4 | 2 |
| Task 1.3: Create A Products Page | 4 | 2 |
| Task 1.4: Create a Membership Page | 4 | 2 |
| Task 1.5: Create a Wishlist Page | 2 | 1 |
| Story 2: As a customer, I need to register so I can login. | 18 hours | 9 |
| Task 2.1: Create a Customer Database | 4 | 2 |
| Task 2.2: Define Sign-up/Login form style and develop new CSS class | 4 | 2 |
| Task 2.3: Display error for existing user who is trying to register | 4 | 2 |
| Task 2.4: Display error for unregistered user who is trying to login | 4 | 2 |
| Task 2.5: Display error for unauthorized user | 2 | 1 |
| Story 3: As a customer, I need to login so I can see all the books. | 18 hours | 9 |
| Task 3.1: Create a Book database. | 4 | 2 |
| Task 3.2: Define book list style and develop new CSS class. | 4 | 2 |
| Task 3.3: Display error for no books available. | 4 | 2 |
| Task 3.4: Display error for system errors. | 4 | 2 |
| Task 3.5: Create a query to display books. | 2 | 1 |
| Story 4: As a customer, I need to see books by author, so I can quickly find other books to read by my favorite authors. | 18 hours | 9 |
| Task 4.1: Connect to database | 4 | 2 |
| Task 4.2: Create a query to display books by author | 4 | 2 |
| Task 4.3: Display the books | 4 | 2 |
| Task 4.4: Display error message if no books found | 4 | 2 |
| Task 4.5: Display error message for system error | 2 | 1 |
| Story 5: As a customer, I need to see books by genre, so that I can quickly find books that I am interested in. | 18 hours | 9 |
| Task 5.1: Connect to database | 4 | 2 |
| Task 5.2: Create a query to display books by genre | 4 | 2 |
| Task 5.3: Display the books | 4 | 2 |
| Task 5.4: Display error message if no books found | 4 | 2 |
| Task 5.5: Display error message for system error | 2 | 1 |
| Story 6: As a customer, I need to search by title, so I can quickly find specific books. | 18 hours | 9 |
| Task 6.1: Connect to database | 4 | 2 |
| Task 6.2: Create a query to display book by title | 4 | 2 |
| Task 6.3: Display the book | 4 | 2 |
| Task 6.4: Display error message if not found | 4 | 2 |
| Task 6.5: Display error message if system error | 2 | 1 |
| Story 7: As a customer, I need to search by book id, so that I can quickly find books for classes. | 18 hours | 9 |
| Task 7.1: Connect to database | 4 | 2 |
| Task 7.2: Create a query to display book by id | 4 | 2 |
| Task 7.3: Display the book | 4 | 2 |
| Task 7.4: Display error message if no book found | 4 | 2 |
| Task 7.5: Display error message if system error | 2 | 1 |
| Story 8: As a customer, I need to view a wish list, so that I know what book I am reading next. | 6 hours | 3 |
| Task 8.1: Connect to database | 4 | 2 |
| Task 8.2: Create a query to display wishlist books | 4 | 2 |
| Task 8.3: Display wishlist | 4 | 2 |
| Task 8.4: Display error if no wishlist books found | 4 | 2 |
| Task 8.5: Display error if system error | 2 | 1 |
| Story 9: As a customer, I need to add books to a wish list, so that I can keep track of what I want to read. | 18 hours | 9 |
| Task 9.1: Connect to database | 4 | 2 |
| Task 9.2: Add a button to add book to wishlist | 4 | 2 |
| Task 9.3: Create update query to insert book to the wishlist | 4 | 2 |
| Task 9.4: Display error message if insert fails | 4 | 2 |
| Task 9.5: Display error message if system error | 2 | 1 |
| Story 10: As a customer, I need to edit my wishlist, so that I can keep it current after finishing books. | 6 hours | 3 |
| Task 10.1: Connect to database | 4 | 2 |
| Task 10.2: Create buttons on form to update the record | 4 | 2 |
| Task 10.3: Create a query to update wishlist | 4 | 2 |
| Task 10.4: Display error if update fails | 4 | 2 |
| Task 10.5: Display error if system error | 2 | 1 |
| Story 11: As a customer, I need to have a secured login, so my account is secure. | 18 hours | 9 |
| Task 11.1: Create form for password validation | 4 | 2 |
| Task 11.2: Add code to verify encrypted password | 4 | 2 |
| Task 11.3: Display successful update message | 4 | 2 |
| Task 11.4: Display error for failed authentication | 4 | 2 |
| Task 11.5: Display error for system error | 2 | 1 |
| Story 12: As a customer, I need to update my password, so that I can keep my account secure. | 18 hours | 9 |
| Task 12.1: Connect to database | 4 | 2 |
| Task 12.2: Create code to update password | 4 | 2 |
| Task 12.3: Create form for validation and new password | 4 | 2 |
| Task 12.4: Display error for failed update | 4 | 2 |
| Task 12.5: Display error for system error | 2 | 1 |
| Story 13: As a customer, I need to access from my device, so that I can see my books anywhere, | 18 hours | 9 |
| Task 13.1: Define mobile style and develop new CSS class | 4 | 2 |
| Task 13.2: Design for mobile-first | 4 | 2 |
| Task 13.3: Update HTML | 4 | 2 |
| Task 13.4: Update new CSS | 4 | 2 |
| Task 13.5: Test application for different screen sizes | 2 | 1 |
| Story 14: As a customer, I need an application that works, so that I don’t waste time. | 18 hours | 9 |
| Task 14.1: Test the application before release. | 4 | 2 |
| Task 14.2: Test new user registration and login. | 4 | 2 |
| Task 14.3: Test all books displayed | 4 | 2 |
| Task 14.4: Test books displayed by author, genre, book id, and title. | 4 | 2 |
| Task 14.5: Test wishlist | 2 | 1 |
| Story 15: As a customer, I need to have an application available for download. | 18 hours | 9 |
| Task 15.1: 3. Deploy your application to Render. | 4 | 2 |
| Task 15.2: Make sure your application is accessible via a public URL. | 4 | 2 |
| Task 15.3: Download the application | 4 | 2 |
| Task 15.4: access your application’s landing page and routes via a public URL | 4 | 2 |
| Task 15.5: Verify the responses with the expected responses | 2 | 1 |

