

Project Team 6 - Milestone #4

Andrew Wang, Keyu Lin, Lexie King, Shrey Bahadur

Project Overview

Repository: https://github.com/lhking1122/326_Course_Recommendation_System.git

Issues: https://github.com/lhking1122/326_Course_Recommendation_System/issues

Milestones: https://github.com/lhking1122/326_Course_Recommendation_System/milestone/2

Description: The user will input the courses they have already taken, and optionally any academic or career interests they have, and the app will recommend future courses they might be interested in. The recommendations will also consider prerequisite/eligibility requirements to ensure only available courses are suggested. A visual CS major course progress map will show completed courses, current courses, and suggested future courses to help students plan their academic path.

Key Features:

- User Input: Students can enter courses taken, interests, and career goals.
- Course Recommendation: The system recommends appropriate courses based on inputs and provides course details (e.g., prerequisites, credits, schedule, etc.).
- Course Schedule Builder: Students can select courses and generate schedules, the system will indicate time conflicts and provide suggestions for adjustments.
- Course description search up: Students can search up interested courses through the course details tab.
- Course Reviews: Students can look at and leave reviews for courses

Roles

Lexie King:

- Role: Project Manager
- Issues: General UI Design, Past Course Storage, Course Details, Course Recommendation Home Page

Shrey Bahadur:

Role: Note Taker

Issues: Course Review Page, User login data,

Andrew Wang:

Role: Integration Manager

Issues: Ensuring UI, data structures, and the various pages are compatible with each other. Course Progress Chart page.

Keyu Lin:

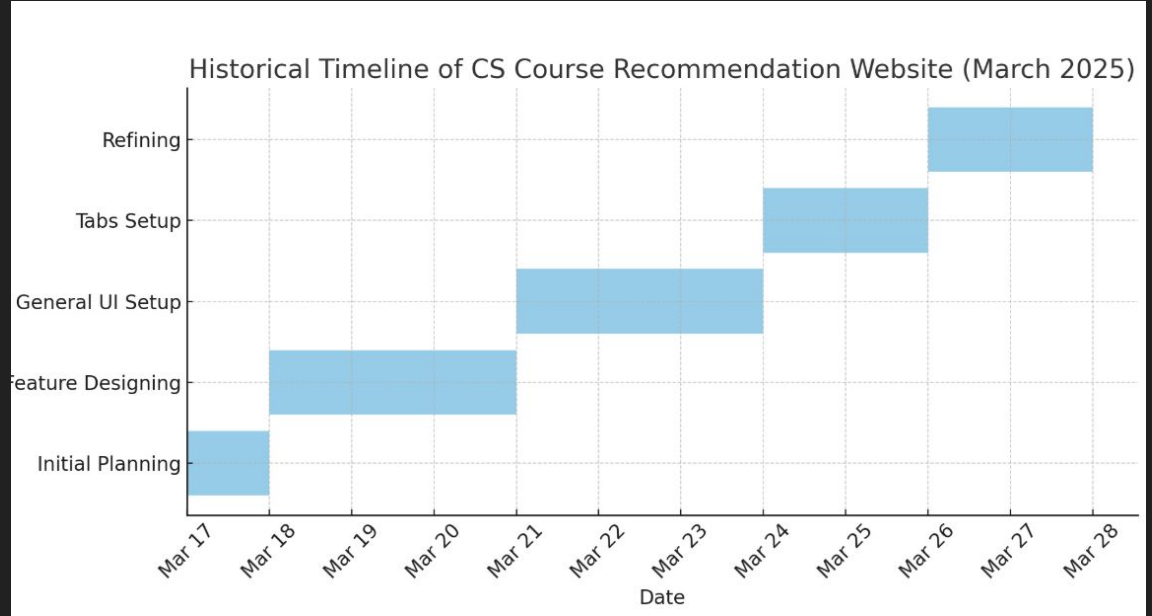
Role: User Experience Tester

Issues: User Data Structure, Course Recommendation Home Page, User Experience Tester

Historical Timeline

Issues:

- #5: March 28
- #7: March 24
- #8: March 24
- #10: March 24
- #19: March 28



Lexie - Assigned tasks & Pull Request







- Project manager
- General UI Design
- Course Recommendation Home Page UI
- Course Details Page UI
 - Course Data Structure
 - Course search within Course Details Page
- User Data Structure
- Past Course Storage

