



*Bridging the gap between community  
and recorded lecture watching*



# meet our team



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B.S. | CS  
M.S. | CS



[Paulina Anzaldo](#)

B.S. | CS  
Minor | Mod. Lang.



[Jake Wagner](#)

B.S. | CS  
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[Elena Wagenmans](#)

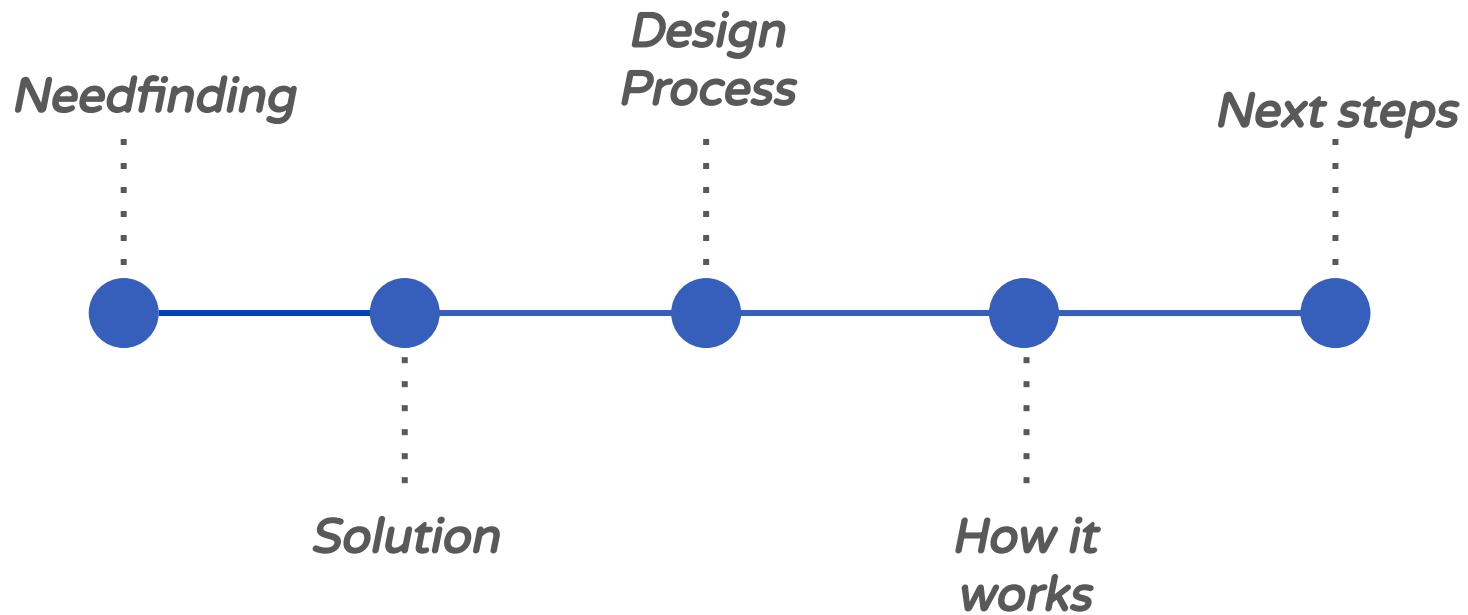
B.S. | Product Design  
Minor | CS

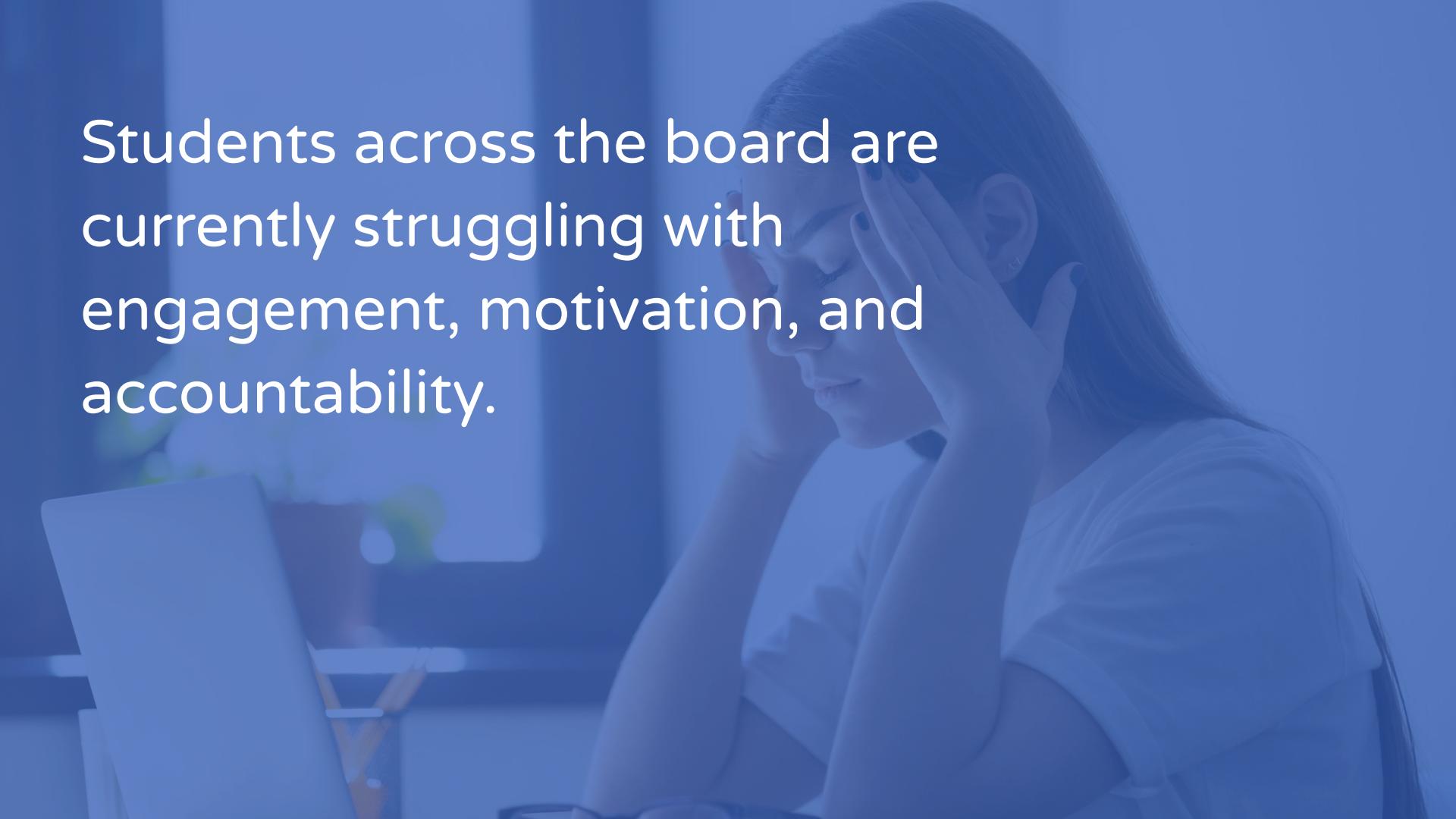


Look around? What's the  
problem? Do you see any  
faces?



