



Engineering Inclusive Teaching

Faculty Professional Development

POWERED BY **WEPAN**

STEMming the Confidence Gap: Mitigating Social Judgment and Isolation



Pooja Sankar, Piazza Founder & CEO &
Jessica Gilmartin, Piazza Chief Business Officer



David Gries, Ph.D. Prof. Comp. Sci.
Cornell University



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N A P E
National Alliance for
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Education Foundation

EIT Project Team



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Stevens Institute of Technology



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Co-PI & EIT Project Director

EIT Project Goal & Strategies

To help faculty create *inclusive* engineering learning environments, especially for women and minority men.

EIT “live” and recorded faculty professional development webinars:

- Distill research findings
- Share master-teaching advice
- Provide easy-adoption Action-checklists & resources

Presenters



Pooja Sankar, Piazza Founder & CEO

Pooja founded *Piazza* based on her experience as one of few women among many men studying computer science. Pooja has worked at Oracle, Kosmix and Facebook. Pooja has a MS in Computer Science, University of Maryland and an MBA, Stanford Business School.



Jessica Gilmartin, Piazza Chief Business Officer

Jessica brings extensive product experience to Piazza having worked with multiple startups, as well as Google prior to working with *Piazza*. She will share research on the dramatic positive engagement differences *Piazza* creates, especially for women students. Jessica holds an MBA from the Wharton School of Business, University of Pennsylvania.



David Gries, Ph.D. Computer Science, Cornell

David has taught Computer Science at Cornell since 1969. For the past 3-4 years, he has taught hundreds of students each semester using *Piazza*. He is a Stephen H. Weiss Presidential Fellow (1995) for undergraduate education and has four professional society awards for undergraduate computer science education. David holds a Ph.D. in Mathematics, Munich Institute of Technology.

Pooja's Story:

My Hometown – Patna, India



My Class at IIT



My Work Environment



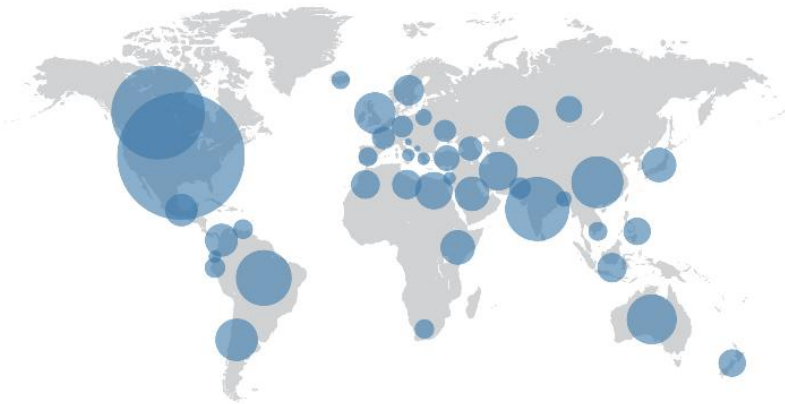
Piazza Fills A Need

1M+ enrollments

70 countries

1000 schools

students spend **3 hours per day** on Piazza



“

I'm an ardent user of Piazza and really loved the tool you created. It has given me courage to ask questions and seek answers.

”

- Mary S., Engineering Major, Yale

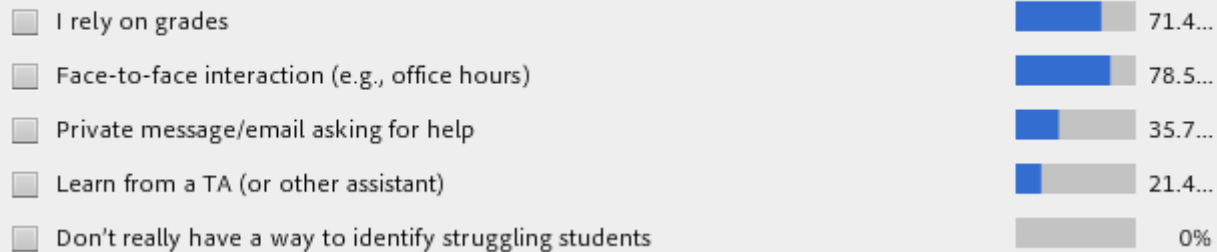
What Need Does Piazza Fill?



Poll: How do you identify struggling students?



How do you identify struggling students?



The Power of Anonymity

- Anonymous group discussion is more effective than face-to-face group discussion. (Jong, et al., 2013).
- 46% of questions and 28% of answers are anonymous on Piazza.



Shy students are more prone to get engaged since they can contribute anonymously.



- Dr. Joe Nadeau, Duke University



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Research Methodology

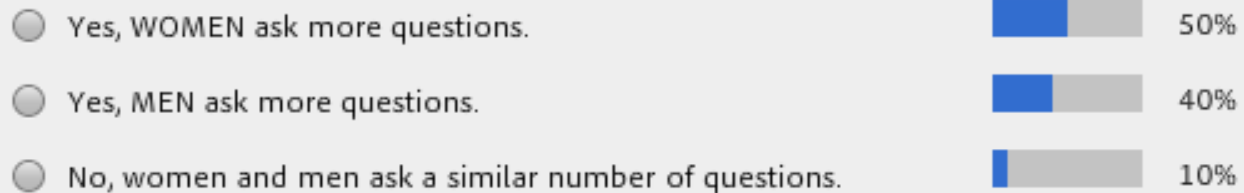
- **481,873 male and female US/Canadian student enrollments (420,389 STEM)**
- **Four terms:** Jan 2013- Nov.10th, 2014
- **>800k questions** asked/answered (> 96 million views)
- Factored in different proportions of men and women in a given subject.