# Section 2: Process Design

## Sitemap

A diagram of a home

Description automatically generated

WhatABook Homepage

* 1. Books
     1. See All Books
     2. Browse
        1. Genre
        2. Author
     3. Search
        1. Title
        2. ISBN
     4. Accessories
  2. My Account
     1. Sign In / Create Account
     2. Wishlist
        1. View Wishlist
        2. Edit Wishlist
  3. About Us
     1. Mission
     2. Owner Info
     3. FAQ
  4. Links and Contacts
     1. Links
     2. Contact
     3. Careers

## 2.2 Prototypes

A sketch was in Visio for the mobile version of the WhatABook application. [POP](https://marvelapp.com/pop) by Marvel was used to make the prototype functional at: <https://marvelapp.com/prototype/c9a1def>

Two best practices used in designing a WhatABook application are creating a wireframe first for the mobile first and including input fields and buttons that the user will be able to control (Google for Startups, 2016).

A diagram of a login form

Description automatically generated

## 2.3 ORD

A diagram of a customer

Description automatically generated

## 2.4 NoSQL Data Structure

{

    "book": [

      {

        "bookId": "ISBN-9781517295102",

        "title": "The Design of Web APIs",

        "author": "Arnaud Lauret",

        "genre": "Technology"

      },

      {

        "bookId": "ISBN-9780321826626",

        "title": "NoSQL Distilled",

        "author": "Pramod J. Sadalage & Martin Fowler",

        "genre": "Technology"

      }

    ],

    "customer": [

      {

        "customerId": "c1001",

        "firstName": "Hermione",

        "lastName": "Granger",

        "wishlistitems": [

          {

            "bookId": "ISBN-9781517295102",

            "title": "The Design of Web APIs",

            "author": "Arnaud Lauret",

            "genre": "Technology"

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            "bookId": "ISBN-9780321826626",

            "title": "NoSQL Distilled",

            "author": "Pramod J. Sadalage & Martin Fowler",

            "genre": "Technology"

          }

        ]

      },

      {

        "customerId": "c1002",

        "firstName": "Harry",

        "lastName": "Potter",

        "wishlistitems": [

          {

            "bookId": "ISBN-9781517295102",

            "title": "The Design of Web APIs",

            "author": "Arnaud Lauret",

            "genre": "Technology"

          },

          {

            "bookId": "ISBN-9780321826626",

            "title": "NoSQL Distilled",

            "author": "Pramod J. Sadalage & Martin Fowler",

            "genre": "Technology"

          }

        ]

      }

    ]

  }

# Section 3: Retrospective

## 3.1 Team Challenges

While we were challenged by everyone being remote with different schedules and time zones we worked very well together.

Though we worked great as a team, we still had a few challenges to overcome. Diverse work styles and time management were prominent challenges.

Due to our personal and professional responsibilities, the collaboration challenge was not the same as it would have been in a real-world scenario.

We did the best based on the time zone differences, work schedules, and personal deadlines.

## 3.2 What would you do differently?

The new Blackboard groups provided a discussion board and a file exchange. Sharing the Word document on another platform may allow everyone to edit the same file. From experience, people may save a copy of the file and have their versions similar to the experience of uploading the documents to the Blackboard group.

The Blackboard group discussion board allowed us each to check in and post updates when we were available so that others could read when they were available.

Some of the Group's suggestions are:

* Set up a quicker form of communication (such as Discord, GroupMe, or Teams) to help with our collaboration.
* Another alternative is to schedule a time to talk on the group discussion board. Although, different work schedules may make meetings on any platform a challenge.
* Create and use a GitHub repository to easily share and track file changes.
* Create a schedule to break down the workload, deadlines, and other important information (such as file names) to keep things running smoothly and without pause.
* Agree on who the team captain is and inform them of any changes made to who the captain is. Agree on what the team captain is responsible for and when they need to be available to handle those responsibilities.

# Reference

Google for Startups. (2016*). Rapid Prototyping: Sketching | Google for Startups.* <https://www.youtube.com/watch?v=JMjozqJS44M>