# overview



A woman with long dark hair is sitting at a desk, looking down and to the side with a distressed expression. Her hand is resting against her forehead, with her fingers partially hidden in her hair. She is wearing a light-colored t-shirt. In the background, there's a computer monitor and some papers on the desk.

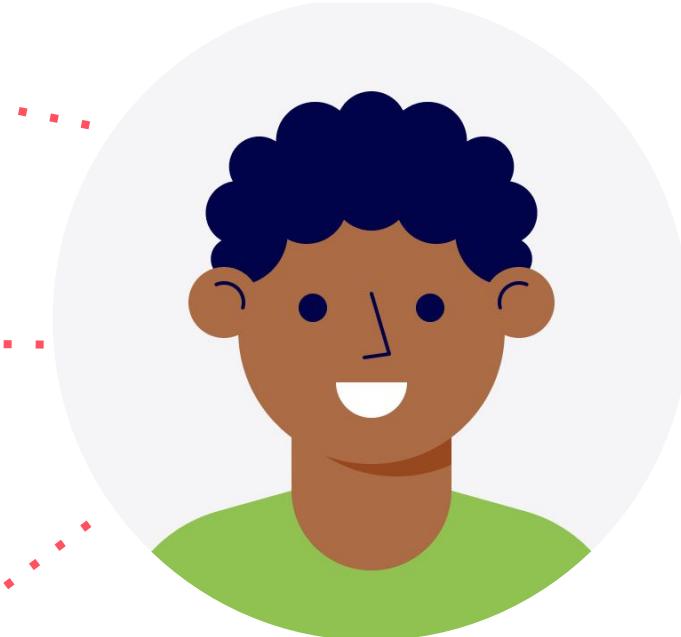
Students across the board are currently struggling with engagement, motivation, and accountability.

# Meet Yos

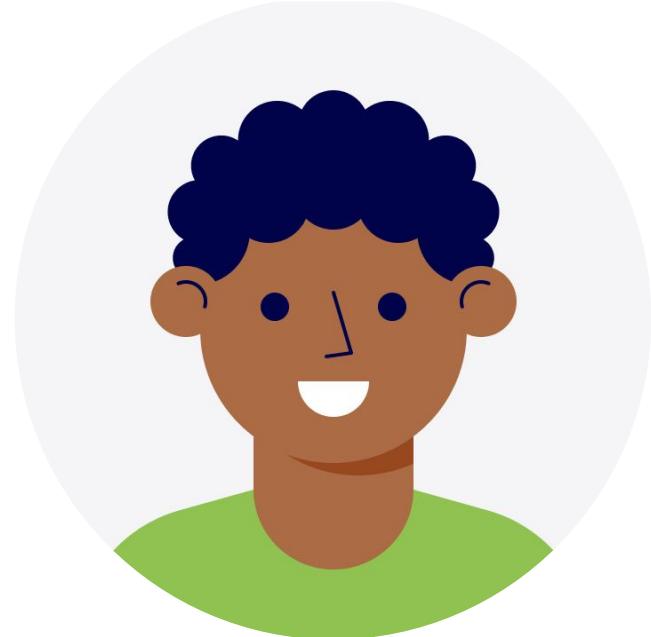
Freshman at  
MIT

Attending  
school virtually

Finds it difficult to build  
community online



We were amazed to realize how much more he would rather do work on his own than schedule a time with friends. **It would be game-changing to make studying less of a solitary activity.**

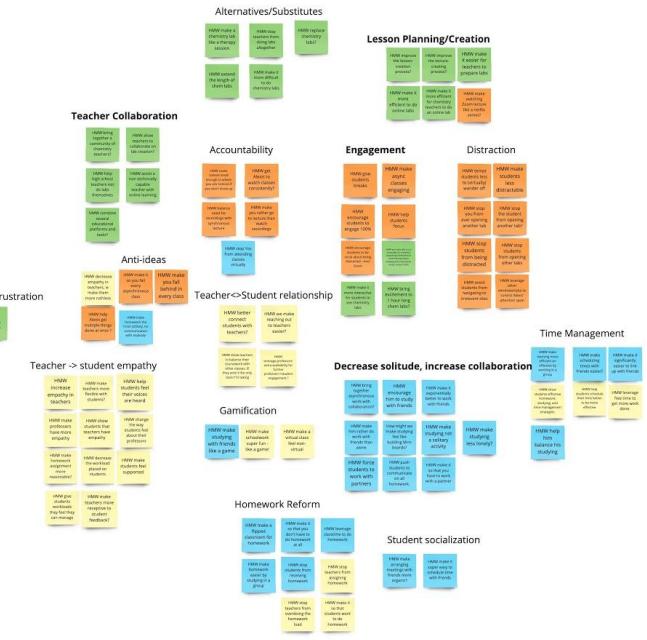


# *empathy map*



## *HMW statements*

We met with a technically capable yet frustrated high school chemistry teacher named Mr. Williams. We were amazed to hear that he spent around 16 hours to record an individual hour long lab. He has to spend an enormous amount of time on recording the lab with multiple cameras, doing multiple takes, editing the videos, and then eventually uploading. It would be game-changing if we could give this teacher hours and hours back every week by updating this online chemistry lab routine.



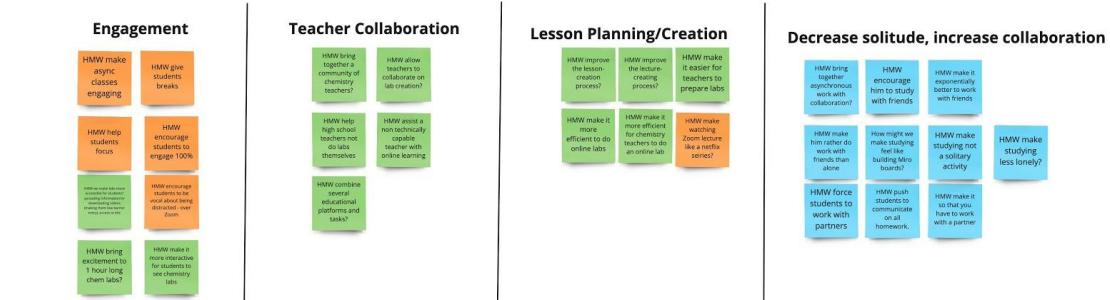
We met Alexis, a college student who falls behind in asynchronous classes. We were surprised to realize that she does not always pay attention and distracts herself easily with other tabs/windows. It would be game changing to balance efficiency with presence in the virtual classroom.

We met Yos, a freshman at MIT, attending classes virtually. We were amazed to realize how much more he would rather do work on his own than schedule a time with friends. It would be game-changing to make studying less of a solitary activity.