Poll: Do women and men differ in the number of questions ASKED?



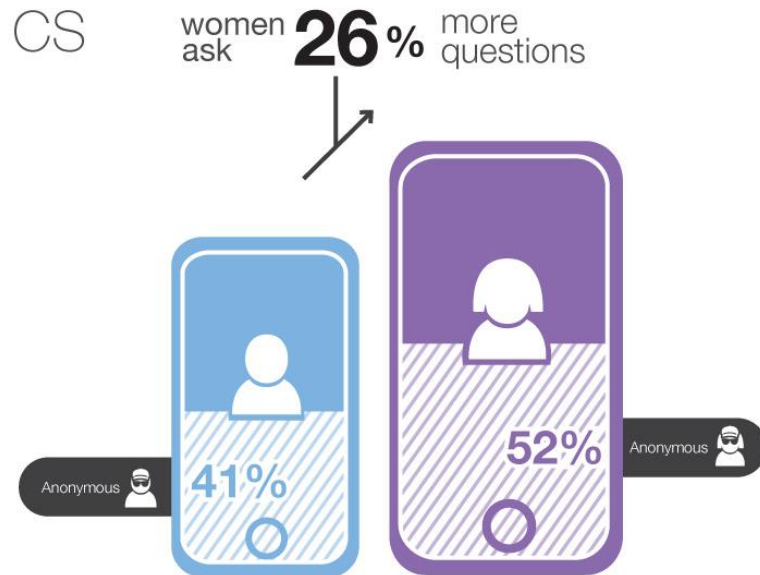
Do women and men differ in the number of questions ASKED?



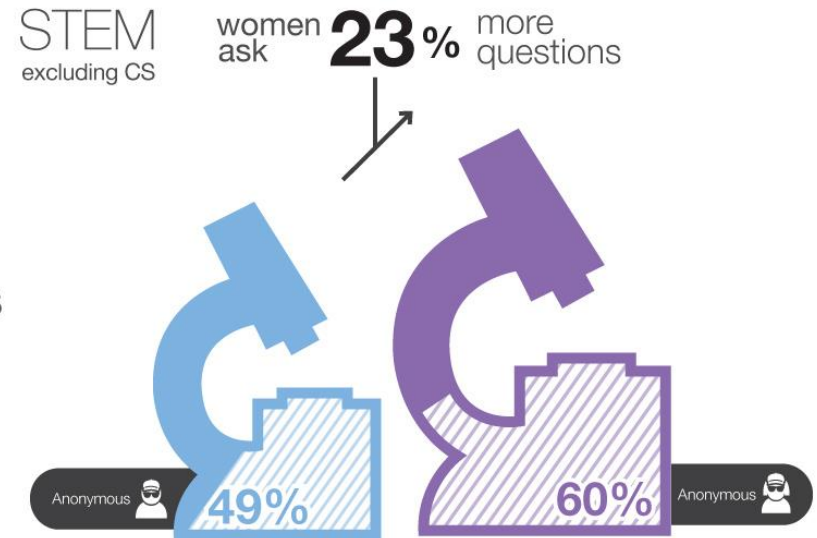
Questions ASKED: Sex Differences

- Women ASK > Questions
- Women ASK > Questions Anonymously

CS vs STEM



VS



Poll: Do women and men differ in the number of questions ANSWERED?



Do women and men differ in the number of questions ANSWERED?

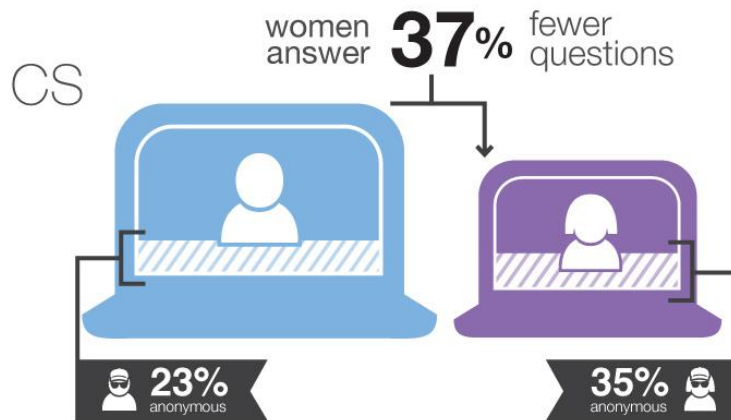
- Yes, WOMEN answer more questions. 34.7...
- Yes, MEN answer more questions. 47.8...
- No, women and men answer equal numbers of questions. 17.3...

Questions ANSWERED: Sex Differences

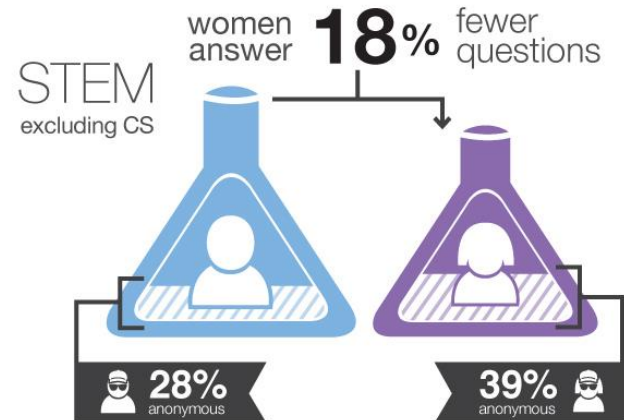
- Women ANSWER < Questions
- Women ANSWER > Questions Anonymously

CS vs STEM

Men Women Anonymous



VS



Poll: Are the sex differences found in answering questions similar between STEM and non-STEM disciplines?



