Dhirubhai Ambani University Technology
Formerly DA-IICT

Classync - Virtual Classroom Platform

Sprint 2 Report

Group - 33

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Contents

1. Overview / Summary

Sprint 2 focused on designing and implementing the public and authenticated homepage for the Virtual Classroom Platform. The homepage provides a clear entry point with responsive navigation, quick access to core areas (My Courses, AI Tools, Admin), course discovery, and personalized widgets for signed-in users. It emphasizes performance, accessibility, and modular components for reuse across the app.

Sprint 2 initiated the development of the main ”Classroom Page.” The primary focus was on building the frontend, or the visual layout of the page. This included designing the class ”Stream” and ensuring the entire page was responsive. Key features were implemented, such as the ability for users to create posts, add comments, and see the professor’s name. A ”copy code” button was also integrated for copying class code. Finally, all these features were connected to a local database to save and manage all posts and comments.

Duration

25 Sep – 11 Oct (Due to Mid-Sem)

2. User Stories Covered

2.1 User Stories - Homepage

US-HOME-01: Personalized Dashboard Preview

Front Card

As a logged-in user, I want to see my enrolled courses, upcoming events, and quick actions on the homepage, So that I can jump straight into class activities.

Back Card

success

- Card list of enrolled courses with course name, instructor, and quick link to classroom is shown.
- Assignments widget shows items within next 7 days.
- Quick action buttons: Create Course (instructor), Join Class (students)

Failure

- Loading fails → error message and retry state shows clear CTA (e.g., "Join a class")

US-HOME-02: Performance & Accessibility

Front Card

As any user, I want the homepage to load quickly and be accessible, so that everyone has a smooth experience across devices and assistive technologies.

Back Card

success

- Homepage loads efficiently and achieves a Lighthouse score of 80 or above.
- All interactive elements are fully keyboard-focusable.
- Images display descriptive alt text for accessibility.
- Semantic HTML and ARIA attributes ensure all widgets are properly accessible.

failure

- Low accessibility score triggers a remediation checklist.
- Unoptimized images require lazy-loading and compression improvements.

US-HOME-03: Quick Access Dashboard Navigation

Front Card

As a logged-in user, I want quick-access buttons to major platform sections, so that I can navigate important features instantly.

Back Card

success

- Four key navigation buttons appear in a clear, responsive grid layout.
- Instructors see Admin Dashboard and Analytics; students see My Progress.
- Each button opens the correct section with a single click.
- Icons and labels are visible with proper hover states across devices.
- Layout adapts to 4-column desktop and 2-column mobile view.

failure

- Incorrect button visibility is prevented by role validation.
- Navigation issues show an error toast with fallback options.
- Missing icons fall back to readable text labels.

US-HOME-04: My Courses Display & Management

Front Card

As a user, I want to view my enrolled or created courses as interactive cards, so that I can quickly access and track my learning spaces.

Back Card

success

- Courses appear in a responsive grid that adjusts across devices.
- Each card displays title, instructor, student count, and AI-enhanced badge.
- Students see a progress bar with real-time completion percentage.
- Entire course card is clickable and navigates to the classroom page.
- Hover animations add smooth shadow and scaling effects.
- Empty state shows a clear call-to-action when no courses exist.

failure

- Missing data is replaced with placeholders.
- Navigation errors show a toast with relevant course ID.
- Failed progress loading displays a friendly fallback message.

US-HOME-05: Course Creation & Enrollment

Front Card

As an instructor, I want to create new courses easily, and as a student, I want to join courses using a code, so that I can participate effortlessly in the platform.

Back Card

success

- Instructors see a Create Course button opening a clean form dialog.
- Students see a Join Course button allowing code-based enrollment.
- Form ensures valid input and prevents empty submissions.
- Successful creation or joining refreshes the course list and shows a toast.
- Role-based visibility ensures users only see relevant actions.
- Cancel button closes dialogs safely without changes.

failure

- Invalid course code shows an error message.
- Existing enrollment triggers a clear warning.
- API issues show a retry prompt.
- Duplicate course creation is blocked by backend validation.

