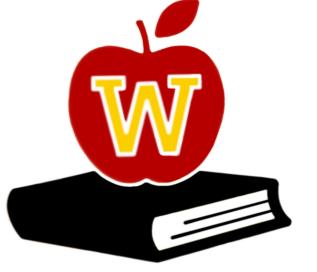




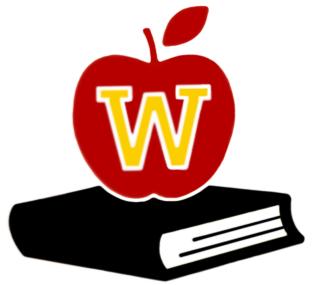
# Wildcat Library

Govind Chada and Aayush Gupta



# Contents

- What problem are we solving
- Application Planning and Design
- User Interface and Application Workflows
- Application Components and Information Flow
- Summary of Application Benefits



# Characters in our Story

- James and Amy each have a problem. Today we'll follow their story and show how our app solves their problems.



# Persona 1: James, The Student

- James is a junior at the Woods this year and is focusing on getting into his dream college
- He decided to load up his schedule with seven AP classes to achieve his goal
- He loves to read, but with his schedule he doesn't have the time to browse the library during school hours

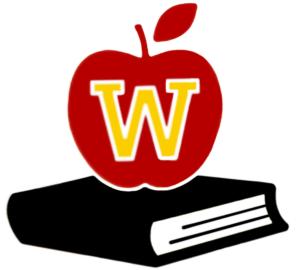




# Persona 2: Amy, The Librarian

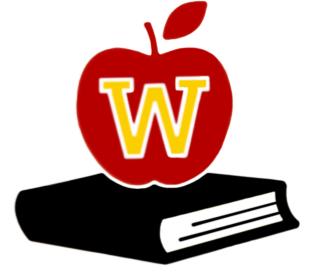
- Amy is a librarian who works at Cypress Woods High School
- She has been working at the school library for 25 years, and they have never updated their management system
- With a limited budget and resources, she would like to automate some functions to reduce the workload and improve efficiency





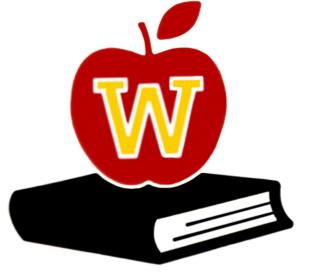
# How we solved their problems

- Problem: Manage the issuance of books and to provide other information at a school library.
- Solution: Create a mobile application to automate the book system management and provide remote access with 24/7 availability
- Our app solves both James' and Amy's problems



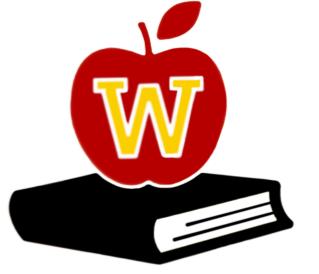
# Application Planning and Design

- Define user personas - whose problem are we solving
- Build product backlog by breaking down application requirements into user stories
- Use Agile development process, iterative development using product backlog and storyboard



# Epics

- An epic is a large user story that can be broken down into smaller user stories
  - EPIC Student: As a student, I want to be able to reserve remotely and check out any book from the library
  - EPIC Librarian: As a librarian, I want to be able to remind students and teachers when books are overdue and provide a map of the library to students and teachers
-