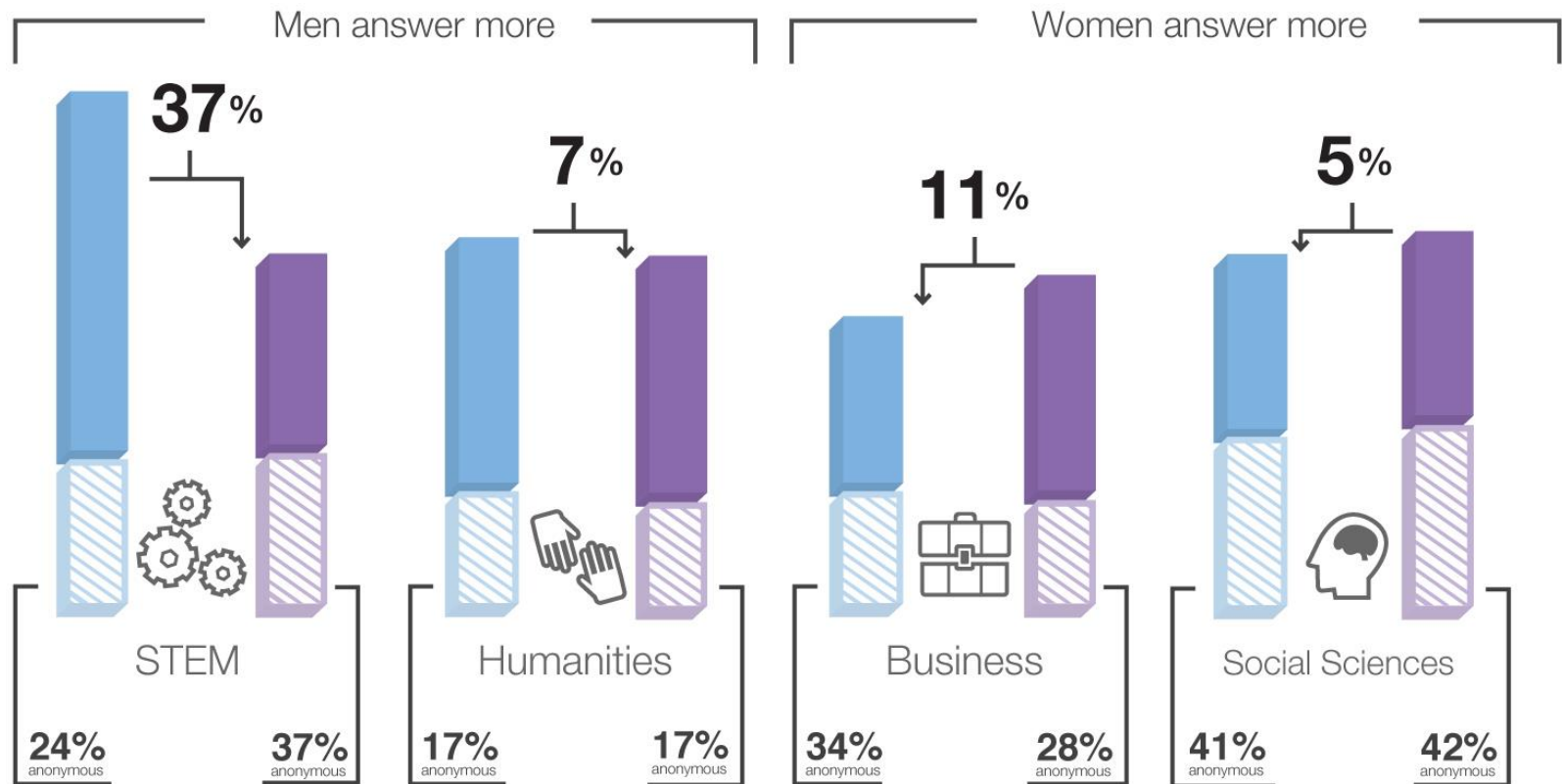
Are the sex differences found in answering questions similar between STEM and non-STEM disciplines?

- Yes, sex differences found in answering questions persist across STEM and non-STEM disciplines. 19.0...
- No, sex differences in answering questions are different in STEM than in non-STEM disciplines. 80.9...

Discipline Differences

- STEM Women ANSWER < Questions
- STEM Women ANSWER > Questions Anonymously

By College Department



Poll: Do sex differences in answering questions persist from undergraduate to graduate classes?

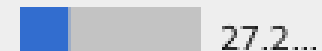


Do sex differences in answering questions persist from undergraduate to graduate classes?