US-HOME-06: Student Course Unenrollment

Front Card

As a student, I want to unenroll from courses I no longer need, so that I can manage my learning space efficiently.

Back Card

success

- A clear red Unenroll button appears on student course cards.
- Clicking it opens a confirmation dialog with warnings.
- Dialog displays the course code for future reference.
- API validates student ownership before removal.
- Successful unenrollment removes the course and shows confirmation.
- Only students see the unenroll option.

failure

- Unenroll errors show a retry toast.
- Stale course entries are cleared with a forced refresh.
- Confirmation dialog prevents accidental unenrollment.

2.2 User Stories - Classroom Page

US-CLASS-01: View Class Stream

Front Card

As a user (student/professor), I want to see a stream of posts in the classroom, so that I can catch up on class announcements and discussions.

Back Card

success

- Posts are displayed in reverse chronological order (newest first).
- Each post clearly shows the author's name.
- The post content (text) is clearly visible.
- The stream loads automatically when the page is opened.

failure

- If posts fail to load, a ”Could not load posts” error message is shown.
- A loading indicator is displayed while posts are being fetched from the database.

US-CLASS-02: Create a New Post

Front Card

As a user(Instructor), I want to create a new post in the stream, so that I can share information, ask a question, or make an announcement.

Back Card

success

- A create post from is available for creating a new post.
- Clicking a ”Post” button saves the post to the local database.
- The new post appears at the top of the stream immediately after posting.
- The text form closes after the post is successfully submitted.

failure

- If the post fails to save, an error message is shown to the user.
- The ”Post” button is disabled if the form is empty.

US-CLASS-03: Copy Class Code

Front Card

As a user, I want to easily copy class code from a post, so that I can share it with other students to join class.

Back Card

success

- A ”Copy Code” button is visible on posts that contain code.
- Clicking the button copies the code content to the user’s clipboard.
- A temporary ”Copied!” message appears to confirm the action.
- Class codes are displayed in a formatted, easy-to-read block and are related to course and instructor name for differentiability and usability.

failure

- If the copy action fails, an error message is briefly shown.
- The button is only visible on posts identified as containing code.

US-CLASS-04: View Professor Information

Front Card

As a user, I want to see the professor's name on the classroom page, so that I can easily identify the instructor for the course.

Back Card

success

- The professor's full name is displayed prominently on the Header of the page.
- The name is correctly fetched from the database for the specific class.

failure

- If the name fails to load, a generic title is shown.
- A placeholder is shown while the name is being loaded.

US-CLASS-05: View Classroom People

Front Card

As a user, I want to see a list of all students and professors in the class, so that I know who is enrolled and can identify my classmates.

Back Card

success

- A "People" tab is clearly visible on the classroom page.
- Clicking the tab displays a list of all enrolled users.
- The professor is clearly identified (listed first, with a "Instructor" title).
- The list shows the full name of each student.

failure

- If the list of people fails to load, an error message is shown.
- A loading indicator is displayed while the list is being fetched.

US-CLASS-06: View Class Assignments

Front Card

As a student, I want to see a list of all assignments for this class, so that I can track what work I need to do and when it is due.

Back Card

success

- An ”Assignments” tab is available on the classroom page.
- Clicking the tab shows a list of all posted assignments.
- Each item in the list clearly displays the assignment title.
- The due date for each assignment is shown next to the title.

failure

- If assignments cannot be loaded, an error message is shown.
- If no assignments have been posted, a ”No assignments yet” message is displayed.

US-CLASS-07:Courses Page Navigation

Front Card

As a new user, I want to change my course page directly from a course page , so that I can check all courses updates seamlessly.