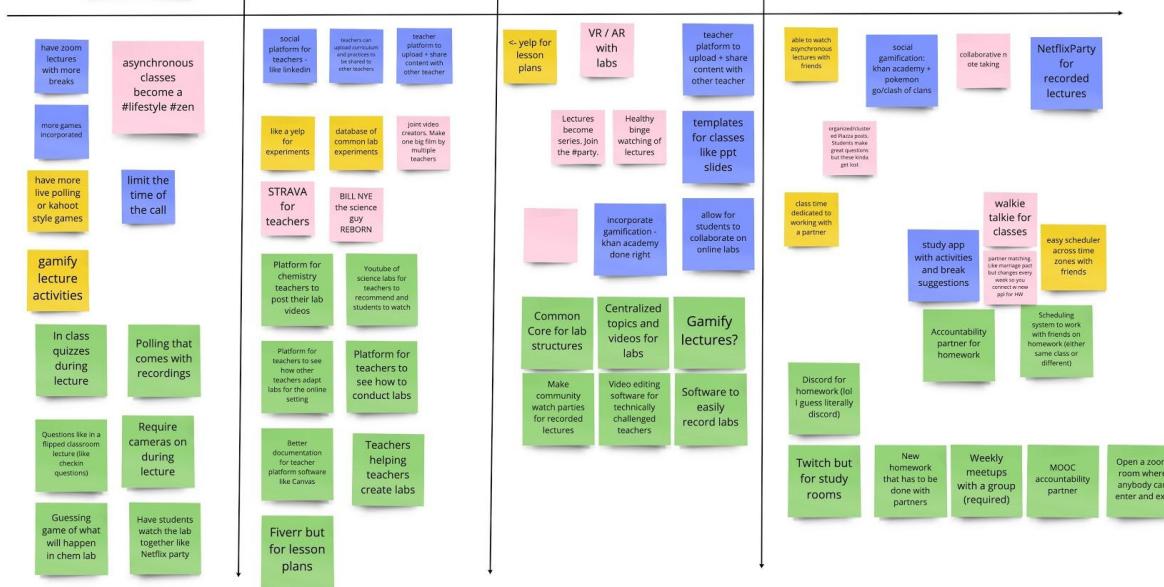


# solution ideation

## top HMW groups



## solution ideas



## Idea 1

### Communal Watching of Recorded Lectures

Have students watch the lab together like Netflix party  
Healthy binge watching of lectures  
Lectures become series. Join the #party.

NetflixParty for recorded lectures  
able to watch asynchronous lectures with friends

## Idea 2

### Community based platform for teachers

<- yelp for lesson plans  
STRAVA for teachers

Platform for teachers to see how other teachers adapt labs for the online setting  
database of common lab experiments

## Idea 3

### Partner-matching and collaborative platform for studying

study app with activities and break suggestions  
partner matching. Like marriage pact but changes every week so you connect w new ppl for HW  
Scheduling system to work with friends on homework (either same class or different)

easy scheduler across time zones with friends  
walkie talkie for classes



**How might we** encourage students to prefer studying with friends over studying in solitude?

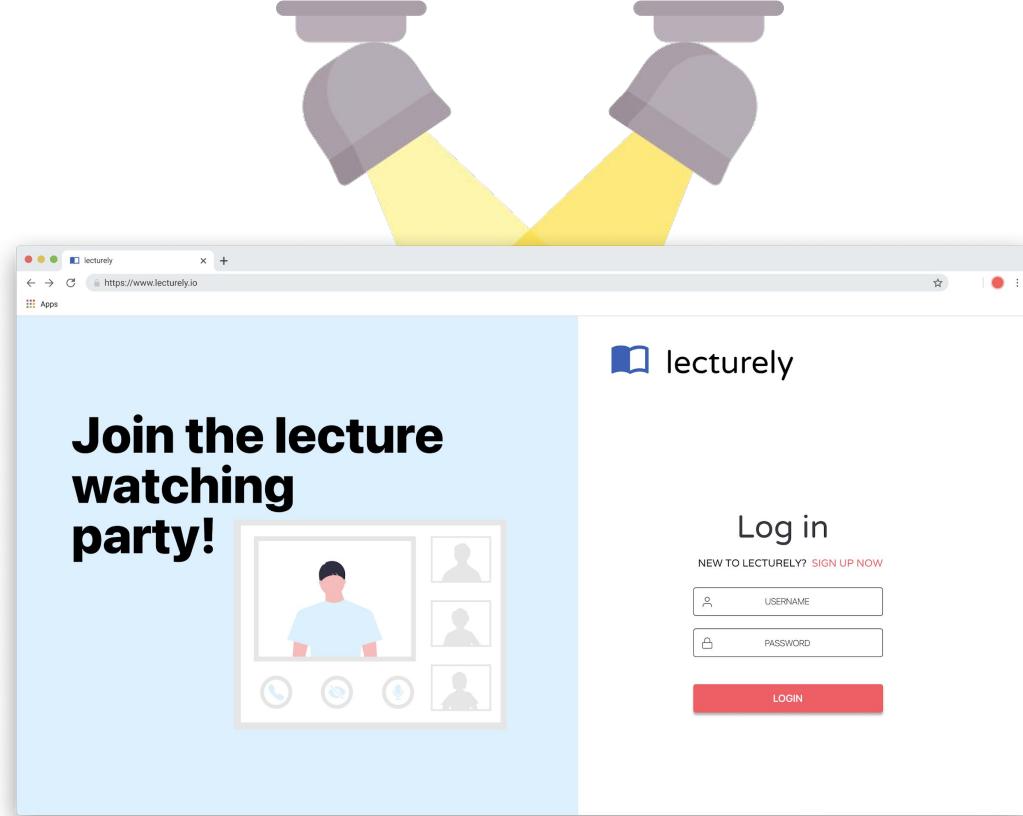




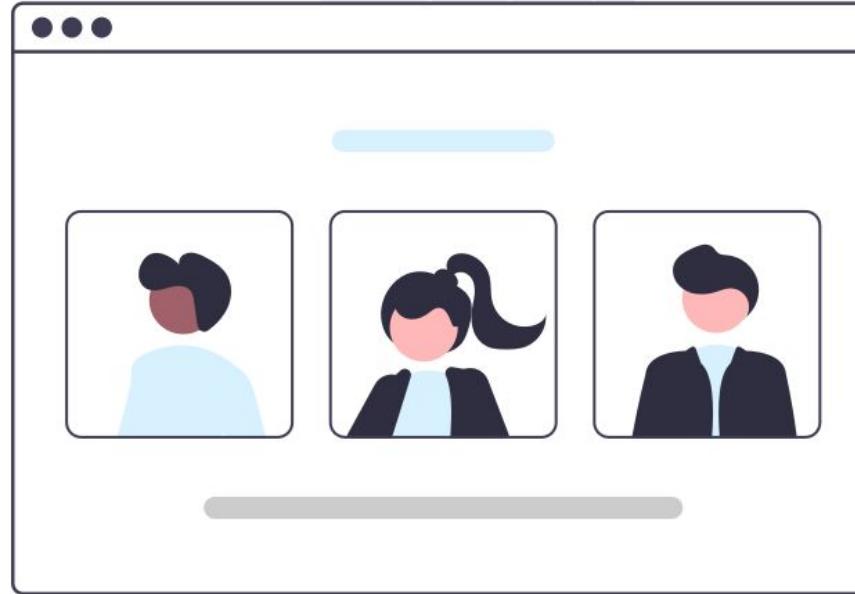
solution



Build an engaging  
**community**  
around asynchronous  
learning that people are  
excited to join.