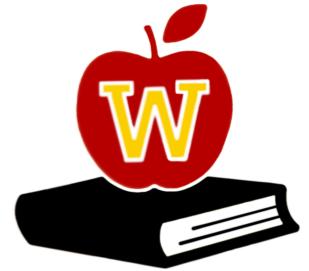


# User Story

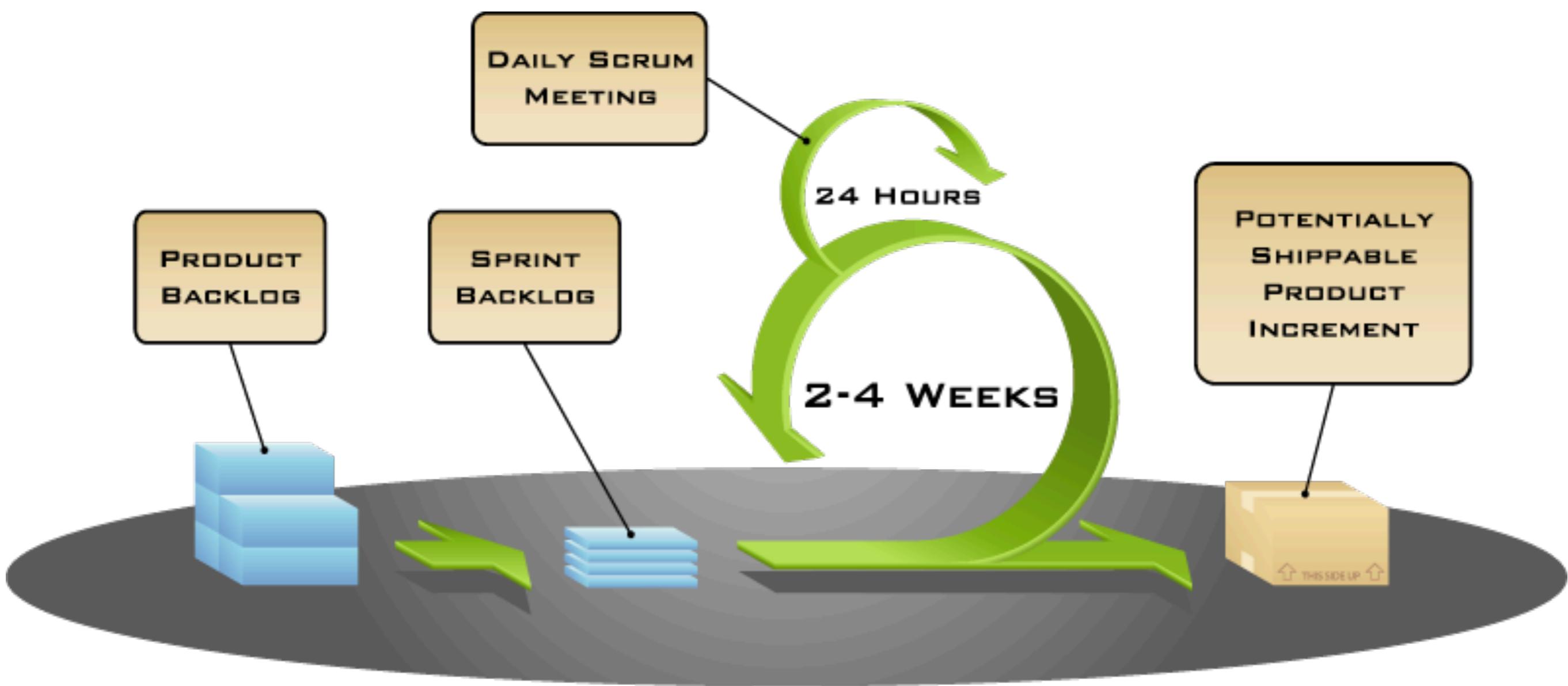
Story S4: As a student, I would like to check out any book in the library

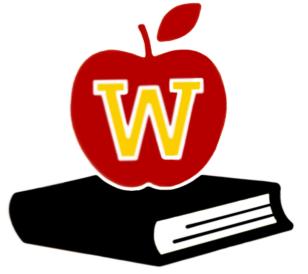
Acceptance Criteria:

- Click a button on the book details screen so the book gets checked out
- Upon check out, due date shows
- If the book is not available, “Place Hold” button should show



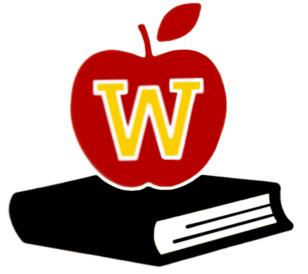
# Agile Development





## Wildcat Library Storyboard

Backlog	To Do	Doing	Done
Story S1: As the student, I would like to see the books arranged by genre <b>5</b>			
Story S2: As the student, I would like to browse all the available books <b>10</b>			
Story S3: As the student, I would like to see the details of a book with image, author, and title <b>5</b>			
Story S4: As the student, I would like to check out a book <b>10</b>			
Story S5: As the student, I would like to reserve a book if it is not yet available <b>7</b>			
Story S6: As the student, I would like to see the due dates of the books I checked out <b>4</b>			
Story S7: As the student, I would like to see the availability dates of the books I reserved <b>4</b>			
Story S8: As the student, I would like to be able to share my favorite books with my friends on social media <b>3</b>			
Story S9: As the student, I want to see a map of the library <b>5</b>			
Story L1: As the librarian, I would like to control access to the application through logins <b>5</b>			
Story L2: As the librarian, I want to be able to distribute the application to my patrons <b>5</b>			
Story L3: As the librarian, I want my patrons to be able to navigate between different functions quickly and seamlessly <b>3</b>			
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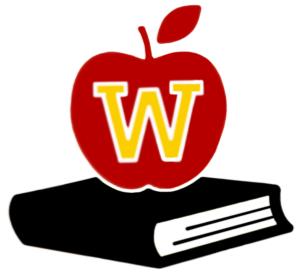
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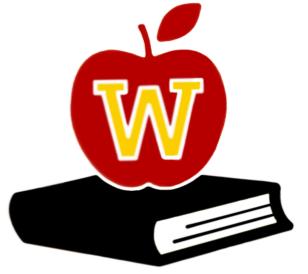
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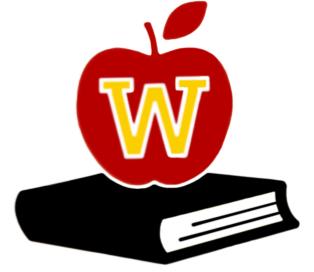
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# Installation

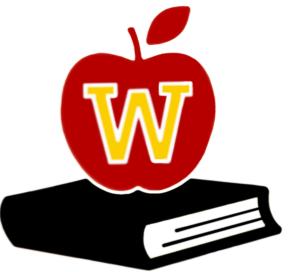
- The compiled and signed application is posted to the school server
- Any student who is able to access the library can download the application from the library computers after their identity is validated