Yes

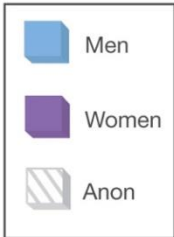
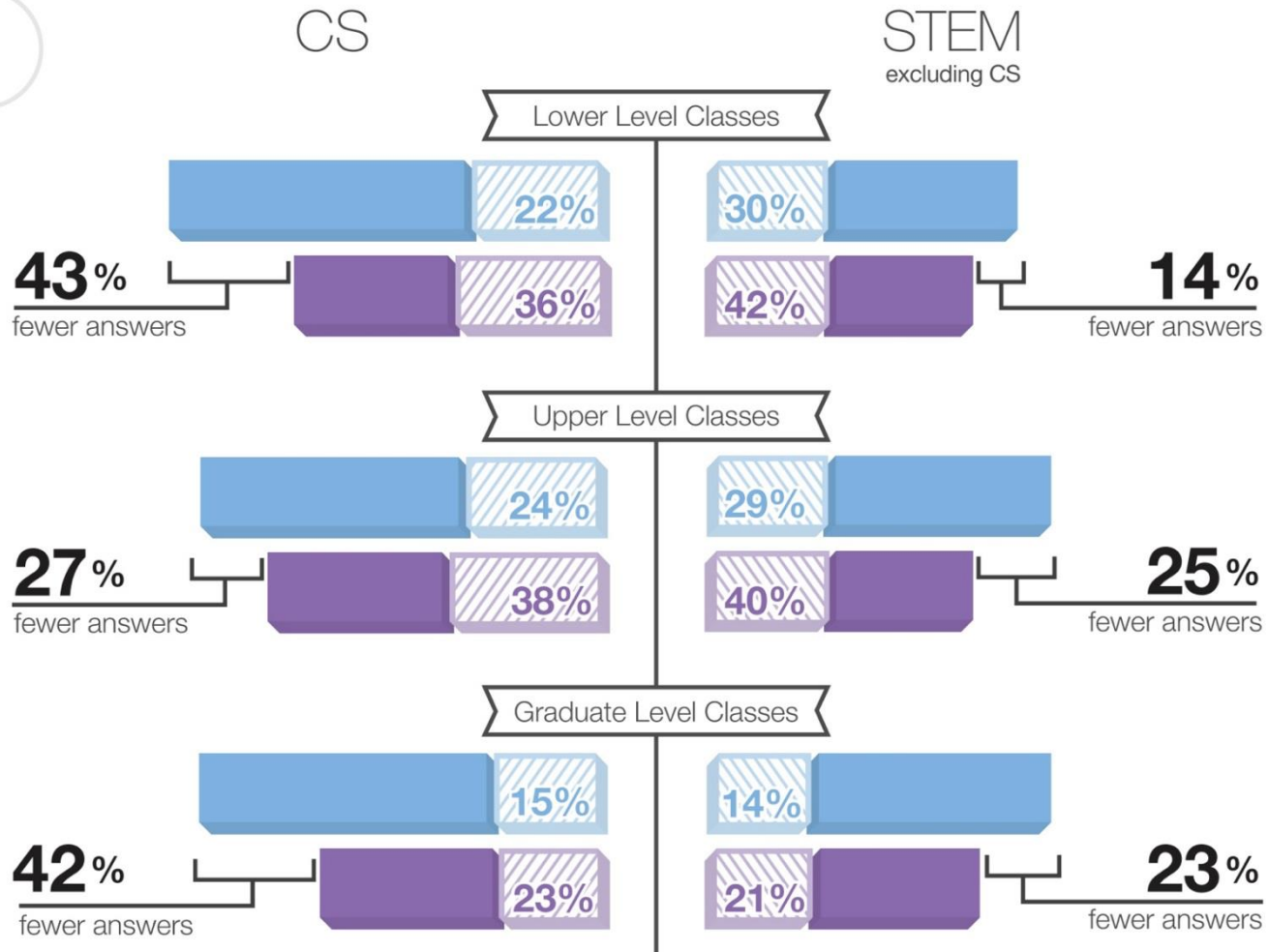


No



Sex Differences Persist

By Level

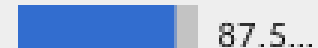


Poll: Does class size influence sex differences in answering questions?

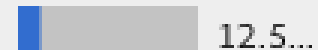


Does class size influence sex differences in answering questions?