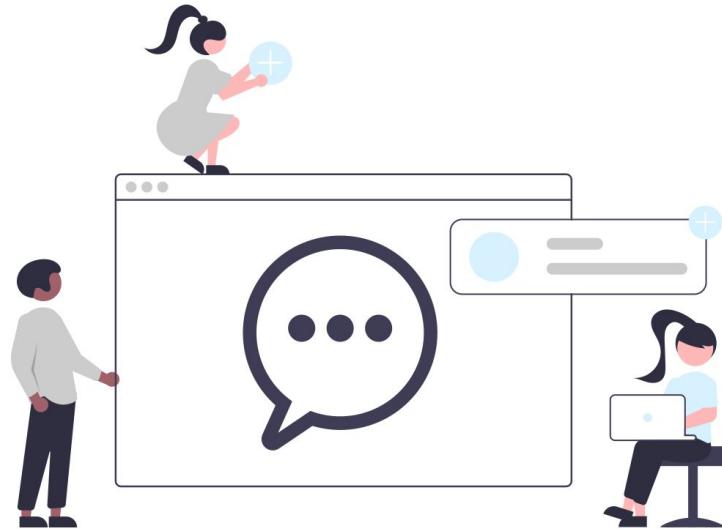
# key features



**Attend asynchronous  
lecture watch parties**



# key features



Interact with your friends in  
the **chat and class discussion**



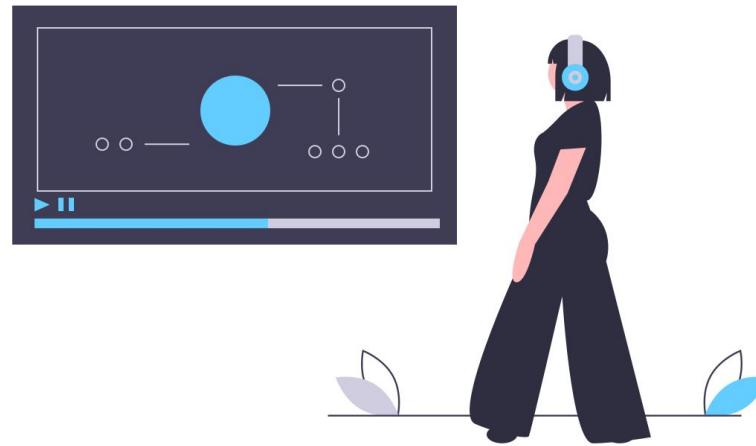
# key features



**Connect** with friends by  
sending and receiving lecture invites



# key AI insight



lecturely leverages AI to **suggest smart pausing and concept checks**



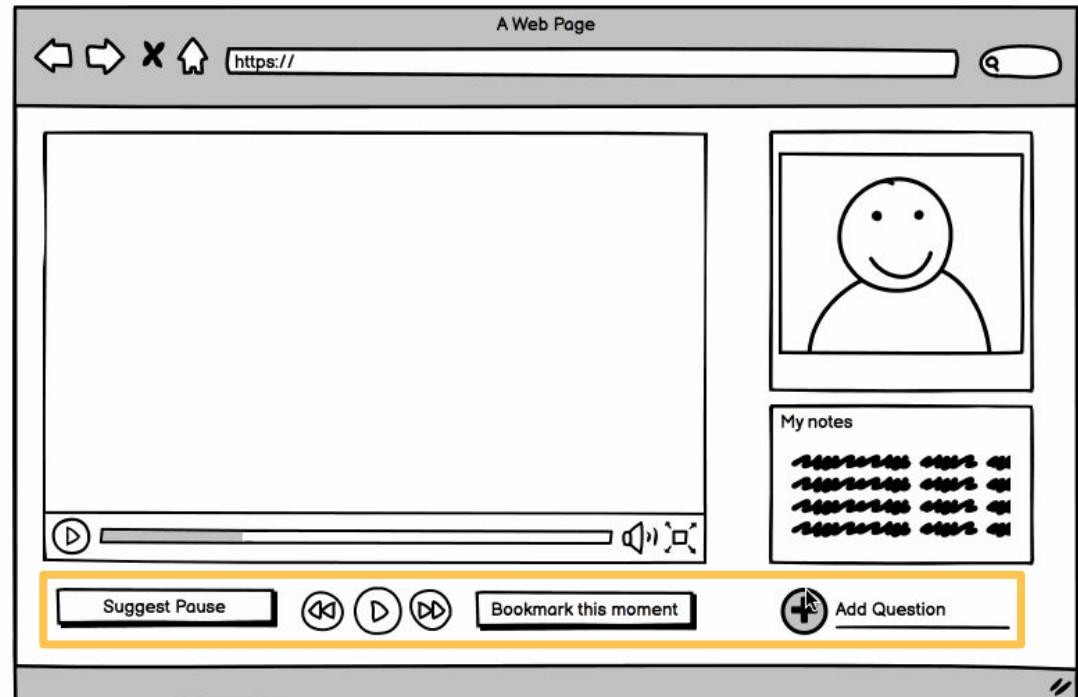
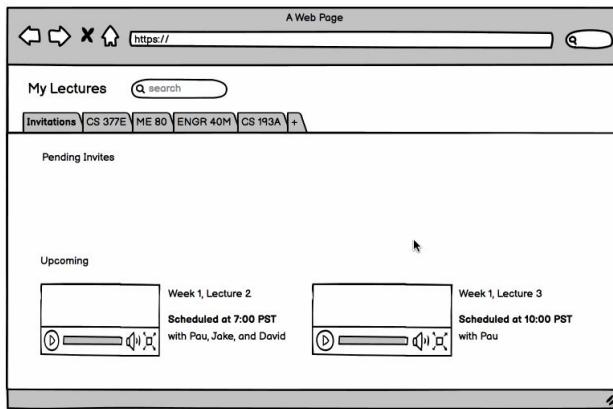
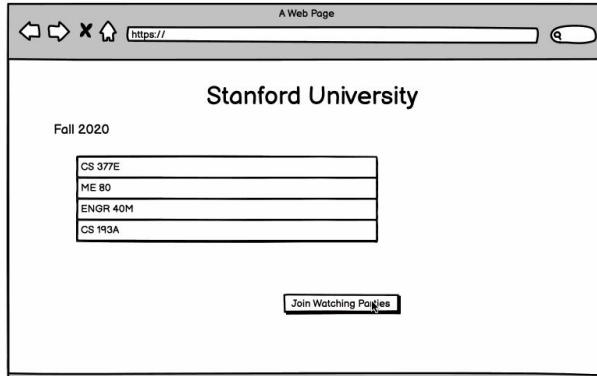


# design journey



# Lo-fi Prototype: Balsamiq

- Buttons don't match function
- 



# Med-fi Prototype #1

This screenshot shows the 'My Dashboard' page. On the left, a vertical sidebar features icons for home, inbox (with 2 notifications), classes, and discover. The main area displays 'Pending Invites' for two classes: ENGR 40M and ME 80. Each invite card shows a user profile picture, the class name, and the lecture details ('Week 1 Lecture 1'). A 'View all' button is located at the top right of the invite section. Below it, the 'Upcoming' section lists 'ME 80 Week 1, lecture 1' and 'ENGR 40M Week 1, lecture 2' with play button icons.