Pull Request Links

https://github.com/lhking1122/326_Course_Recommendation_System/pull/21

https://github.com/lhking1122/326_Course_Recommendation_System/pull/22

https://github.com/lhking1122/326_Course_Recommendation_System/pull/23

<input type="checkbox"/>	 Course-Details-Page #23 by lhking1122 was merged 5 days ago	
<input type="checkbox"/>	 Course-Details-Page #22 by lhking1122 was merged last week	
<input type="checkbox"/>	 Course details page #21 by lhking1122 was merged last week	

Lexie - Completed Task Description

- General UI Design
 - Made the first version of UI design for course recommendation webpage.
- Course Recommendation Home Page UI
 - Set up an temporary home page UI, including headers, tabs, search bar, buttons, and temporary course description box.
- Course Details Page UI
 - Course details page shows full course list by default. After course number or title/keyword is inputted into the search box and search button is pressed, course details page will show list of courses based on search result.
 - Course Data Structure
 - Json files created, extracted Fall and Spring 2025 courses from umass course description website, as well as course offering website, merged all data into a single json file called `complete_course_list.json`.
 - Course search within Course Details Page (For next milestone)
 - When user input course number (ex: 326), full course title, or keyword (ex: algorithm) and clicks search button, all matched courses will display on the course details page.

Lexie Work Summary - commits

commit 55e56b268872720b0b8d9335d6b5652bcf7d164f
Author: lexie <lhking@umass.edu>
Date: Mon Mar 17 14:58:39 2025 -0400

created course_details_pages.js

commit 84e0bebf0699dbbec28446446c57c88263732acb
Author: lexie <lhking@umass.edu>
Date: Mon Mar 17 14:43:19 2025 -0400

added search box on course details page.

commit 3fa41d0ed06a2151c1a46e8d67d8bd0a4c5effb8
Author: lexie <lhking@umass.edu>
Date: Mon Mar 17 14:28:54 2025 -0400

edited gap between button and course list

commit f17ca51203d8ff045ba2f5bdb929db6fbcdeb1bd
Author: lexie <lhking@umass.edu>
Date: Mon Mar 17 14:24:19 2025 -0400

temp course details page created.

commit f0d50bf4772ad95b98b5ab4ef8b848710eb8ff5d
Author: lhking1122 <lexiek1122@gmail.com>
Date: Wed Mar 12 10:32:20 2025 -0400

Update README.md

added Lexie to group members

commit 2d809a020e48fc665f085fc41b4e43d837f5754e
Author: lexie <lhking@umass.edu>
Date: Tue Mar 25 14:43:45 2025 -0400

Edited course description. Added Fall and Spring 2025 course list, merge_course_list.js to merge and filter duplicate courses from Fall and Spring 2025 courses. Added course_add_semester.js to add course offering semester to the full course list. Refined search course algorithm.

commit 0ca8fe15df2a0e0c152397e217665a89075b4ebb
Author: lexie <lhking@umass.edu>
Date: Thu Mar 20 11:17:14 2025 -0400

Changed course details page layout, added course descriptions to details page, edited course descriptions dataset.

commit 6437191ee31db5a3b47d1a47a77abf3e618dfb24
Author: lexie <lhking@umass.edu>
Date: Mon Mar 17 21:11:18 2025 -0400

Added course description list

commit 54c5757c3ee7cc22698f4b3c8fdd297fac3f7418
Author: lexie <lhking@umass.edu>
Date: Mon Mar 17 20:32:27 2025 -0400

added cs_course list, including course number, course title, credits and offered semester. Added course description list

commit a9f7acab7f89b298cb53449383fae51c847b90a5
Author: lexie <lhking@umass.edu>
Date: Mon Mar 17 15:44:13 2025 -0400

edited course detail page header, home page header, course details page css file

Lexie - Screen Shots of UI Implementation #1

Course Recommender

[Home](#)[Course Details Page](#)[My Profile](#)[Recommendations](#)[Settings](#)

Input Your Information

Past Courses

List your past courses...

Interests

Enter your interests

Career Goals

Enter your career goals

Submit

Course Recommendations

Course Title 1

Short description of course 1 goes here.

Course Title 2

Short description of course 2 goes here.