Yes



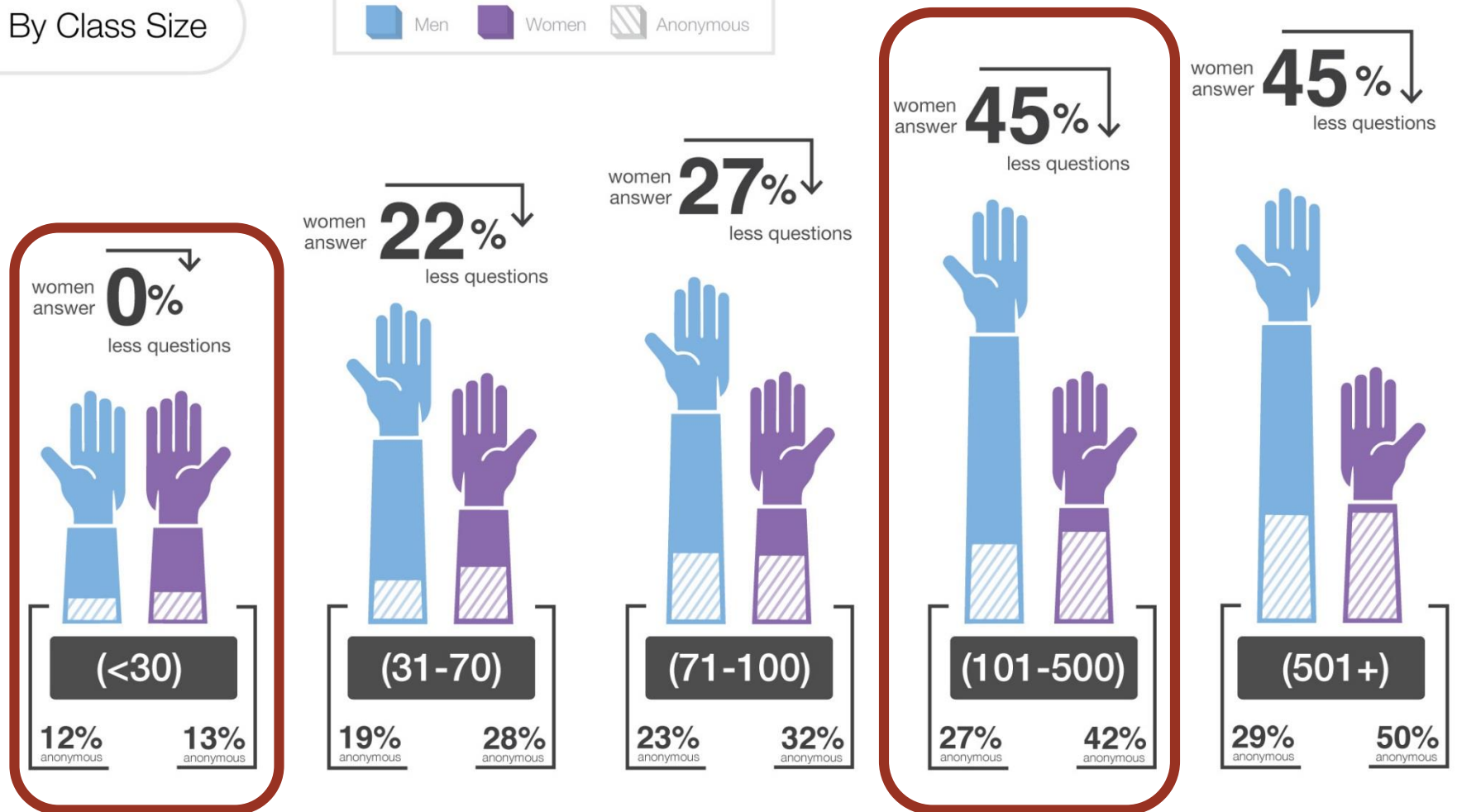
No



Class Size: Sex Differences

By Class Size

Men Women Anonymous



WHAT IS GOING ON?

Confidence Gap

- Women underestimate their capability; self-limit science engagement. (Ehrlinger & Dunning, 2003)
- Women self-limit promotion applications unless they meet 100% of criteria. (Shipman & Kay, 2009)
- Gender differences in salary negotiation (Babcock et al., 2003):
 - Men initiate salary negotiations 4x more often than women;
 - Negotiating women ask for 30 % < money than men.

Unconscious Bias

- Women experience negative consequences from men for negotiating. (Vedantam, 2007).
- Men are more likely to speak, and be heard, than women in the classroom (from elementary through grad school) (Krupnick, 1985), (Neufeld, 2004), Sadker & Sadker (1994).
- Women are more likely to be interrupted (by both men and women). (Hancock & Rubin, 2014)

Underrepresented Men Concur



Cody Coleman
CS major
MIT, class of 2013

Professors scared me. None of them looked like me, so I was afraid that they wouldn't understand me. I was always on guard and tried to avoid interacting with them directly outside of class.

Piazza helped me get over that because I could see that my questions/responses were valuable through instructor feedback without risk of embarrassment.



Dr. David Gries: Faculty Case Example

- David Gries, Professor Emeritus (but still teaching)
- Computer Science, Cornell University
- Using Piazza since 2011, Pooja demoed at Cornell
- **CS2110. Object-Oriented Programming and Data Structures** —second course on computer programming

~600 students

2 instructors

18 grad, undergrad TAs
with weekly sections

30 undergrad consultants:
grade, staff consulting
room 8 hrs per day

~1700 posts this semester

Response time average: 9
minutes

Total contributions: > 7,000

Instructor responses: ~2,000

Student responses: ~650



I have used Pooja as a role model for women and men alike since fall 2011.

Image to the right is from course website in 2011

Read especially the last paragraph

CEO Pooja Sankar of Piazza

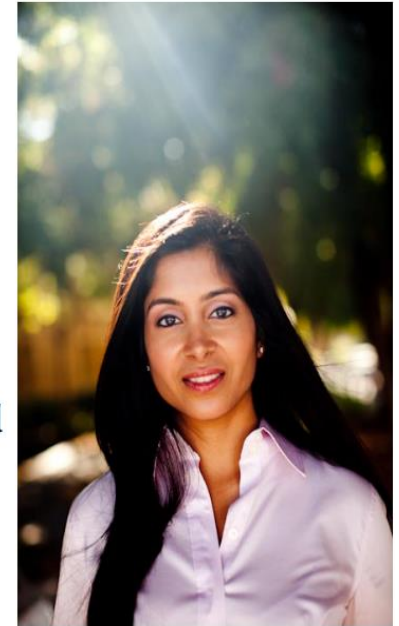
Pooja Nath Sankar is the founder and CEO of Piazza. Her story illustrates what can happen when someone with a passion works hard to translate it into reality.

Pooja went to an all-girls high school in India and was then admitted to IIT Kanpur, India. There, she was one of a handful of girls in the midst of many boys. Too shy to talk much, she studied alone, while the boys worked together, benefitting tremendously from the collaboration. Piazza is Pooja's way of providing a collaboration tool that all can use, whether they are shy or not, whether they are male or female. It fills a niche; it is far better than the wikis and threads that are in use for such discussion groups. She saw a need, figured out a way to fill the need in a really innovative way, and then used her entrepreneurship skills to make it a reality.

Pooja conceived of Piazza in in 2009 --just two years ago-- in a class during her first year at the Stanford Graduate School of Business.

Pooja has degrees from IIT Kanpur (India), the University of Maryland College Park, and Stanford. She has worked at Oracle, Kosmix, and Facebook. Read more here: www.piazza.com/story.