This screenshot shows the 'Inbox' page. The sidebar on the left includes an 'Inbox' icon with 2 notifications. The main area has tabs for 'Pending' (selected) and 'Sent'. It lists two pending invites from 'Pau' for 'ENGR 40M Week 1 Lecture 1' and 'ME 80 Week 1 Lecture 2'. Each invite card includes the user's profile picture, the class and lecture details, the date ('October 20, 2020 @ 10 PM PST'), and 'Decline' and 'Accept' buttons. The 'Accept' button is highlighted in green for the second invite.



The image shows two screenshots of the lecturely.io website. The left screenshot displays the 'Classes' page with a sidebar containing icons for home, inbox, classes (which is selected), and discover. The main area shows 'Upcoming' lectures for three classes: ENGR 40M, ME 80, and CS 193A. The first lecture for ENGR 40M is highlighted with an orange border. The right screenshot shows a detailed view of an ENGR 40M lecture titled 'E40M Lecture 27: Serial Communication / Pin Multiplexing' by Reader 5.6. The video player interface includes a play button, volume control, and participant thumbnails for Elena, Zane, David, and Pau.

lecturely

https://www.lecturely.io

Apps

# Classes

My classes ENGR 40M ME 80 CS 193A

## Upcoming

Week 1, lecture 1  
09/20 at 9 PM PST

ME 80

Week 1, lecture 1  
09/20 at 9 PM PST

ENG 40M

Week 1, lecture 2  
09/20 at 9 PM PST

ME 80

Week 1, lecture 1  
09/20 at 9 PM PST

ENG 40M

Week 1, lecture 2  
09/20 at 9 PM PST

CS 193P

home

inbox

classes

discover

lecturely

https://www.lecturely.io

Apps

## E40M Lecture 27

### Serial Communication / Pin Multiplexing

Reader 5.6

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# Med-fi Prototype #2

The screenshot shows the 'My inbox' section of the application. On the left, there's a vertical sidebar with icons for home, classes, and bookmarks. The main area displays two pending invites:

- Pau** is inviting you to **CS 245**: Lecture 04: Storage Formats on Wednesday, October 3 @ 10 PM. Buttons for Decline and Accept are shown.
- Elena** is inviting you to **ENG 40**: Lecture 01: Int on Friday, October 3 @ 4 PM. Buttons for Decline and Accept are shown.

Below this, there's a section for **Upcoming Parties** showing three events:

- CS 245**: Lecture 01: Introduction on Monday, Sep 24.
- CS 245**: Lecture 02: Database System... on Monday, Oct 1.
- CS 245**: Lecture 03: Database Archite... on Monday, Oct 1.

A large blue callout box on the right encourages users to "Be the first to start a watch party." It features a cartoon llama.

The screenshot shows the 'My classes' section of the application. At the top, there are tabs for ALL, E4DM, and CS245. Below is a navigation bar with Home, Inbox, and Classes. The main content area displays four class entries:

- CS 245**: Lecture 01: Introduction on Monday, Sep 24. Stanford Center for Professional Development Spring Quarter 2019. C 245. Buttons for Edit Invite and Accept.
- CS 245**: Lecture 02: Database System... on Wednesday, Sep 26. Stanford Center for Professional Development Spring Quarter 2019. C 245. Buttons for Edit Invite and Accept.
- CS 245**: Lecture 03: Database Archite... on Monday, Oct 1. Stanford Center for Professional Development Spring Quarter 2019. C 245. Buttons for Edit Invite and Accept.
- CS 245**: Lecture 04: Storage Formats ... on Monday, Oct 1. Stanford Center for Professional Development Spring Quarter 2019. C 245. Button for Invite Friends.

Lecture 03: Storage Formats

Explain the difference between processes and threads. \*

Solution here ...

How many transactions can be processed in 800 ms?

Solution here ...

How many processes can the JVM run "synchronously"? \*

Solution here ...

Submit

Elena Jake

David Pau

Hey @David are you free to watch the next lecture right after this?

Stanford Professional Development

Spring Quarter 2019

CS 2

Woohoo! 🎉 Your question will appear in the next checkpoint

Okay

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# Med-fi Prototype #3

My Inbox

## Pending Invites

Pau is inviting you to  
**CS 245**  
Lecture 04: Storage Formats  
Wednesday, October 3 @ 10 PM

[Decline](#) [Accept](#)

## Upcoming Parties

**CS 245**  
Lecture 01: Introduction  
Stanford Center for Professional Development Spring Quarter 2019

**CS 245**  
Lecture 02: Database System  
Stanford Center for Professional Development Spring Quarter 2019

**CS 245**  
with Paulina  
9:00 - 10:00 pm  
Monday, Sep 24

**CS 245**  
with Paulina, David + 3 others  
10:00 - 11:00 am  
Monday, Oct 1

My inbox

## Pending Invites

Woooh! 🎉  
You're up to date with invites.

## Upcoming Party

**CS 245 Lecture 3 Watch Party**  
Wednesday, October 3 8:00 am - 9:00 am  
Add description

Paulina, Jake + 3 others

[Send invite](#)

**CS 245**  
with Paulina, David + 3 others  
10:00 - 11:00 am  
Monday, Oct 1

**CS 245**  
with Elena, Jake + 3 others  
04:00 - 05:00 pm  
Monday, Oct 1

Be the first to start a watch party.

▶ September

Mo	Tu	We	Th	Fr	Sa	Su
					1	2
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

▶ September

8 AM ENGR 40M

10 AM CS 377E

▶ September

A screenshot of a web browser window displaying a lecture video player interface. The title bar shows the URL <https://www.lecturely.io>. The main content area features a large "Stanford" logo and "Center for Professional Development" text, followed by "Spring Quarter 2019". A large "CS 245" title is centered below. On the left, a sidebar lists navigation icons: "home" (with a red notification badge), "inbox" (with a red notification badge), "classes" (with a blue notification badge), and "bookmarks". On the right, a video player controls bar shows a progress bar at 228 / 804. Below the video player, a "Stanford" watermark is visible. A sidebar on the right contains a "Chat" tab and a "Live thread" tab (which is currently selected). The "Live thread" section displays a list of comments from users David Estrada-Arias, Elena Wagenmans, and Jake Wagner. The comment from David Estrada-Arias is highlighted with an orange border.

Lecture 03: Database Architecture

Stanford | Center for Professional Development

Spring Quarter 2019

CS 245

David Estrada-Arias 05:01  
What would happen if B was also removed from the stack by thread 1 before pushing D and A?  
100 2

Elena Wagenmans  
it would disappear

Jake Wagner  
seg fault!

Add a response ...