Back Card

success

- Easy Navigation using the courses slidebar on the course page.

failure

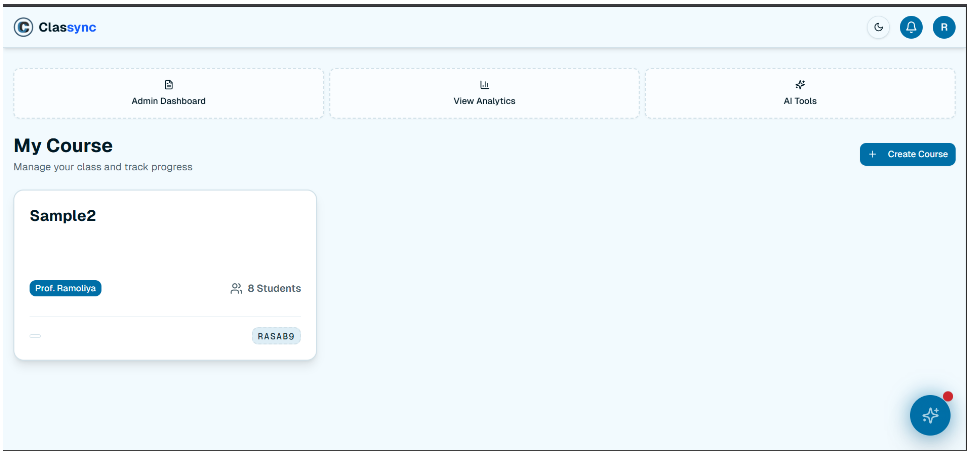
- Have to go to homepage and then open it again from there.

3. Proof of Concept (POC)

3.1 Homepage

This section provides a visual overview of How frontend of HomePage looks like.