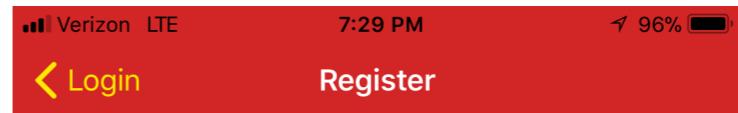
# Inputs/Outputs and Application Workflows

The description distributed with the app provides comprehensive information to the users about the app features, including:

- Login using a Wildcat Library account
- Browse genres and read book details
- Check out books and reserve any book in the library remotely right from your device
- Navigate the library with the map



# Creating Account and Signing In



Cypress Woods High School



Wildcat Library

Username

Password

Log In

Or

Register

Student Teacher

nielsbohr@gmail.com

123456

Niels

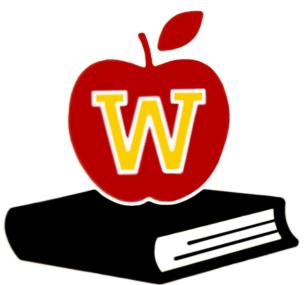
Bohr

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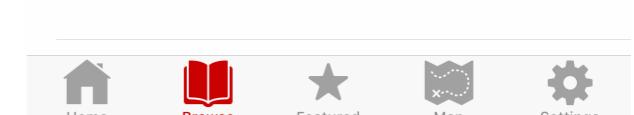
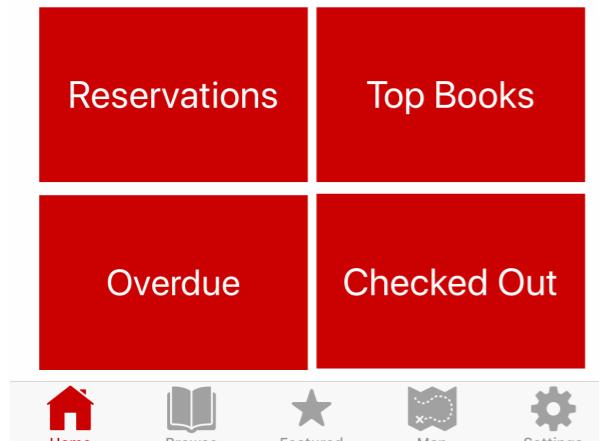
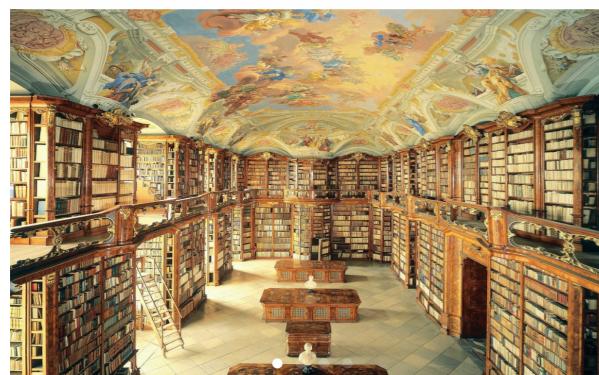
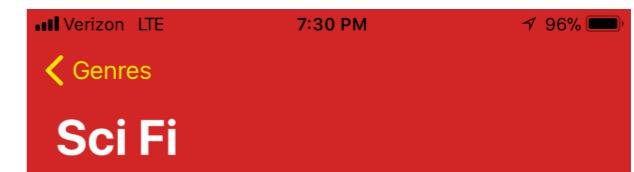
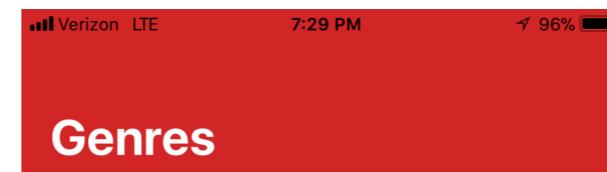
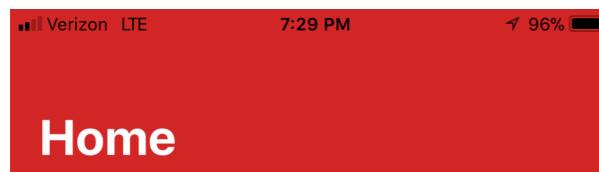
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Register

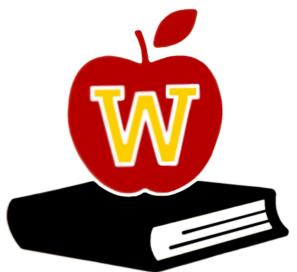
- James and Amy created a Wildcat Library account and signed into the app