So, what will be *your* Piazza in a few years? You are a Cornell student. Soon, you will have the knowledge and experience and skill to make your contribution to society. The sky's the limit.



Platform Introduction

The screenshot shows the Piazza interface for the course CS 2110. The top navigation bar includes the Piazza logo, the course name 'CS 2110', and tabs for 'Q & A', 'Resources', 'Statistics', and 'Manage Class'. Below this is a list of assignments from 'assignment1' to 'assignment7' and 'prelim'. A search bar and a 'New Post' button are visible. The main content area shows a pinned post titled 'Piazza Webinar' by David Gries, with a date of 4/13/15. Five callout boxes with red borders and arrows point to specific features: 1. 'Switch to different course, including old, inactive ones' points to the 'CS 2110' dropdown. 2. 'Main pane, list of posts on left and post being viewed on right' points to the assignment list. 3. 'Course description, announcements, staff, other resources' points to the 'Piazza Webinar' post. 4. 'No. of posts, responses by students, staff, etc. Can download complete statistics' points to the 'Statistics' tab. 5. 'Enroll, remove staff and students. Set preferences (e.g. whether posts can be completely anonymous)' points to the 'Manage Class' tab.

Switch to different course, including old, inactive ones

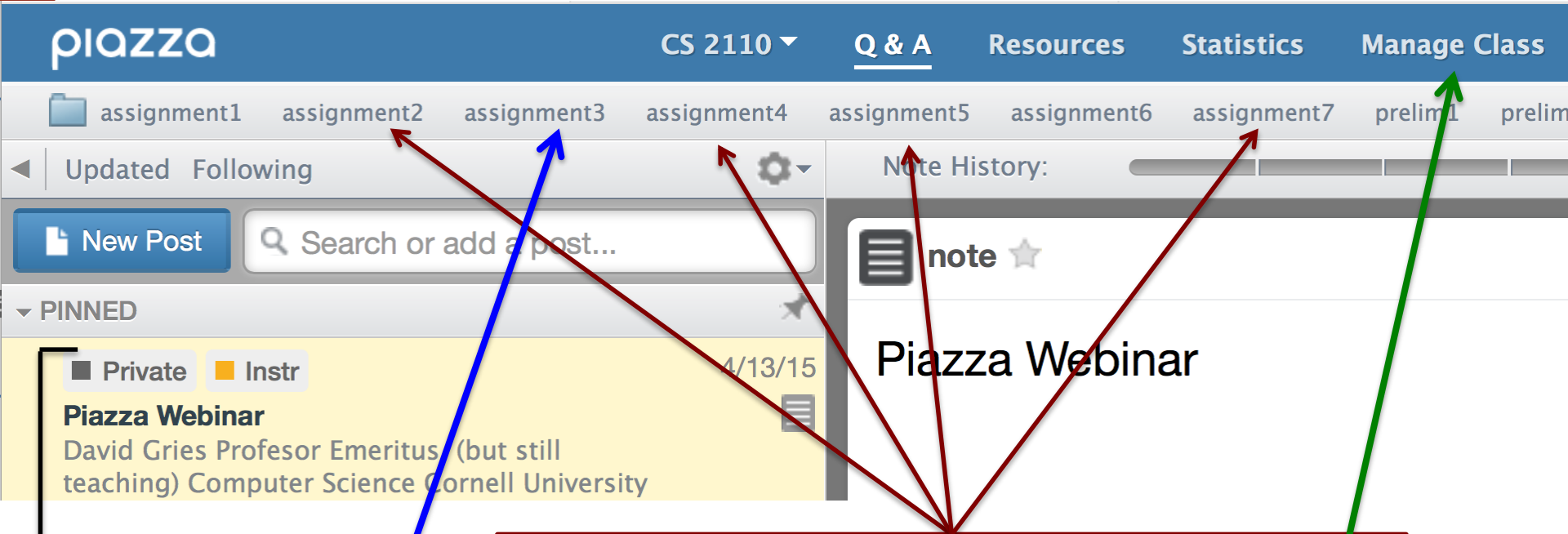
Main pane, list of posts on left and post being viewed on right

Course description, announcements, staff, other resources

No. of posts, responses by students, staff, etc. Can download complete statistics

Enroll, remove staff and students. Set preferences (e.g. whether posts can be completely anonymous)

Folders



Folders into which posts are stored
You make up these folders in **Manage Class**
Any post must say which folder it goes in

Click a Folder and only posts in that folder appear in
List of posts

Folder Assignment 3

Assignment 3 was clicked,
So you see only posts that are in that folder

The screenshot shows the Piazza interface for CS 2110. At the top, there are navigation tabs for 'assignment1', 'assignment2', 'assignment3', 'assignment4', and 'assignment5'. The 'assignment3' tab is selected. Below the tabs, there is a search bar and a 'New Post' button. A filter is applied, showing 'Filtering by: assignment3'. The main content area displays a list of posts, including one from the instructor titled 'How to debug code (and us...)' dated 3/15/15, and a private post titled 'Regrade requests' dated 3/8/15.

plazza CS 2110 Q & A

assignment1 assignment2 assignment3 assignment4 assignment5

Updated Following

New Post Search or add a post...

Filtering by: assignment3

WEEK 4/5 - 4/11

WEEK 3/15 - 3/21

Instr **How to debug code (and us...** 3/15/15

A4 is the first "complex" assignment, and Piazza has been flooded with posts asking for last minute help with de

- An instructor thinks this is a good note

WEEK 3/8 - 3/14

Private **Regrade requests** 3/8/15

Hello Professors, On CMS, there is an option to submit regrade requests for A3; however, the system won't allow for

Left Column Closed

Left column contains list of pinned posts, then lists of posts in chronological order.