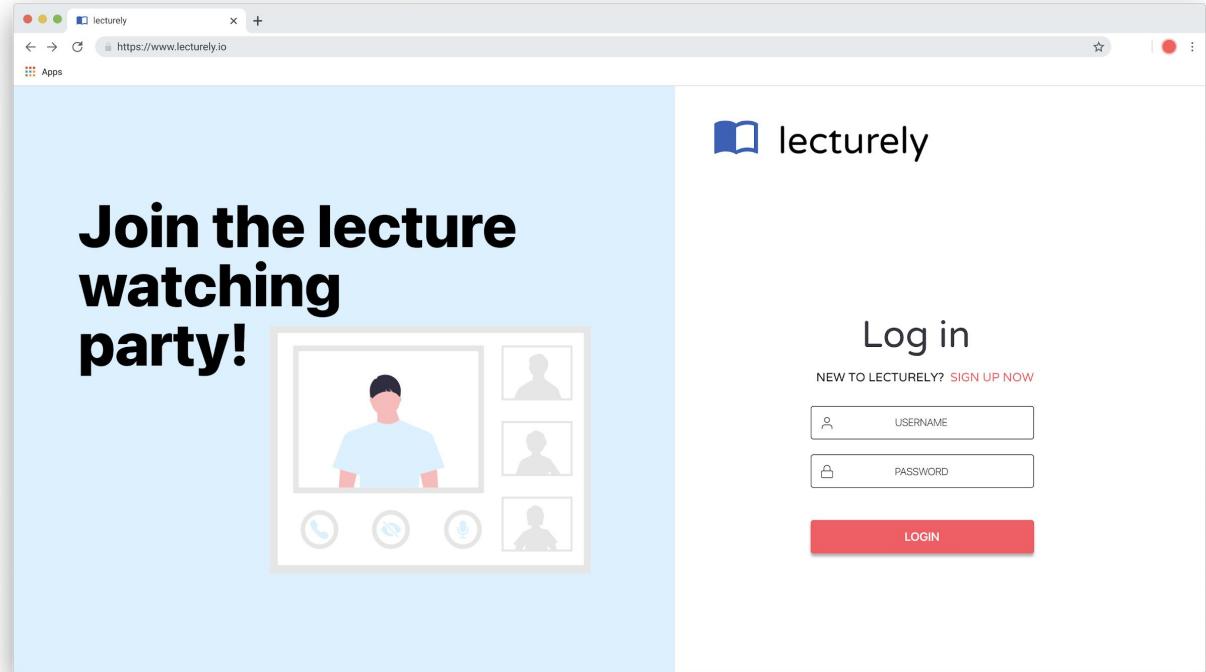


UI



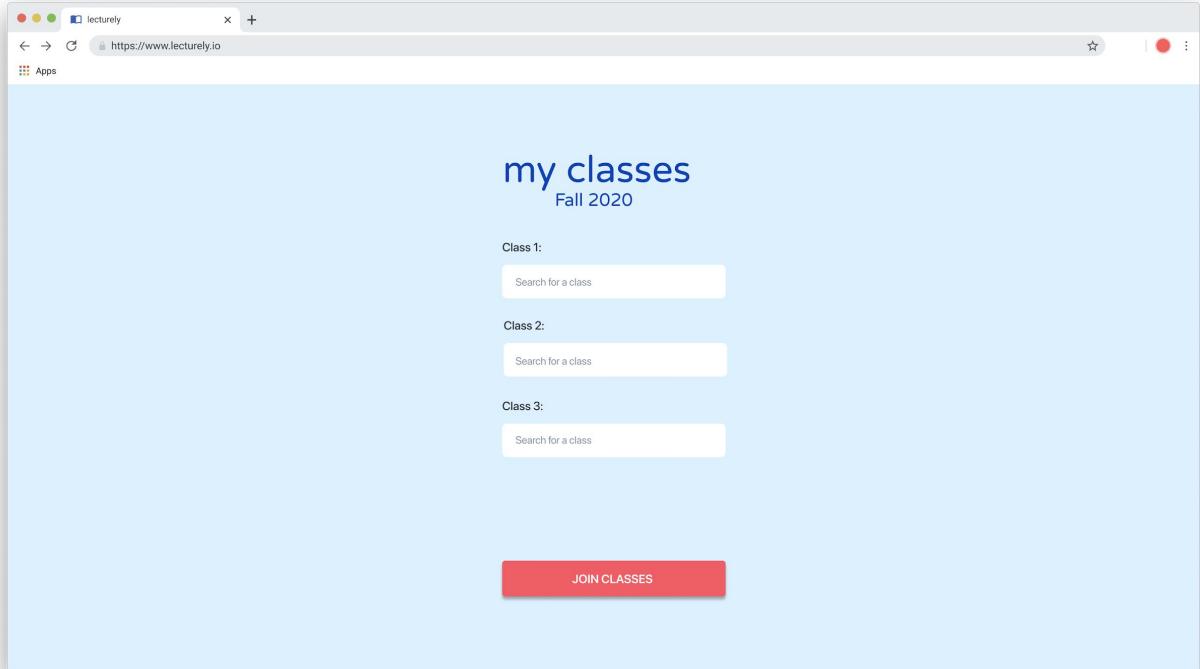
# task 1

**motivation:** find a way to create an account and connect with relevant lecture content



# task 1

**sign up for your  
classes and navigate  
to your dashboard**



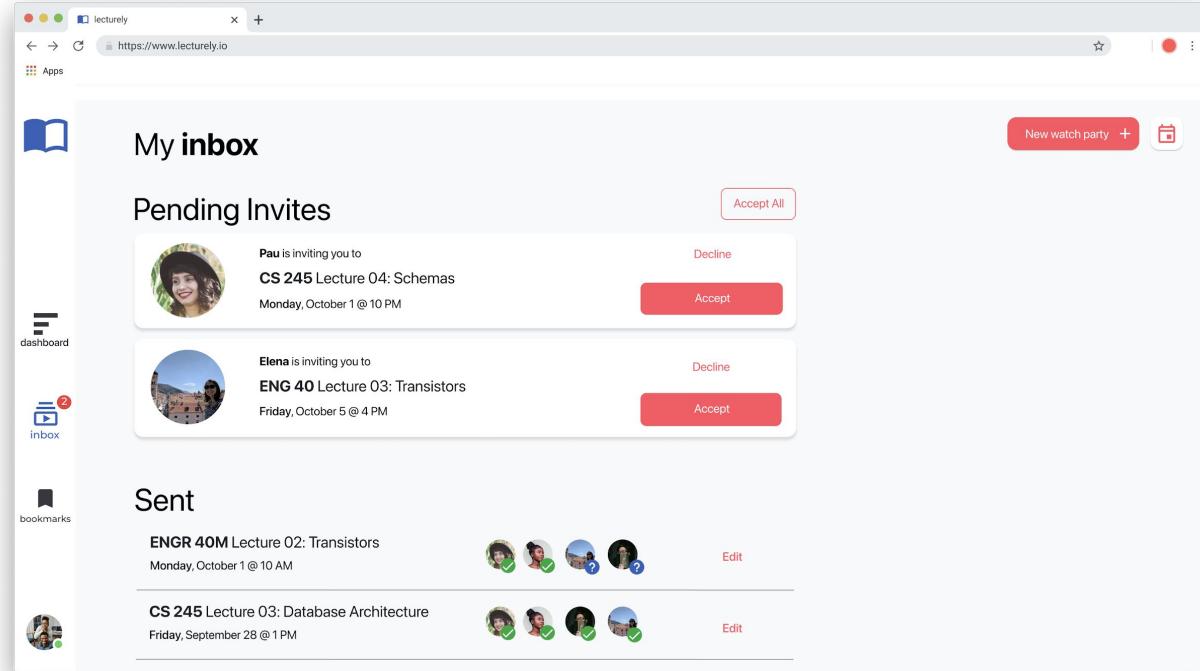
# task 1

sign up for your classes and **navigate** to your dashboard

The screenshot shows the 'My dashboard' page on the lecturely.io website. At the top, there's a header with a logo, a search bar containing 'lecturely', and a URL 'https://www.lecturely.io'. Below the header is a sidebar with icons for 'dashboard' (selected), 'inbox' (with 2 notifications), and 'bookmarks'. The main content area starts with a 'Happening now' section for 'CS 245 Lecture 03: Database Architecture', showing that Pau, Jake + 1 other have joined and a 'Join' button. Below this is a section for 'Today Friday, September 28, 2020', listing 'ENGR 40M Lecture 01: Introduction' (Pau, Chloe + 2 others, 12:00 - 01:00 pm) and 'CS 245 Lecture 03: Database Architecture' (Pau, Jake + 2 others, 01:00 - 02:00 pm). A final section for 'Tomorrow Saturday, September 29, 2020' states 'No watch parties scheduled yet!'. A red 'New watch party +' button is located in the top right corner of the main content area.