- **1. Instructor's P.O.V**



Classync

Admin Dashboard

View Analytics

AI Tools

My Course

Manage your class and track progress

+ Create Course

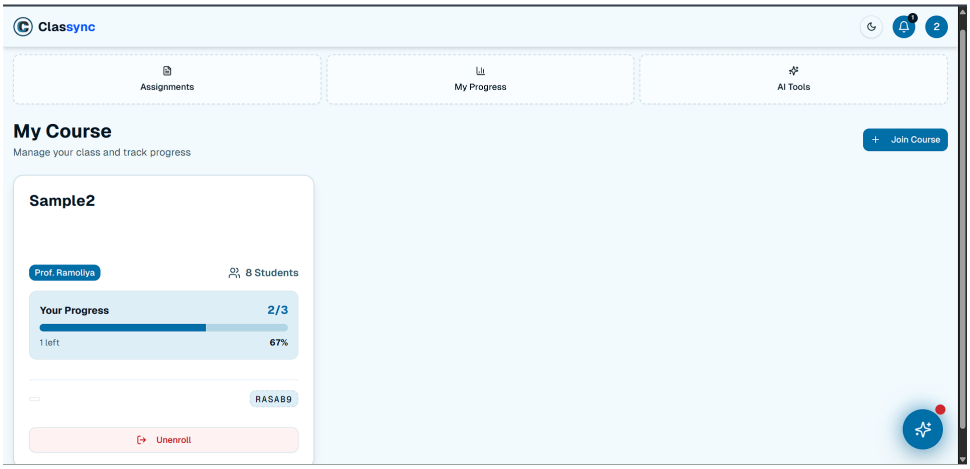
Sample2

Prof. Ramoliya

8 Students

RASAB9

- **2. Student's P.O.V**



Classync

Assignments

My Progress

AI Tools

My Course

Manage your class and track progress

+ Join Course

Sample2

Prof. Ramoliya

8 Students

Your Progress 2/3

1 left 67%

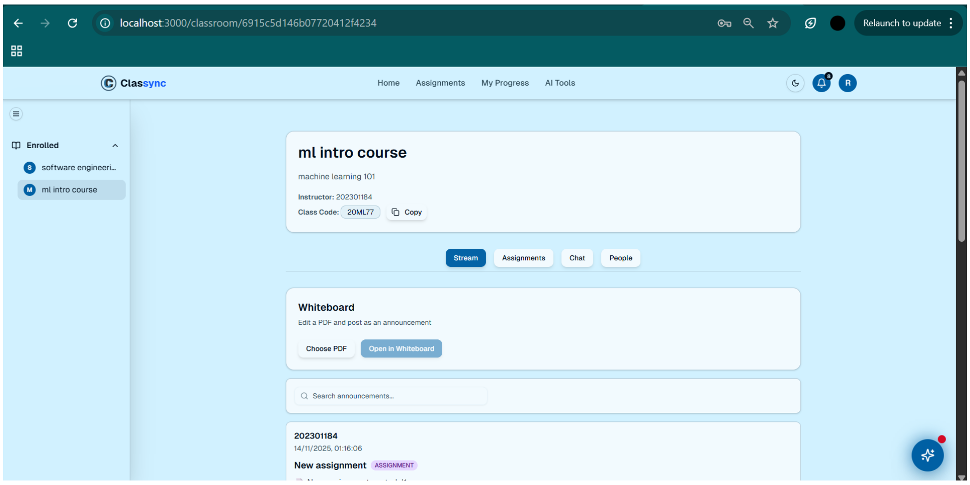
RASAB9

Unenroll

3.2 Classroom Page

This section provides a visual overview of Classroom page.

- **1. Classroom page stream fr student:** When Student clicks on any specific course on homepage he/she is redirected to this classroom page which clearly shows class code, instructor name and course name. The class Stream is designed such that is user is student then he/she can only search the stream but not post.



ml intro course

machine learning 101

Instructor: 202301184

Class Code: 20ML77 Copy

Whiteboard

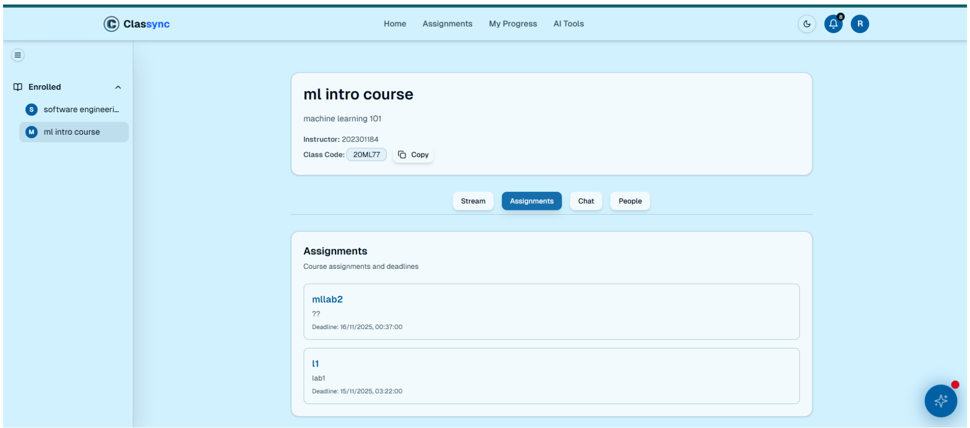
Edit a PDF and post as an announcement

202301184

14/11/2025, 01:16:06

New assignment

- 2. **Assignments Tab on Classroom page:** On clicking Assignments button opens assignment page where all assignments for student are shown on clicking which student can submit the assignment.



ml intro course

machine learning 101

Instructor: 202301184

Class Code: 20ML77 Copy

Assignments

Course assignments and deadlines

mllab2

??