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Lexie - Screen Shots of UI Implementation #2

Course Recommender

[Home](#)[Course Details Page](#)[My Profile](#)[Recommendations](#)[Settings](#)

Search Courses

CICS 110: Foundations of Programming

Instructors: Cole Reilly, Jacob Urisman, Brett Mullins, Prit Pritam Shah, Aadam Anish Lokhandwala

Description: An introduction to computer programming and problem solving using computers. This course teaches you how real-world problems can be solved computationally using programming constructs and data abstractions of a modern programming language. Concepts and techniques covered include variables, expressions, data types, objects, branching, iteration, functions, classes, and methods. We will also cover how to translate problems into a sequence of instructions, investigate the fundamental operation of a computational system and trace program execution and memory, and learn how to test and debug programs. No previous programming experience required. (Gen. Ed. R2) Prerequisite: R1 (or a score of 15 or higher on the math placement test Part A), or one of the following courses: MATH 101&102 or MATH 104 or MATH 127 or MATH 128 or MATH 131 or MATH 132. 4 credits.

Prerequisites: R1 (or a score of 15 or higher on the math placement test Part A), or one of the following courses: MATH 101&102 or MATH 104 or MATH 127 or MATH 128 or MATH 131 or MATH 132

Credits: 4

Offered Semester: Fall and Spring

CICS 127: Introduction to Public Interest Technology

Instructors: Francine Berman

Description: Today's world is complex and tech driven. How do we use the tools of information technology to solve problems in a socially responsible way, i.e., in a way that both empowers us and promotes the well-being of the communities in which we live? In this course, we describe the socio-technical world and pragmatic strategies for promoting personal and social responsibility. We explore the questions: What is the public interest in a socio-technical world? What strategies can we use to promote social responsibility in the public sector, private sector, and general public? What can each of us do to make the world a better place? This course is for everyone at all levels and with all interests. No programming or prerequisites are required. We focus on building skills to think analytically, broadly, and strategically, as well as to communicate effectively about complex problems with societal impact. Assignments will provide students multiple paths to success. Counts towards the IT minor and is

Lexie - Screenshots of Code Snippet and Explanation

- The part in the first picture sets the overall format for our Course Details page, with search box and button on the left sidebar, and course description on the right.
- The second picture is a snippet of our course recommendation homepage. Where we keep all our available tabs of our website.

```
<main>
  <!-- Sidebar for search -->
  <div class="sidebar">
    <h2>Search Courses</h2>
    <input type="text" id="searchBox" placeholder="Search for a course...">
    <button id="searchBtn">Search</button>
  </div>
  <div id="courseList"></div>
  <div id="courseDetails"></div>

  <!-- Temp course description, will be replaced by js and json -->

  <div class="description">
    <h2>COMPSCI 326: Web Programming</h2>

    <p><strong>Instructor:</strong> Meng-Chieh Chiu</p>
    <p><strong>Credits:</strong> 4</p>
    <p><strong>Frequency:</strong> Fall and Spring</p>
    <p><strong>Prerequisites:</strong> COMPSCI 220 (or COMPSCI 230) with a grade of C or better</p>
  </div>
</main>
```

```
<header>
  <h1>Course Recommender</h1>
  <nav>
    <ul>
      <li>Home</li>
      <li><a href="course_details_page.html?id=1">Course Details Page</a></li> <!-- New Tab -->
      <li>My Course Progress</li>
      <li>My Profile</li>
      <li>Settings</li>
    </ul>
  </nav>
</header>
```

Lexie - Challenges and Insights

I haven't encountered any challenge for this milestone. But something I found challenging for future milestones is the data collecting progress for courses (course list, description, and all the details including instructors, credits and offered semesters), I had to go on Umass CS course description website to gather all the basic information, and write a small program that automatically convert everything I need into a json file. Then I had to go to the CS course offering website to gather the semester each course if offered (which I wrote another small program to grab data), then write another program to merge everything into a final json file.

Lexie - Future Improvements & Next Steps

Next I'm going to refine the UI of the webpages as we add more features. And I'm going to add the search feature of the course details page where users can search up courses by course number, course title and keywords. I'm also going to work on user data structure and past course storage.

Lexie - Links to Issues

https://github.com/lhking1122/326_Course_Recommendation_System/issues/13

https://github.com/lhking1122/326_Course_Recommendation_System/issues/12

https://github.com/lhking1122/326_Course_Recommendation_System/issues/10

https://github.com/lhking1122/326_Course_Recommendation_System/issues/9

https://github.com/lhking1122/326_Course_Recommendation_System/issues/8

https://github.com/lhking1122/326_Course_Recommendation_System/issues/7

https://github.com/lhking1122/326_Course_Recommendation_System/issues/6

Andrew Work Summary

Worked on the course selection page UI. Implemented the previous flowchart mockup into a separate page/tab of our website.