# task 2

**motivation:** build your community, interact with your friends, and schedule lecture watch parties



# task 2

accept your pending invites and create your own watch party invite

The screenshot shows the Lecturely inbox interface on a Mac OS X desktop. The window title is "lecturely" and the URL is "https://www.lecturely.io".

**My inbox**

**Pending Invites**

- Pau** is inviting you to **CS 245 Lecture 04: Schemas** on **Monday, October 1 @ 10 PM**.  
Buttons: **Accept** (red), **Decline**.
- Elena** is inviting you to **ENG 40 Lecture 03: Transistors** on **Friday, October 5 @ 4 PM**.  
Buttons: **Accept** (red), **Decline**.

**Sent**

- ENGR 40M Lecture 02: Transistors** on **Monday, October 1 @ 10 AM**. Participants: **John** (green checkmark), **Jane** (green checkmark), **Bob** (blue question mark), **Susan** (blue question mark). **Edit** button.
- CS 245 Lecture 03: Database Architecture** on **Friday, September 28 @ 1 PM**. Participants: **John** (green checkmark), **Jane** (green checkmark), **Bob** (green checkmark), **Susan** (green checkmark). **Edit** button.

**New watch party** + **Calendar**

Left sidebar icons: **dashboard**, **inbox** (with 2 notifications), **bookmarks**.

# task 2

accept your pending invites and **create your own watch party invite**

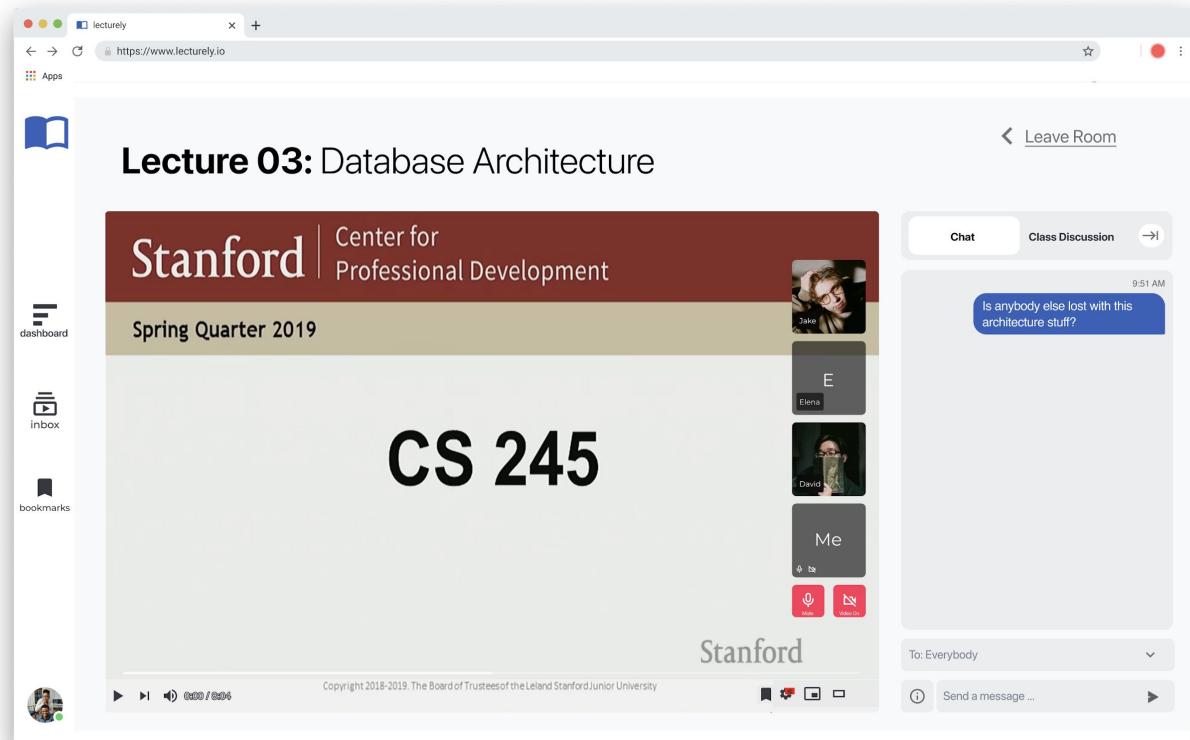
The screenshot shows the lecturely.io application interface. On the left, there's a sidebar with icons for dashboard, inbox, bookmarks, and users. The main area is titled "My inbox" and "Pending Invites". It displays a message: "Woohoo, you're up to date invites!" followed by a list of pending invites:

- CS 245 Lecture 5 Watch Party (with CS 245 and Lecture 5 dropdown menus, Date and Time fields, Add description and Add guests buttons, and a "Send invite" button)
- ENGR 40M Lecture 02: Transistors (Monday, October 1 @ 10 AM)
- CS 245 Lecture 03: Database Architecture (Friday, September 28 @ 1 PM) - this item has five user profile pictures below it and an "Edit" button.

To the right, there's a "Calendar" section showing the month of September. A red dot is placed on Friday, September 28, which corresponds to the third invite listed in the inbox. Below the calendar, there's a timeline from 8 AM to 11 AM showing a green block labeled "CS 245: Lecture 3" starting at 9 AM.

# task 3

**motivation:** learn with your community and make asynchronous learning a more engaging experience



# task 3

participate in the lecture and interact with the class questions and discussion

A screenshot of a web browser window titled "lecturely" at <https://www.lecturely.io>. The main content area displays a slide for "Lecture 03: Database Architecture". The slide features the Stanford Center for Professional Development logo, the text "Spring Quarter 2019", and the large title "CS 245". On the right side of the slide, there is a vertical column of student video feeds labeled "Jake", "E", "David", and "Me". Below the slide, a navigation bar includes icons for dashboard, inbox, and bookmarks. At the bottom, there are video controls (play/pause, volume, etc.) and a timestamp "0:00 / 8:04". To the right of the slide, a sidebar contains a "Leave Room" button, a "Chat" tab, a "Class Discussion" tab, and a message bubble from "E" asking "Is anybody else lost with this architecture stuff?". The message was sent at 9:51 AM. A "To: Everybody" dropdown and a "Send a message ..." input field are also visible.