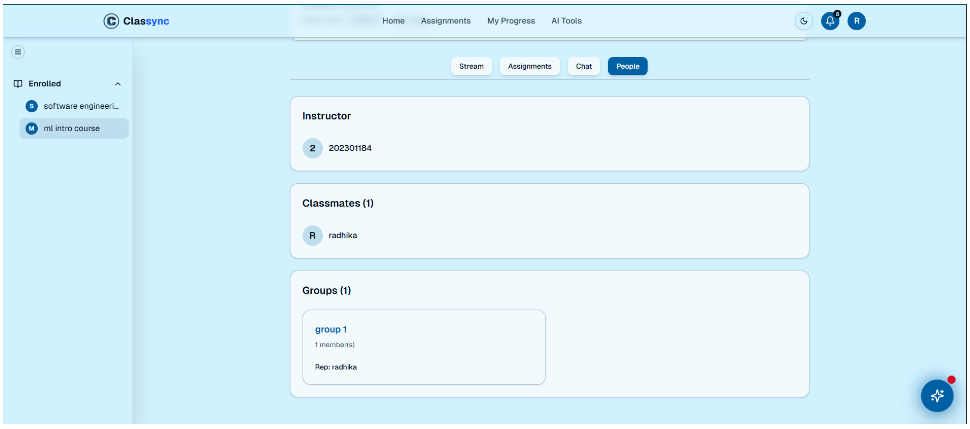
Deadline: 16/11/2025, 00:37:00

l1

lab1

Deadline: 15/11/2025, 03:22:00

- 3. **People Tab:** People Tab Displays Instructor’s name and students list whosoever are enrolled in the course. If a user un-enroll from course then his/her name removed from the course.



Instructor

2 202301184

Classmates (1)

R radhika

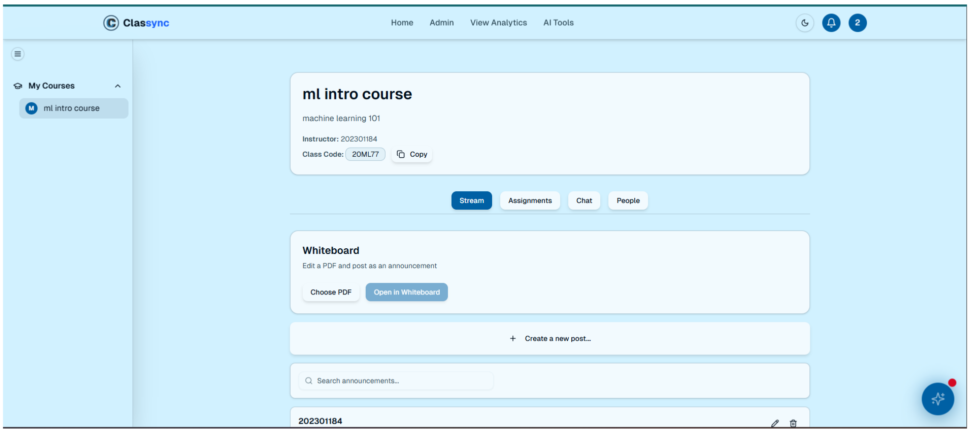
Groups (1)

group 1

1 member(s)

Rep: radhika

- **4. Stream for Instructor:** If the logged in user's role is 'instructor' then the stream will show the button of create post which redirects to create post form which can be filled, and the post is created and shown on the stream with the instructor name with newest first order.



ml intro course

machine learning 101

Instructor: 202301184

Class Code: 20ML77

Whiteboard

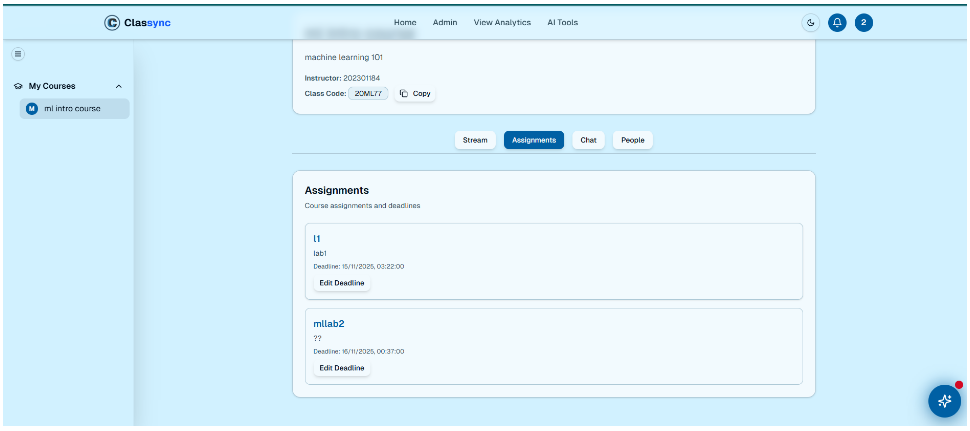
Edit a PDF and post as an announcement

+ Create a new post...