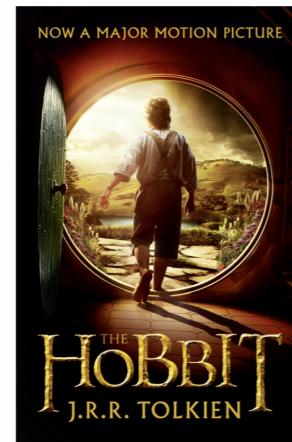
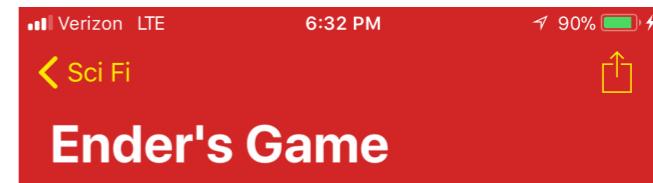
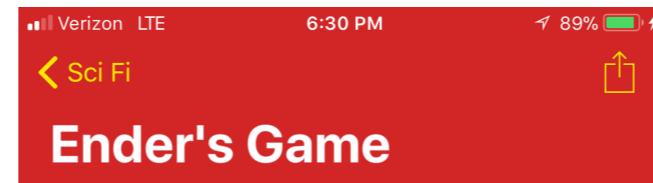
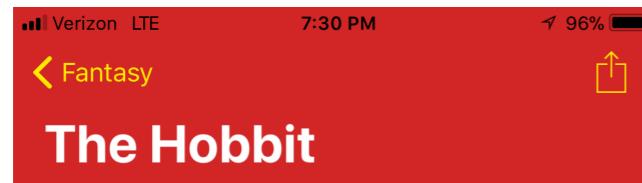
# Browsing Books



- James navigates to the “Browse” tab, and looks at books in his favorite genre
- The navigation is extremely simple to use due to the bottom menu design

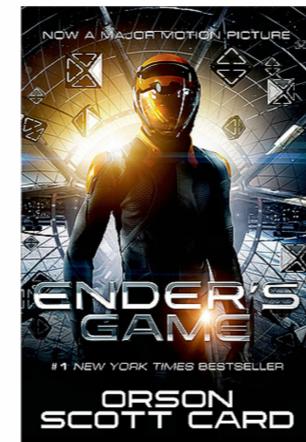


# Check Out



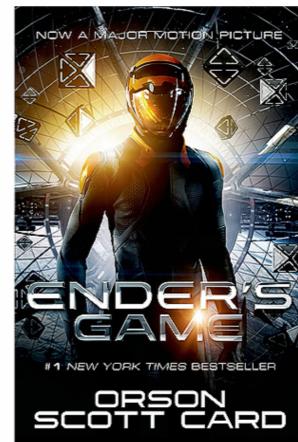
The Hobbit

J.R.R. Tolkien



Ender's Game

Orson Scott Card



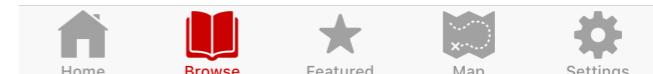
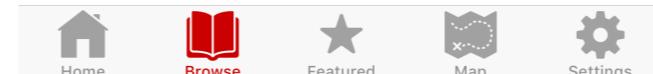
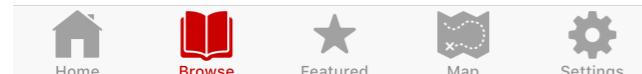
Ender's Game

Orson Scott Card

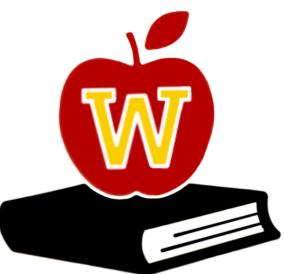
Check Out

This book is due in 3 days.

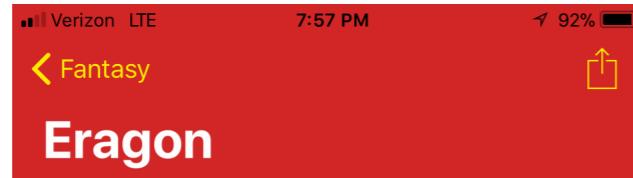
This book is overdue!



- James views the details for the books he wants and checks them out
- James is able to view the due date upon checkout, so Amy doesn't have to manually inform him

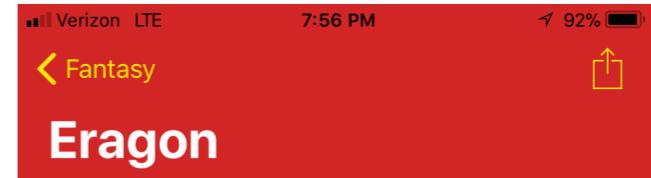


# Reserve



Eragon

Christopher Paolini

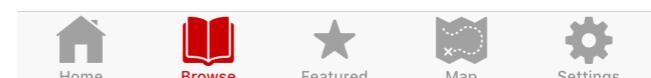
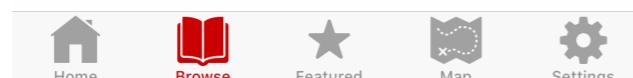


