CSCI 5828
Foundation of Software Engg
What's it Costing?

Nisarg Shah
Gayatri Ghanakota
Rutvi Joshi

Project Report

List of final User Stories

User Story 0:

User Log In

The user logs in using their Google books account and the user information is retrieved from the database.

Estimate: 2 Priority: L

Completion status : Complete

User Story 1:

User Log In error

If the username is not present in the database give an error message and ask the user to try with a valid username.

Estimate: 2 Priority: M

Completion Status : Complete

User Story 2:

Retrieve Bookshelf

Retrieve list of bookID's of the books in the user's To-Read book shelf.

Estimate: 3 Priority: L

Completion Status : Complete

User Story 3:

Retrieve Prices

Retrieving prices of corresponding bookID's.

Estimate: 5 Priority: XL

Completion Status : Complete

User Story 4:

Saleability of Book

Check for free e-books and e-books not available

Estimate: 2 Priority: M

Completion Status : Complete

User Story 5:

Total

The total price of the entire bookshelf has to be calculated

Estimate: 1 Priority: M

Completion Status : Complete

User Story 6:

Sequential version

Running the code sequentially for a series of books.

Estimate: 3 Priority: M

Completion Status : Complete

User Story 7:

Concurrent version

Concurrency to have a faster implementation of code as compared to the sequential version.

Estimate: 5 Priority: XL

Completion Status : Complete

User Story 8:

UI-Login

Create the user interface for the user log in

Estimate: 2 Priority: M

Completion Status : Complete

User Story 9:

UI-Login Error

Create error screen for username not in the database.

Estimate: 2 Priority: M

Completion Status : Complete

User Story 10:

UI-Display bookshelf with Prices

Create the user interface for the display of the retrieved book shelf, prices and sale information.

Estimate: 3 Priority: M

Completion Status : Complete

User Story 11:

Username authentication

Authenticate username and obtain userID using Google API tokens.

Estimate: 5 Priority: XL

Completion Status : Modified

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Foundation of Software Engg Gayatri Ghanakota
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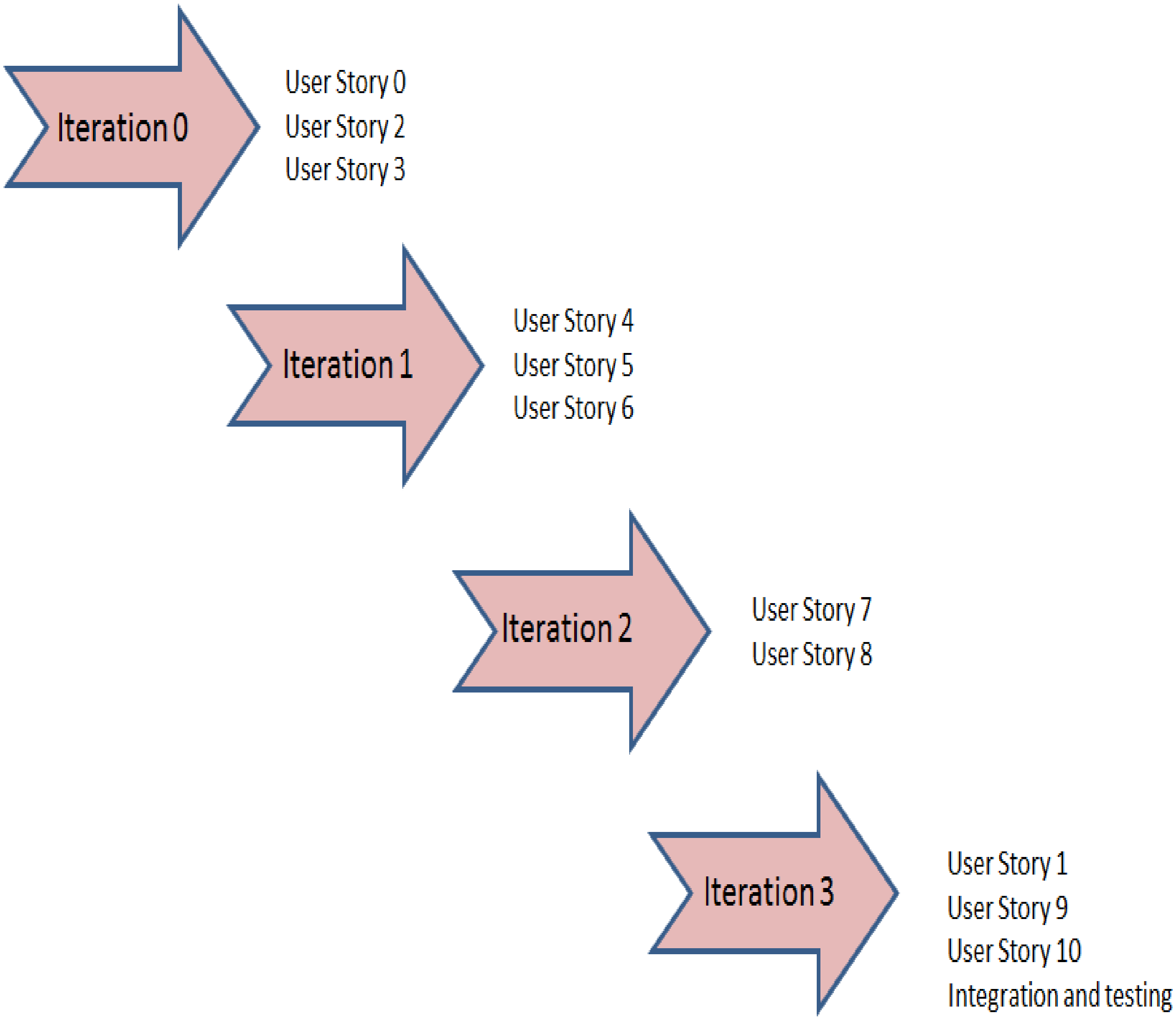
Iteration Plan:



Iteration 0
User Story 0
User Story 2
User Story 3

Iteration 1
User Story 4
User Story 5
User Story 6

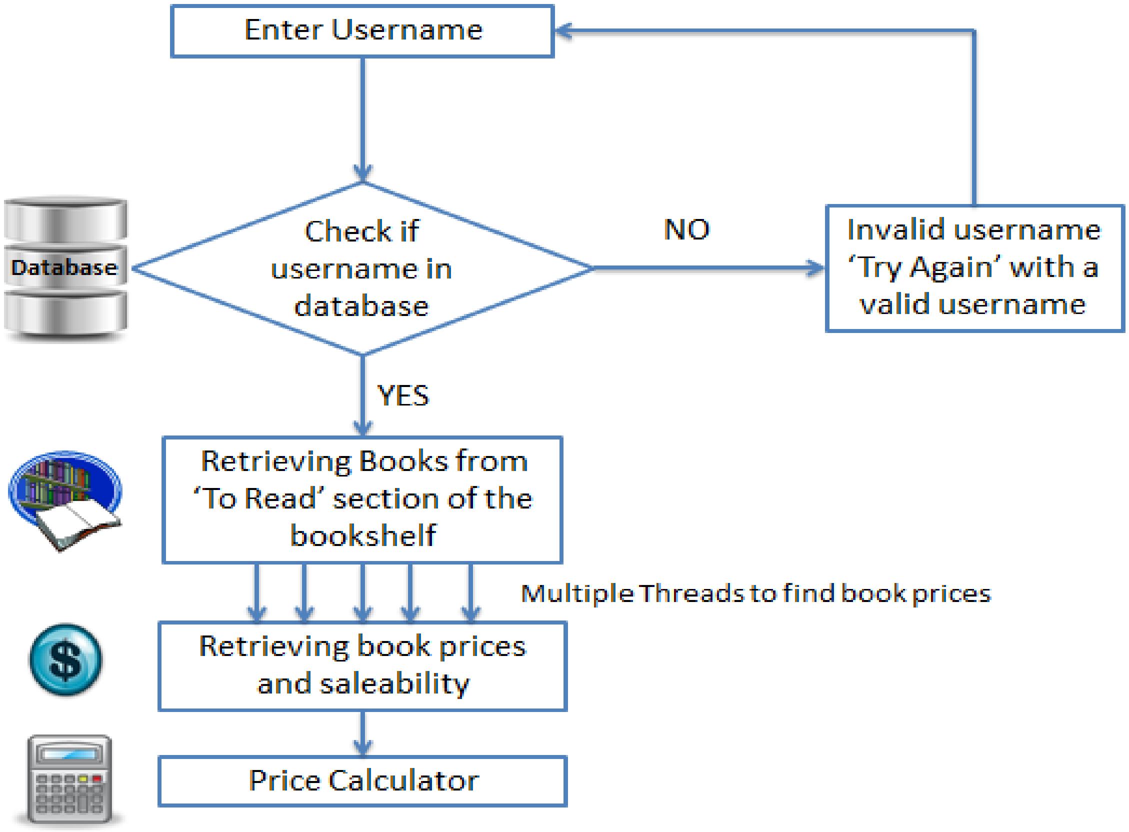
Iteration 2
User Story 7
User Story 8

Iteration 3
User Story 1
User Story 9
User Story 10
Integration and testing

Tools Used for the Project

1) Eclipse – Development environment
2) Google data plugin – Tool for interfacing code with Google Books API
3) Swing plugin – UI design