Click a small right arrow to open the posts in that period

Pinned posts are extremely useful. They are posts that you want at the top no matter how old they are. We show uses of them later.

The screenshot shows the Piazza interface. At the top, there is a blue header with the 'piazza' logo. Below the header, there are three tabs labeled 'assignment1', 'assignment2', and 'assignment3'. A navigation bar contains a back arrow, the text 'Updated Following', and a search bar with the placeholder text 'Search or add a post...'. A blue button labeled 'New Post' is positioned to the left of the search bar. Below the navigation bar is a list of categories, each with a right-pointing arrow: 'PINNED', 'TODAY', 'YESTERDAY', 'LAST WEEK', 'WEEK 4/5 - 4/11', 'WEEK 3/29 - 4/4', 'WEEK 3/22 - 3/28', 'WEEK 3/15 - 3/21', 'WEEK 3/8 - 3/14', 'WEEK 3/7 - 3/14', and 'WEEK 3/1 - 3/7'. A red box on the left side of the image contains text explaining the left column and provides instructions on how to click the right arrow to open posts in a specific period. A blue arrow points from the text 'Click a small right arrow to open the posts in that period' to the right arrow next to the 'LAST WEEK' category.

A Left Column Period is Open

Click anywhere in the summary of a post and it will open in the right column.

Piazza has lots of bells and whistles, but they are very user-friendly. Example: hover your mouse over one of these icons and a pop-up window will explain it to you.

The screenshot shows the Piazza interface with a blue header containing the 'piazza' logo and 'CS 2110'. Below the header are navigation tabs for 'assignment1', 'assignment2', 'assignment3', and 'assignment4'. A search bar and a 'New Post' button are visible. The main content area is divided into sections: 'PINNED' and 'TODAY'. The 'TODAY' section contains a list of posts:

- binary search tree** (2:49PM): Can a binary search tree have two elements with the same exact value? I feel that it cannot because then there would exi
- Fall 2013 T/F P** (2:39PM): The correct answer to "If a method does something that requires N^2 operations and then does something else that req
- hashcode time complexity?** (2:19PM): Why would this be $O(l)$ since there is no specification on the implementation of `HashCode()` ??? It could be incredibly co
- a5** (1:51PM): Will our grades for a5 be released before the prelim? Thanks!

Hyperlinks

Hover mouse over arrow, see that this is post number @1103.
(Look what else you can do.)

@1103 is a hyperlink. Click on a hyperlink in a post and it goes to that post.
Awesome!

The screenshot shows the Piazza website interface. At the top, there is a navigation bar with the Piazza logo, a dropdown menu for 'CS 2110', and links for 'Q & A' and 'Resources'. Below the navigation bar, there are tabs for 'assignment1' through 'assignment6'. A search bar is present with the text 'Search or add a post...'. A 'New Post' button is also visible. The main content area displays a list of posts. The first post is titled 'Assignment A5: FAQs' and is dated 3/19/15. A context menu is open over this post, showing options: 'Type @1103 to link to this post', 'Archive (Hide from your feed)', 'Delete (from everyone's feed)', 'Unpin (to top of everyone's feed)', 'Stop Following', and 'Mark as Unread'. Below this post, there are other posts including 'Poll on study habits' (2/19/15), '#Study Notes' (2/9/15), and 'Office Hour Cancellations' (1/21/15). On the right side, there is a 'note' sidebar with a star icon. The note content includes 'Assignment A5', 'SUBMISSION', 'ECLIPSE ISSUES', 'PROBLEMS WITH FILE', and 'DEPTH OF RECURSION'. A red arrow points from the text '@1103 is a hyperlink...' to the '@1103' text in the context menu. Another red arrow points from the text 'Awesome!' to the '@1221' text in the note sidebar.

Updated Student Note (Not Question)

Students do post notes to help others. The original poster gave his name, the updater did not

The screenshot shows the Piazza forum interface. The top navigation bar includes the Piazza logo, course information (CS 2110), and various menu items like Q & A, Resources, Statistics, and Manage Class. The user profile for David Gries is visible in the top right. Below the navigation bar, there are tabs for different assignments and exams. The main content area is divided into two sections: a list of posts on the left and a detailed view of a note on the right.

Post List (Left):

- Updated Following
- New Post** Search or add a post...
- For question number 4 on the Spring 2014 prelim we are asked to perform Dijkstra's algorithm on the following graph
- For anyone struggling with time compl...** 2:07PM
http://bigocheatsheet.com/ especially the diagram at the bottom outlining the relative times of each in comparison to e
- maxDepth method?** 11:44AM
On one of the practice prelims, we're given the following information: Binary Search Trees. A BST is balanced when
- Sorting Algorithms** 11:09AM
For the second prelim, how in depth should we know the the sorting algorithms?
- Recursive Grammer** 8:40AM
I am still a bit confused as to why the rules "Sentence and Sentence," and "Sentence or Sentence," allow
- Implementing Code for certain Algorit...** 3:48AM
What will be we expected to be able to code on the exam? Will we be expected to be able to implement the different grap
- THIS WEEK

Note Detail (Right):

- Note History: [Progress Bar]
- note** ☆ 96 views
- For anyone struggling with time complexities... this helped me a lot**
- <http://bigocheatsheet.com/>
- especially the diagram at the bottom outlining the relative times of each in comparison to each other
- prelim2
- edit · good note | 10 Updated 1 day ago by Nuwan Ariyawansa (anon. to classmates) and Adit
- followup discussions for lingering questions and comments
- Start a new followup discussion
- Compose a new followup discussion

Student Answer to a Question

Shows main panes:

- Question
- Students' answer
- Instructors' answer
- Follow up

The screenshot displays a course management interface with two main panes. The left pane shows a list of posts, and the right pane shows the details of a selected question.