Eragon

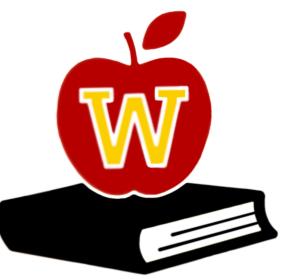
Christopher Paolini

Place Hold

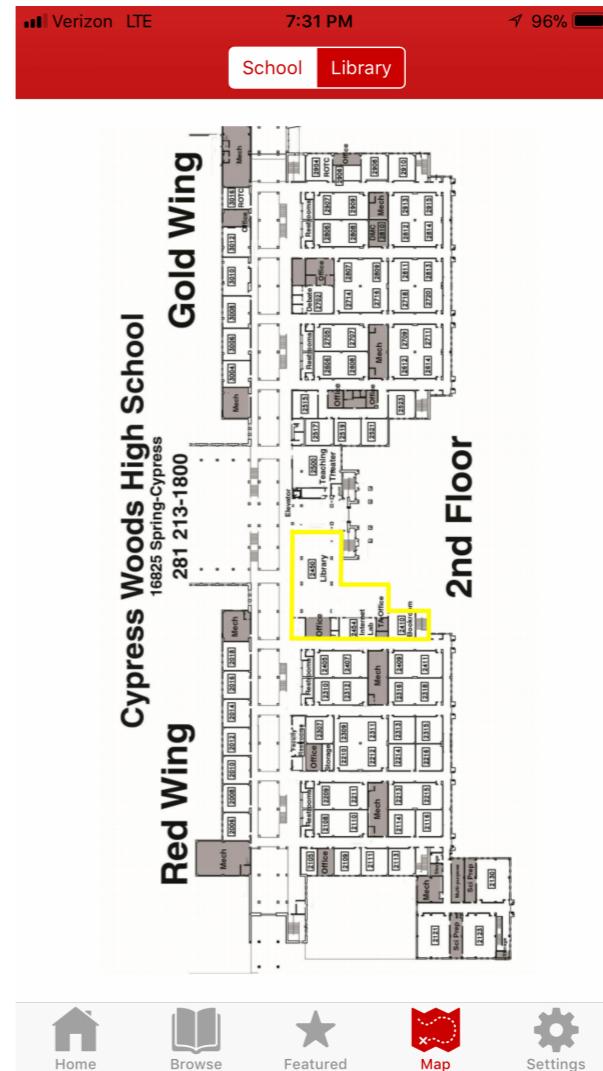
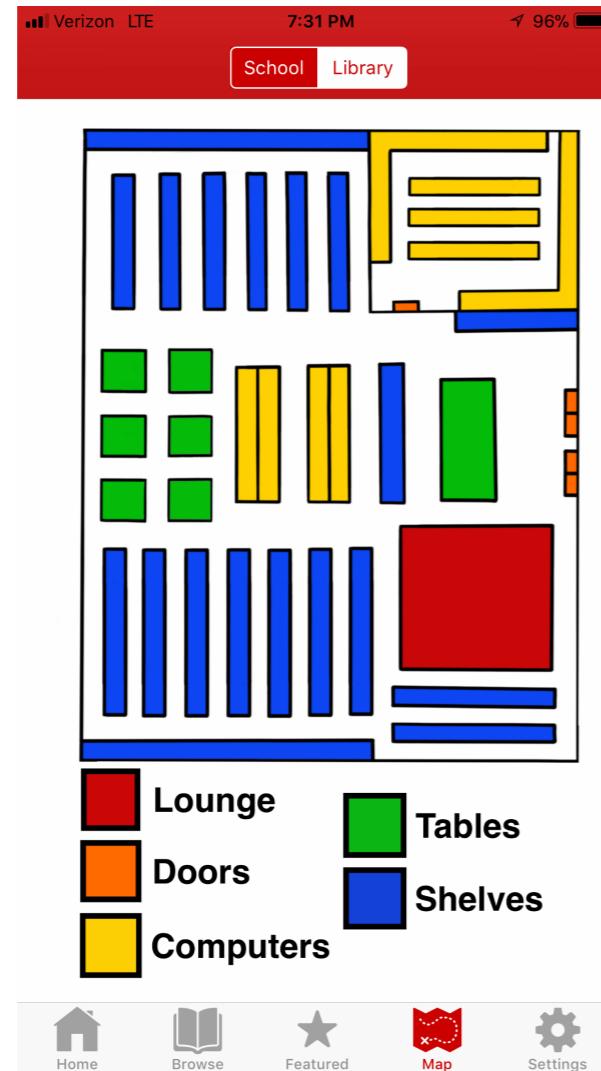
You are in queue, est. time: 14 days.



- James reserves a book that he wants but is already checked out
- He doesn't have to go to Amy anymore to get the availability estimates on his books



# Map



- The library map is available for easy reference
- Amy no longer has to tell students how to get around the library

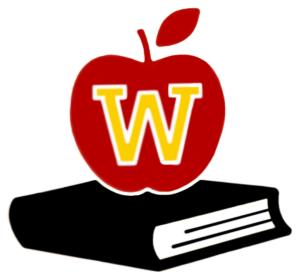


# Bug Report

The figure consists of three side-by-side screenshots of a mobile application interface, likely from an iPhone, showing the process of reporting a bug.

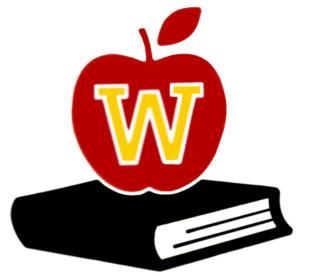
- Screenshot 1: Settings Screen**
  - Top status bar: Verizon LTE, 6:29 PM, 89% battery.
  - Red header bar: "Settings".
  - Red button: "Log Out".
  - Red button: "Report A Bug".
  - Bottom navigation bar: Home, Browse, Featured, Map, Settings (Settings is highlighted).
- Screenshot 2: Report A Bug Screen**
  - Top status bar: Verizon LTE, 6:29 PM, 89% battery.
  - Yellow header bar: "Report A Bug".
  - Text input field: "Crashing".
  - Text area: "Describe Your Problem:  
The app is crashing when I try to open it."
  - Red "Submit" button.
  - Bottom navigation bar: Home, Browse, Featured, Map, Settings.
- Screenshot 3: Confirmation Screen**
  - Top status bar: Verizon LTE, 6:29 PM, 89% battery.
  - Yellow header bar: "Report A Bug".
  - Text input field: "Subject".
  - Text area: "Describe Your Problem:  
The app is crashing when I try to open it."
  - Text box: "Thank You  
Your report has been submitted. We will fix the issue as soon as possible.".
  - Blue "Dismiss" button.
  - Red "Submit" button.
  - Bottom navigation bar: Home, Browse, Featured, Map, Settings.