Search announcements...

202301184

- **5. Assignment Tab for instructor:** Assignment tab for instructor has the option to edit the deadline(which reduces the hassle of changing the deadline timing) and when clicking a specific assignment, it is redirected to the assignment section for instructor.



machine learning 101

Instructor: 202301184

Class Code: 20ML77

Assignments

Course assignments and deadlines

l1

lab1

Deadline: 15/11/2025, 03:22:00

mllab2

??

Deadline: 16/11/2025, 00:37:00

4. Sprint Review

4.1 What We Achieved

4.1.1 In Home Page

- A quick responsive UI, different for both students and instructor.

4.1.2 In Classroom Page

- **Classroom Page Frontend:** Successfully built the foundational user interface for the main classroom page.
- **Stream Layout:** Designed and implemented the visual layout for the class "Stream," where posts and announcements appear.
- **Assignment Layout:** Implemented visual Layout for assignment page.
- **Local Database Integration:** Connected all frontend features to a local database to successfully save, retrieve, and manage posts and User data.

4.2 Challenges

4.2.1 In Auth Part

Challenge 1: Different UI for different role **Issue:** How to make a difference in UI for student and instructor and what features should be present on instructor side and what on student side.

Solution: Implemented a role-based check after user login. The user's role (e.g., "instructor" or "student") was stored. In the UI, conditional rendering was used to show or hide components based on this role. For example, the "Create Assignment" and "Delete Post" buttons were only rendered if the user's role was "instructor."

Learning: Learned the importance of conditional logic in the frontend to manage different user permissions. This sprint highlighted the need to plan features from multiple user perspectives.

Challenge 2: UI Designing **Issue:** How to make the UI look good and user friendly which gives less strain to eyes.

Solution: Adopted a clean design with a simple, consistent color palette (light backgrounds and dark text) to ensure high contrast and readability. Used ample white space and clear alignment to make the layout feel organized and uncluttered. Chose a standard, easy-to-read font.

Learning: Gained a better understanding of core UI/UX principles. Learned that good spacing, contrast, and alignment are more important than complex visuals for creating a user-friendly and professional-looking application.

4.2.2 In Classroom page

Challenge 1: Implementing the "Copy Code" Feature Issue: Needed a way for a user to easily copy code snippets from a post with a single button click, without manually highlighting the text.

Solution: Used the ‘navigator.clipboard.writeText()‘ JavaScript API. An event listener was added to the "Copy Code" button, which finds the post’s code block, gets its text content, and passes that text to the ‘writeText()‘ function. A small "Copied!" message was shown to the user as feedback.

Learning: Learned how to interact with modern browser APIs like the Clipboard API. This also showed the importance of providing clear user feedback to confirm that an action (like copying) has been completed successfully.

Challenge 2: Connecting Frontend to Local Database Issue: Posts and comments were only on the frontend, so they would all disappear on a page refresh. A way to save and reload this data was needed.

Solution: Set up a local database with a ‘posts‘ table (and a ‘comments‘ table). The frontend "Post" button was updated to send the new post data to the local database. When the classroom page loaded, it would first "fetch" all existing posts from the database and display them in the stream.

Learning: This was a first step into full-stack development. Learned the basic flow of persisting data: (1) capturing a user event on the frontend, (2) sending that data to a database, and (3) fetching the data from the database to populate the page on load.

5. Conclusion

This development cycle successfully laid the foundational pillars for the ClassSync application by completing two critical components: the Homepage and the Classroom Page.

On the Homepage front, a user-friendly and responsive interface was established, with a key achievement being the implementation of role-based logic to differentiate the UI for students and instructors. This work successfully defined the main entry point for all users.

Simultaneously, the Classroom Page was built out with its core features. This included designing the responsive "Stream," implementing essential functions like creating posts, adding comments, and copying code. Crucially, all these features were successfully integrated with a local database, creating a functional and persistent environment for class interactions.

Together, these achievements provide a robust foundation, and the project is now well-positioned to build upon this base with more advanced features in the upcoming sprints.