# task 3

participate in the lecture and interact with the class questions and discussion

The screenshot shows a web browser window for the website [lecturely](https://www.lecturely.io). The main content area displays a lecture titled "Lecture 03: Storage Formats". Three questions are listed:

- "Explain the difference between processes and threads. \*"  
Input field: "Propose your solution here ..."
- "How many transactions can be processed in 800 ms?"  
Input field: "Propose your solution here ..."
- "How many processes can the JVM run "synchronously"? \*"  
Input field: "Propose your solution here ..."

A red "Submit" button is located at the bottom right of the question area. On the far left, there is a sidebar with icons for "dashboard", "inbox", and "bookmarks". On the right side, there is a "Leave Room" button and a "Class Discussion" tab. The "Class Discussion" tab is active, showing a list of messages from users Jake Wagner, Elena, David, and Me. The messages are as follows:

- Jake Wagner: "What would happen if B was also removed from the stack by thread 1 before pushing D and A?" (01:37)  
Replies: 2, Likes: 100
- Jake Wagner: "It would disappear?" (02:17)
- David: "seg fault!" (02:17)
- Me: "Which is completely removed from the stack and could be garbage memory?" (02:17)  
Replies: 4, Likes: 5

At the bottom right of the message list, there are buttons for "Add a response ..." and a right-pointing arrow.



demo

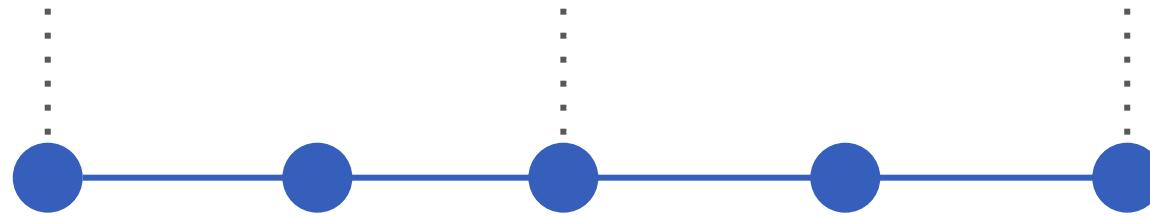


# next steps

*Add more core  
functionalities*

*Build an MVP*

*Scale across  
post-secondary  
institutions*



*Add functionality  
for lecture  
analysis*

*Pilot in multiple  
universities*





# summary

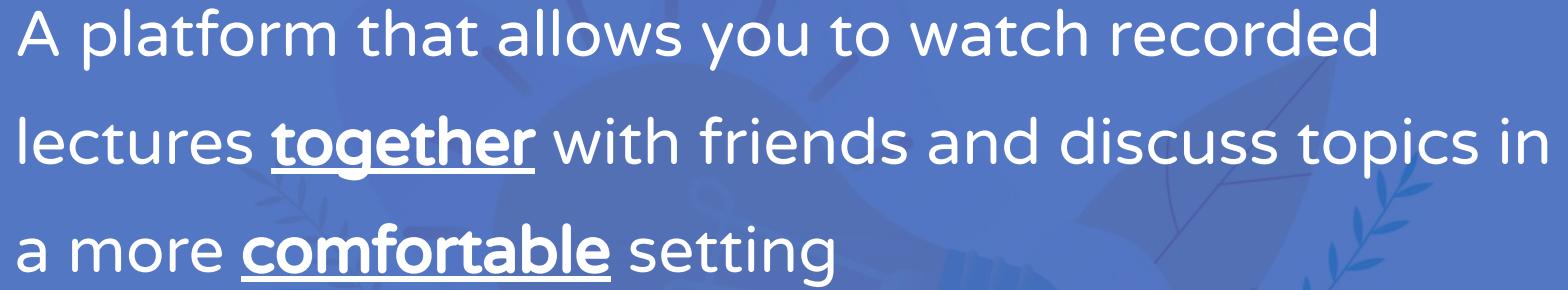


# key innovation

*A platform that allows you to watch recorded lectures together with friends and discuss topics in a more **comfortable** setting*



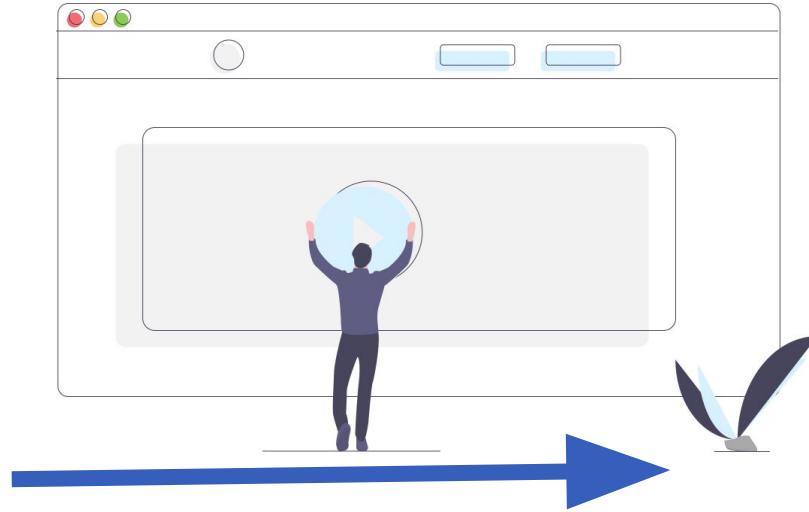
A platform that allows you to watch recorded lectures **together** with friends and discuss topics in a more **comfortable** setting

A faint, semi-transparent background image showing a group of six diverse individuals (three men and three women) standing together in a lush, green environment. They are holding up their phones, possibly recording or taking a group photo. The scene is framed by various tropical and jungle-like plants and large leaves.



# impact

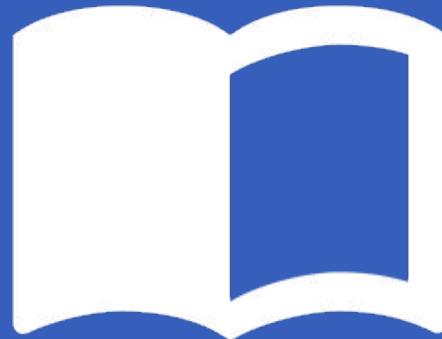
more  
accountability,  
motivation,  
engagement



new way to learn and teach!



accountability,  
motivation,  
engagement.



*The new way to learn and teach!*





*Bridging the gap between community  
and recorded lecture watching*

The screenshot shows a web browser window titled 'lectureley' with the URL 'https://www.lectureley.io'. The main content area features a large call-to-action text: 'Join the lecture watching party!'. Below this text is a video player interface with a central video frame showing a person's face, surrounded by four smaller video frames representing other users. Below the video player are four circular icons representing audio and video controls. To the right of the main content is a login form with fields for 'USERNAME' and 'PASSWORD', and a red 'LOGIN' button. At the top right of the browser window is the Lectureley logo.

lectureley

Join the lecture watching party!

Log in

NEW TO LECTURELEY? [SIGN UP NOW](#)

USERNAME

PASSWORD

LOGIN

<http://web.stanford.edu/class/cs377e/projects/Lectureley/>

Feel free to contact us at {dae783, elenawa, jtwagner, panzaldo}@stanford.edu