- Our bug report system allows James to report any problems he might find straight to the developer

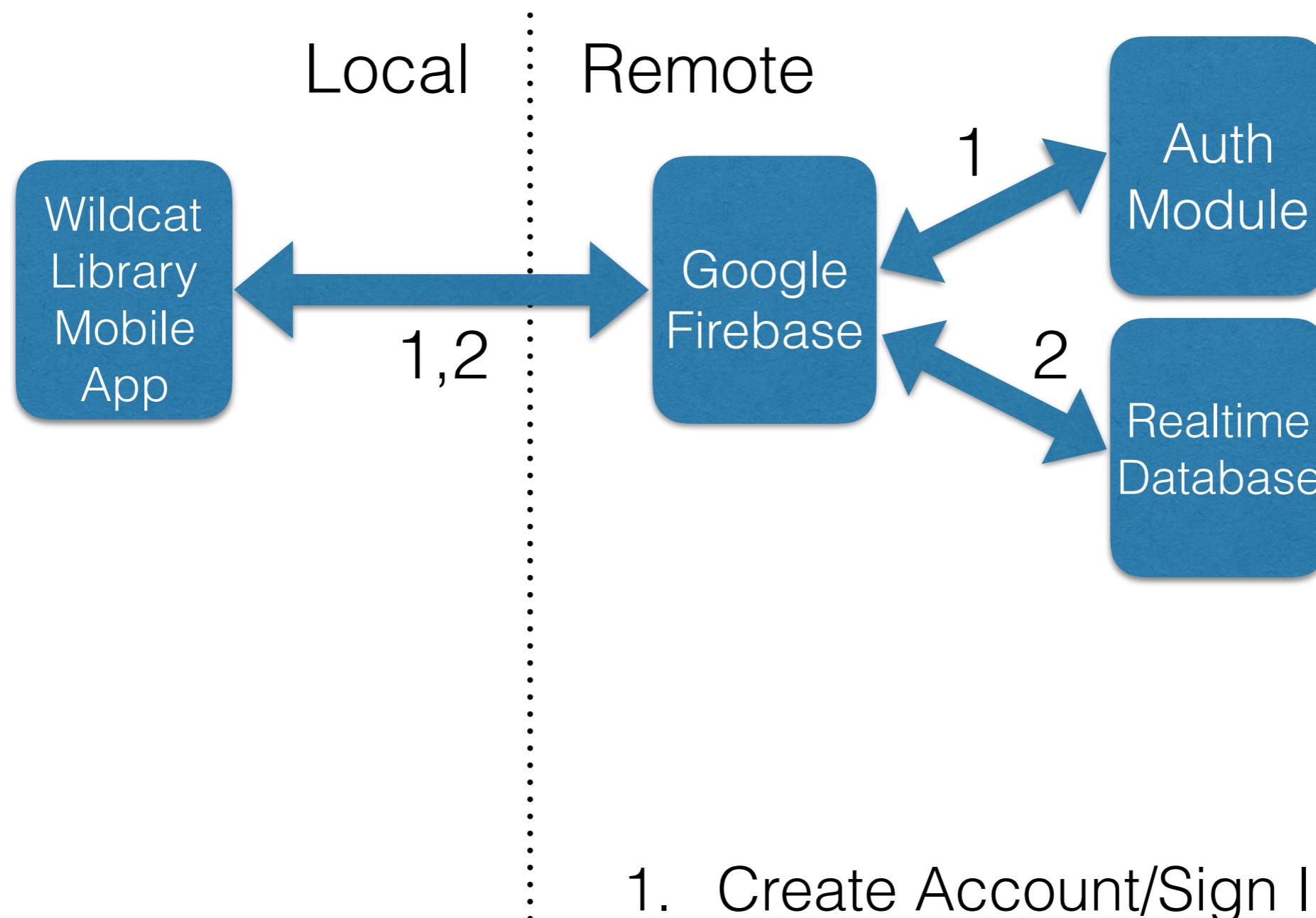


# Platform and Technology Stack

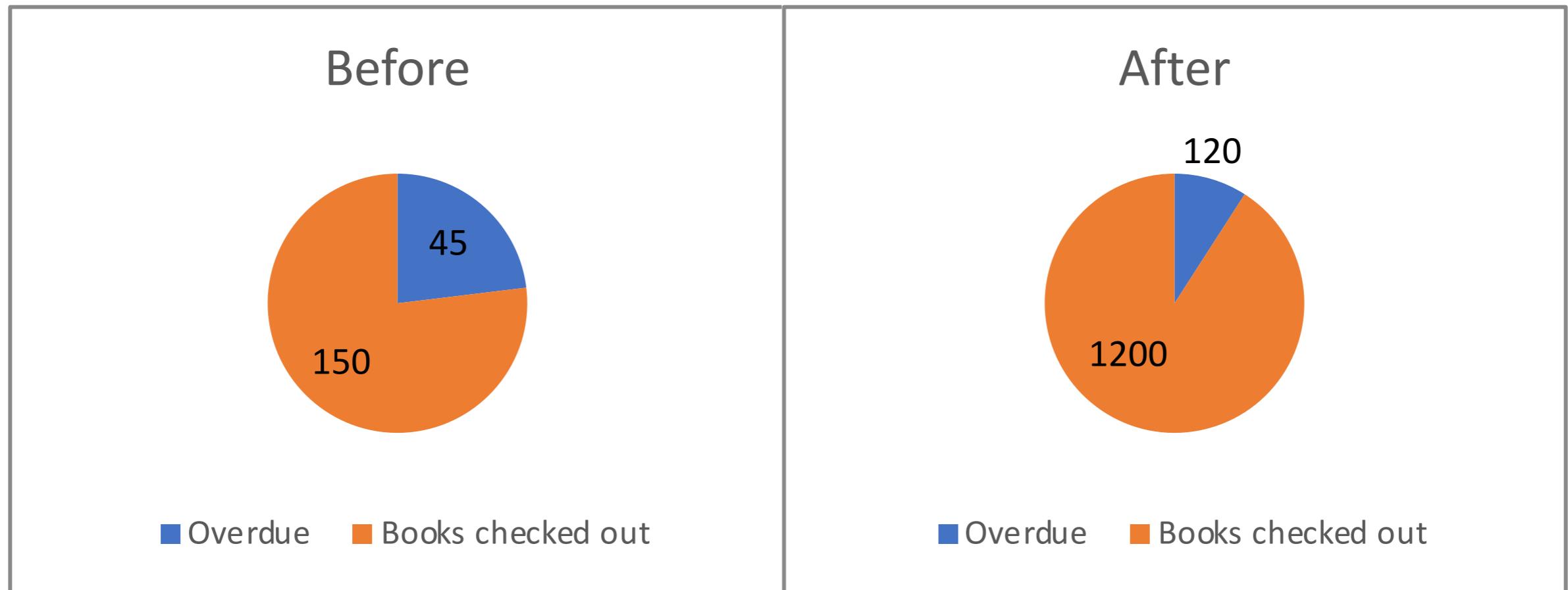
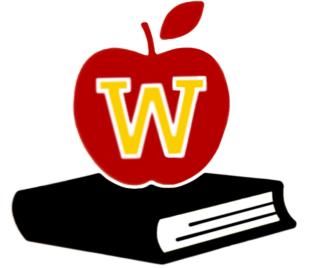
- Platforms explored include iOS, Android, and Windows
- iOS selected as our primary platform due to its popularity in the target demographic
- Xcode selected as Integrated Development Environment(IDE) for functionality, stability and ease of use
- Identified the most suitable technologies to achieve the functionality, including Google Firebase for storing book inventory, Firebase Authentication and Firebase Cloud Messaging
- Deployed to virtual iPhone X as well as an iPhone 7 Plus and an iPhone 6s