Course Recommender

[Home](#)[Course Details Page](#)[My Course Progress](#)[My Profile](#)[Settings](#)

BS-CS Tracking Form for Major Requirements

Effective Spring 2023

Four Math Courses	Three Introductory CS Courses
<div>MATH 131 Calc I</div> <div>MATH 132 Calc II</div> <div>MATH 233 Multivariate Calc OR STAT 315 Stats I</div> <div>MATH 235 Linear Algebra</div>	<div>CICS 110 Foundations of Programming</div> <div>CICS 160 Object Oriented Programming</div> <div>CICS 210 Data Structures</div> <div>Four CS Core Courses</div> <div>COMPSCI 240 Reasoning Under Uncertainty</div> <div>COMPSCI 250 Intro to Computation</div> <div>COMPSCI 220 Programming Methodology</div> <div>COMPSCI 230 Comp Sys Principles</div>
Eight Upper-Level CS Courses	
<div>COMPSCI 311 Algorithms</div> <div>COMPSCI/INFO/CICS 300+</div> <div>COMPSCI 300+</div> <div>COMPSCI/INFO/CICS 300+</div> <div>COMPSCI 320 OR COMPSCI 326</div>	

Andrew Work Summary

This page is designed for a user to be able to select the courses they've taken in an intuitive manner, with the website saving their selections for future visits. This provides a very easy and pleasant user experience.

The flowchart is made with SVG code, for a design that will scale on any size screen, while being able to be edited easily in SVG/graphic editors. HTML text boxes were overlaid onto the flowchart text boxes, to provide an operable input field within the flowchart. Non-text box fields will be clickable.

Andrew Work Code Snippet

```
<!-- Overlay input fields positioned absolutely -->
<input type="text" id="CS_300_1_input" class="text-input" style="left: 210px; top: 630px;">
<input type="text" id="CS_300_2_input" class="text-input" style="left: 350px; top: 630px;">
<input type="text" id="CS_300_3_input" class="text-input" style="left: 490px; top: 630px;">
<input type="text" id="CS_300_4_input" class="text-input" style="left: 70px; top: 740px;">
<input type="text" id="CS_400_1_input" class="text-input" style="left: 210px; top: 740px;">
<input type="text" id="CS_400_2_input" class="text-input" style="left: 350px; top: 740px;">
<input type="text" id="CS_400_3_input" class="text-input" style="left: 490px; top: 740px;">
</div>
</div>

<button id="submitBtn">Submit Selected Courses</button>
```

This part of the code overlays the text boxes on top of the SVG graphic, while allows for the flowchart to be designed in SVG instead of HTML, while still being interactive on our HTML website. This is achieved by using absolute positioning. Since SVGs also use absolute positioning, it can be overlaid exactly without guesswork.

Andrew Work Commits

Commit **7503e15**



voidpls committed 10 minutes ago

ui for course selection flowchart



main (#28)

▼ src/course_progress_chart.html

+219 ...

```
... @@ -0,0 +1,219 @@  
1 + <!DOCTYPE html>  
2 + <html lang="en">  
3 + <head>  
4 +   <meta charset="UTF-8">
```

Andrew Work Relevant Issues/PRs

https://github.com/lhking1122/326_Course_Recommendation_System/issues/5#issue-2901573094

https://github.com/lhking1122/326_Course_Recommendation_System/pull/28

Andrew Work Challenges and Insights

Overlaying the input boxes on the SVGs required doing some pixel math, but overall it wasn't too tedious. I had some issues with styling/CSS as well, specifically positioning and centering. Choosing to use SVG I believe is kind of intuitive, as SVG code is not only similar to HTML syntactically, you can also use CSS to directly style SVG elements.

Andrew Work Next Steps

The next steps would be to make the course selection flowchart interactive, being able to capture a list of courses the user has selected/inputted. Also implementing the pre-2023 flowchart.