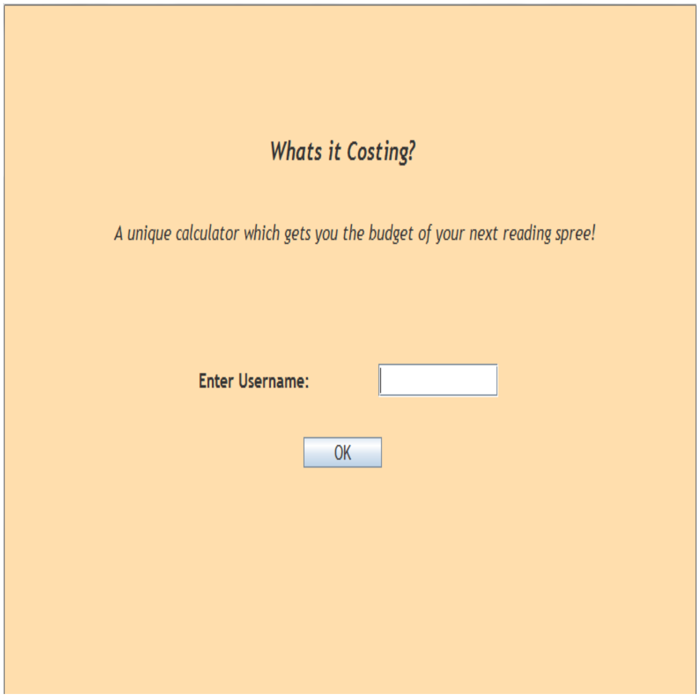
Final Structure:


Enter Username
Check if username in database
Database
NO
Invalid username 'Try Again' with a valid username
YES
Retrieving Books from 'To Read' section of the bookshelf
Multiple Threads to find book prices
Retrieving book prices and saleability
Price Calculator

How is concurrency handled?

- The E-book price calculator involves retrieving prices from the Google Books API.
- We have implemented a sequential as well as a concurrent version of the code.
- In order to implement the concurrent version we have used ThreadPools and ExecutorService.
- Since the task in hand is I/O intensive we implement more threads as compared to the number of cores.
- The number of partitions used is equivalent to the number of books present in the 'To Read' section of the user's bookshelf.
- Because of this we introduce isolated mutability where the threads do not have to share any information between each other.
- The prices retrieved from each thread is than added to the final total using the 'Callable' and 'Future' constructs in Java.

UI Interface

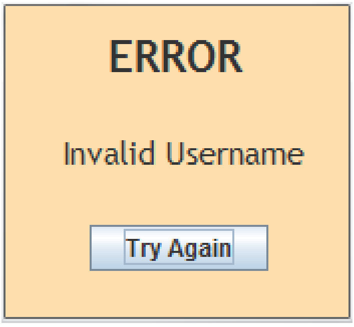


Whats it Costing?

A unique calculator which gets you the budget of your next reading spree!

Enter Username:

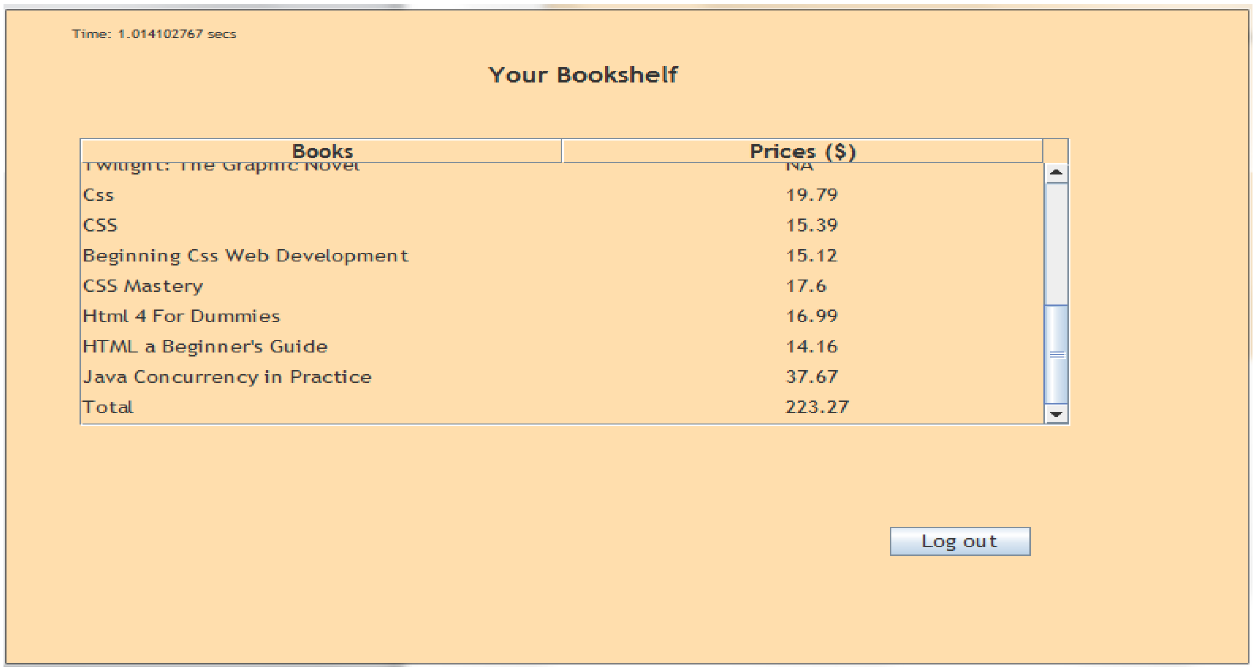
a) Enter Username screen



ERROR

Invalid Username

b) Invalid Username screen



Time: 1.014102767 secs

Your Bookshelf

Books	Prices ($)
Twilight: The Graphic Novel	NA
Css	19.79
CSS	15.39
Beginning Css Web Development	15.12
CSS Mastery	17.6
Html 4 For Dummies	16.99
HTML a Beginner's Guide	14.16
Java Concurrency in Practice	37.67
Total	223.27

c) Bookshelf and prices screen

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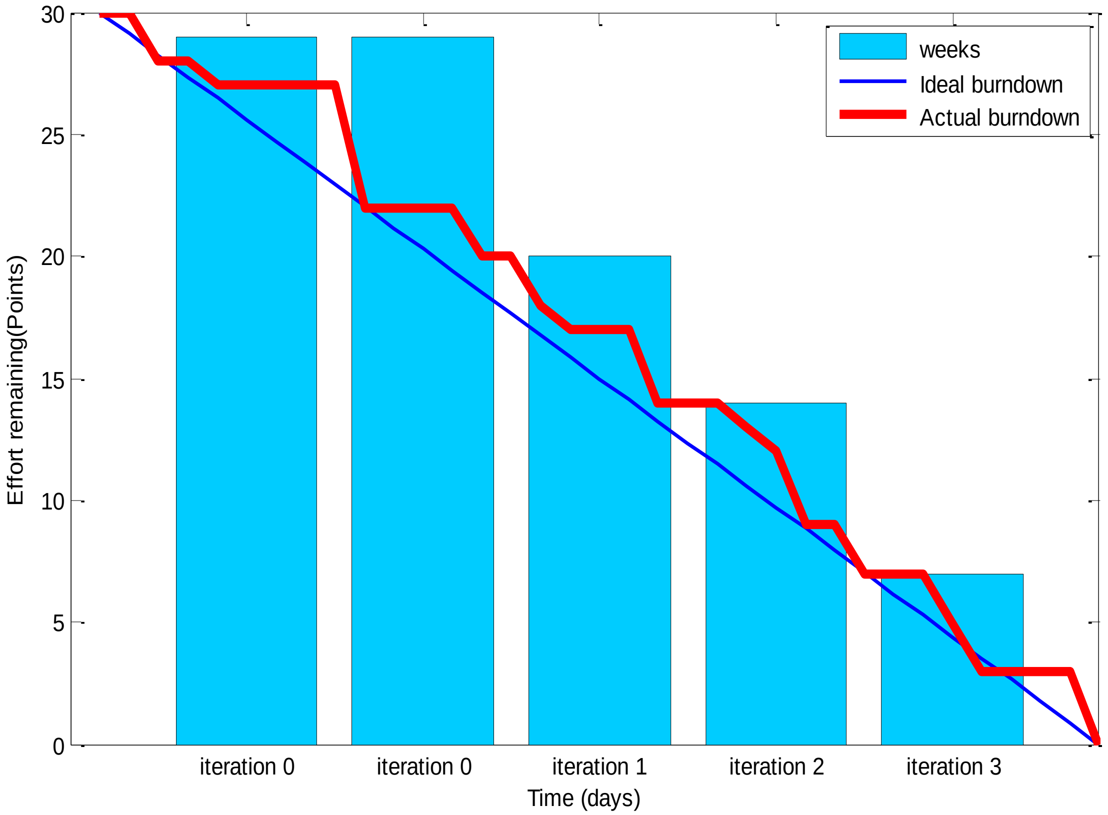
Burn Down Chart:



Velocity:

estimated velocity = total number of points / iterations

= 30 / 4

= 7.5

current team velocity = points completed / number of iterations

Iterations	Iteration 0	Iteration 1	Iteration 2	Iteration 3
Velocity	10	6	7	7