# Application Components and Information Flow



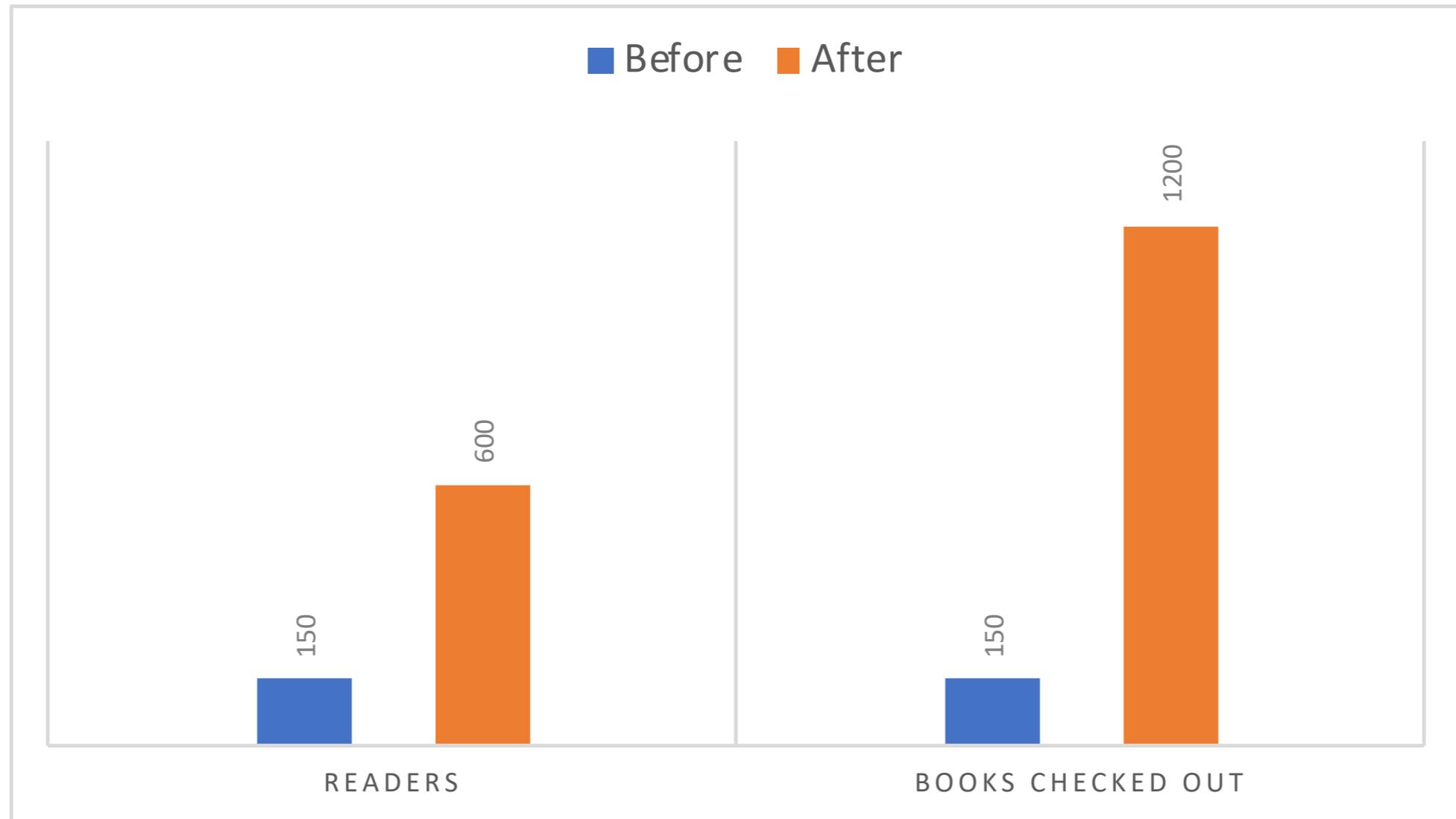
# Impact



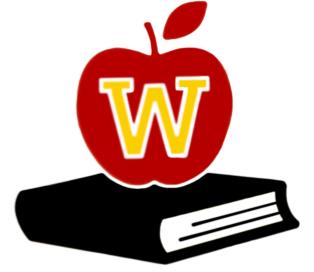
**Overdue books went down from 30% to 10%**



# Impact



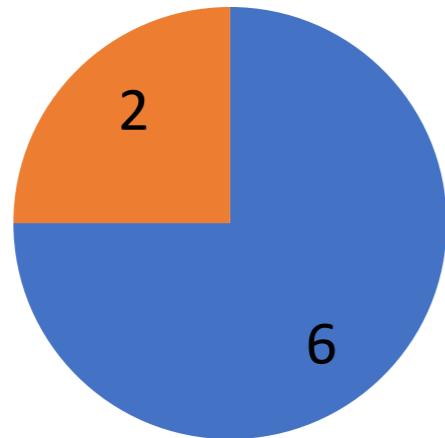
**Readers increased 4x and total books checked out increased 8x**



# Impact

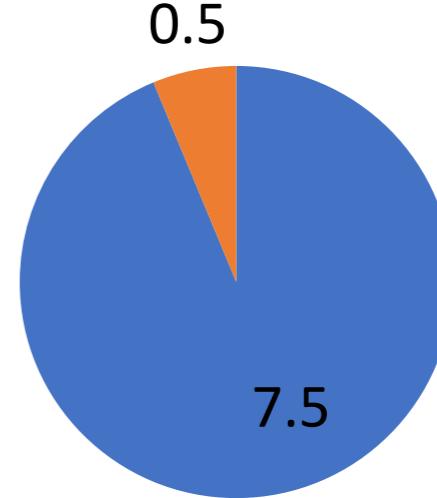
Time Spent (Hours)

Before



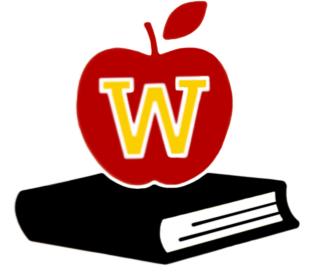
■ Other Activities ■ Non Productive Time

After



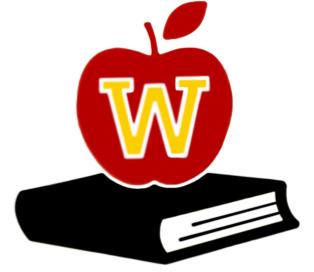
■ Other Activities ■ Non Productive Time

**The non productive time in Amy's day went from 25% to 6%, a 19% decrease**



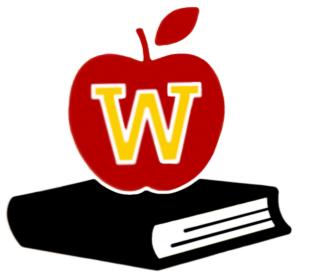
# Conclusion

- On the school bus, James was able to browse by category and quickly find the books he wanted
- With the increased flexibility, he was able to reserve and check out a number of books
- He received the Golden Patron award for checking out the most books without having any overdue books!



# Conclusion

- Amy was able to cut down the manual record keeping and reduce her workload
- She no longer had to help students around the library, giving her time to buy new books and bring in famous authors
- Her stress level plummeted because she stopped chasing students to return their overdue books



# Questions?