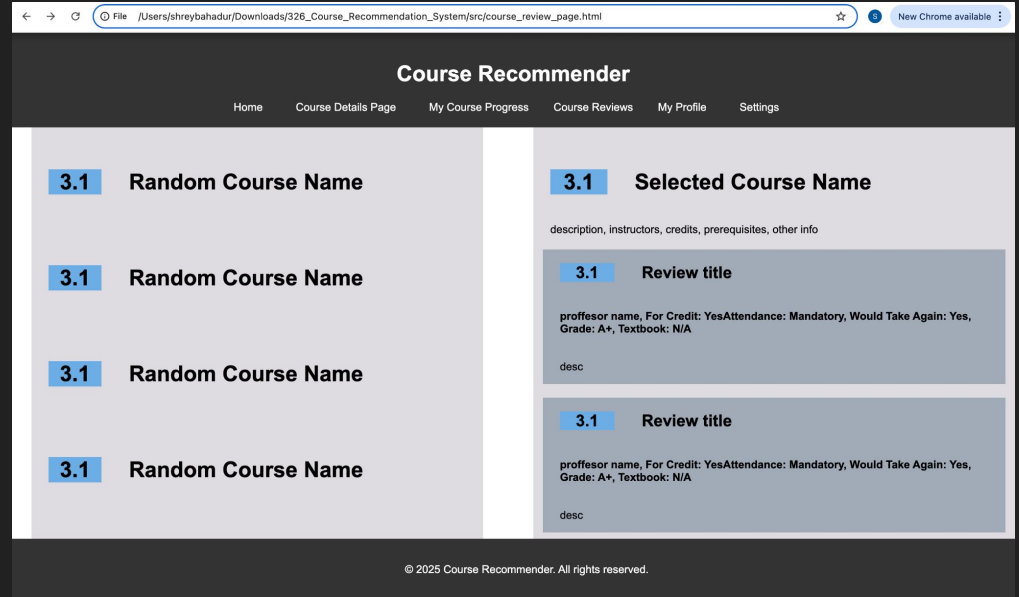
https://github.com/lhking1122/326_Course_Recommendation_System/issues/29

https://github.com/lhking1122/326_Course_Recommendation_System/issues/30

Shrey Work Summary

I worked on the course review UI.

Here the user can look at reviews of all of the courses.



Shrey - Commits and PRs and Issues

PR link:

https://github.com/lhking1122/326_Course_Recommendation_System/pull/32

Issue link:

https://github.com/lhking1122/326_Course_Recommendation_System/issues/19

Commits:

added selected course view component

 shreyBaha committed 2 hours ago

added main list component and list elements to review page

 shreyBaha committed 3 hours ago

initialized course review page

 shreyBaha committed 5 hours ago

Commits

 main

 All users

 All time

Commits on Mar 28, 2025

Merge pull request #32 from lhking1122/shrey/course_review_mock

 shreyBaha authored 1 hour ago

Verified

218708c

Merge branch 'main' into shrey/course_review_mock

 shreyBaha authored 1 hour ago

Verified

b59fd8

styling changes

 shreyBaha committed 2 hours ago

5075b57

Shrey - Code snippet

The snippet on the top corresponds to list on the left of the screen displaying all the courses with their ratings

```
<main>
  <ul class="course-list">
    <li class="course-item">
      <div class="rating-box">
        <h1 class="rating-text">3.1</h1>
      </div>
      <div class="name-box">
        <h1 class="name-text">Random Course Name</h1>
      </div>
    </li>
```

The snippet on the bottom corresponds to the list of reviews of the selected course on the left side of the screen

```
<ul class="review-list">
  <li class="review-item">
    <div class="line">
      <div class="rating-box">
        <h2 class="rating-text">3.1</h2>
      </div>
      <div class="review-title-box">
        <h2 class="review-title-text">Review title</h2>
      </div>
    </div>
    <div class="line">
      <h4 class="additional-info">profesor name, For Credit: YesAttendance: Mandatory, Would Take Again</h4>
    </div>
    <div class="line">
      <p class="paragraph">desc</p>
    </div>
  </li>
```

Shrey - Challenges

The biggest challenge in creating this page was doing the css to have everything aligned how I wanted as well as implementing scrolling within the container I wanted to scroll. This required some revising of my html to create some extra divs.

Shrey - Future improvements

I still need to make it so the user can add a review for a course on that page. I should also meet with my teammates so we can have a cohesive UI where we have similar component designs and color schemes.

Keyu Work Summary

I found that the text box on the home page was not convenient enough as a past course input, and a large number of courses were easy for users to enter incorrectly in the same text box. Therefore, I changed the text box to a button so that every time the user clicks on the button a new text box is generated for the user to enter the past course.