Left Pane (Posts):

- Search bar: "Search or add a post..."
- Post 1: "graph" (3:43PM), Type @1586 to link to this post, Archive, Delete, Pin, Follow, Mark as Unread.
- Post 2: "Sample code for assignment 4" (2:40PM), "We didn't get perfect score for assignment 4. Is it possible for you to upload the correct code for that assignment".
- Post 3: "Spring 2014 Question 4.c" (2:20PM), "For question number 4 on the Spring 2014 prelim we are asked to perform Dijkstra's algorithm on the following graph".
- Post 4: "For anyone struggling with time compl..." (2:07PM), "http://bigocheatsheet.com/ especially the diagram at the bottom outlining the relative times of each in comparison to e".
- Post 5: "maxDepth method?" (11:44AM), "On one of the practice prelims, we're given the fr...".
- Post 6: "Recursive Grammer" (8:40AM), "I am still a bit confused as to why the rules 'Sentence and Sentence,' and 'Sentence or Sentence,' allow".

Right Pane (Question Details):

- Question title: "question" (59 views)
- Question text: "graph so for the algorithms in graph, such as BFS, DFS, Dijkstra, are we supposed to just know how it works, or we need to be able to write the code for this? (I did look at the study guide, but it didn't mention whether we are supposed to be able to develop the code, so just wanna confirm here)"
- Buttons: "practice", "edit", "good question" (0)
- Updated: "Updated 1 day ago by XiaochanZong (anon. to classmates)"
- Section: "the students' answer, where students collectively construct a single answer"
- Answer: "@1576" (An instructor (David Gries) endorsed this answer)
- Buttons: "edit", "undo good answer" (1)
- Updated: "Updated 1 day ago by Yiting Wang (anon. to classmates)"
- Section: "the instructors' answer, where instructors collectively construct a single answer"
- Text: "Click to start off the wiki answer"
- Section: "followup discussions for lingering questions and comments"
- Text: "Start a new followup discussion", "Compose a new followup discussion"

Annotations:

- "Anonymous answer" points to the student answer "@1576".
- "anonymous question" points to the question text.
- "Link to answer elsewhere!" points to the "undo good answer" button.
- "Instructor endorsed" points to the green endorsement text.

Question that Needs Follow Up

Student asks for answers.

Look, they are polite!

We tell them to try to answer the questions. We'll help if wrong.

? question ☆ 22 views

Misc questions

What is the answer to these questions?

1. What is the runtime of an algorithm that runs insertion sort on an array $O(n^2)$ and then runs binary search $O(\log n)$ on that now sorted array?
2. What is the runtime of finding and removing the fifth element from a linked list? What if in the middle of that remove operation we swapped two integers exactly 100000 times, what is the runtime now?
3. What is the runtime of running merge sort 4 times? n times?
4. How are heaps usually represented? If we want the right child of index i , how do we access it?
5. What should we do if we override `equals()` when using hashing?

Thank you in advance!!

prelim2

[edit](#) · good question | 0 Updated 19 minutes ago by Richa Deshpande (anon. to classmates)

i **the instructors' answer**, *where instructors collectively construct a single answer*

What do you think? It's good practice to try to come up with your own solutions first before asking for ours. We'll be glad to help point you in the right direction.

[edit](#) · good answer | 0 Updated 25 minutes ago by Leon Zaruvinsky

Student *and* Instructor Respond to Follow Up


Student answers.

Another student responds

At the same time that instructor answers


followup discussions *for lingering questions and comments*


Resolved Unresolved

 **Richa Deshpande (anon. to classmates)** 28 minutes ago

1. $O(n^2)$
2. $O(1)$
3. $O(n \log n)$ and $O(n^2 \log n)$
4. the index of the right child is $2i + 2 \dots?$
5. Be aware that two objects that hash to the same value may not be equal

How do these seem?

 **Yiting Wang (anon. to classmates)** 10 minutes ago I agree with the first four, but I think 5 might be that we have to override `hashCode()` as well, since if two objects are equal, their `hashCode` should also be equal?

 **David Gries** 10 minutes ago Fine. That is good!
On question 5, since you are going to use hashing, rather than be aware, as you say, override the hash function to that equal values hash to the same address.

Reply to this followup discussion

Start a new followup discussion

Compose a new followup discussion

Pinned notes to collect assignment FAQs

With so many students (almost 600) we get lots of questions on programming assignments. Many duplicates questions. Hard for students to search.

Solution: Pin a note for the assignment. Put in it the assignment handout.

Make a list of FAQs. See a question other students could be interested in? Put it in the FAQ list, perhaps with hyperlink to answer.

The screenshot shows a social media feed on the left and a detailed view of a note on the right. The note is titled "Assignment A5: FAQs" and contains several sections of frequently asked questions and answers. A red arrow points from the text "See a question other students could be interested in?" to a specific FAQ item in the note. A blue arrow points from the text "Put it in the FAQ list, perhaps with hyperlink to answer." to the note's content.

Assignment A5: FAQs
This note will contain frequently asked questions, with answers, on assignment A5. It will also contain the handout and the release code.
You are responsible for its contents. Here are the attachments: [a5handout.pdf](#) [a5release.zip](#)

SUBMISSION
1. Please place the comment that you find in note @1190 at the top of class GUI and fill in your time etc.

ECLIPSE ISSUES
1. What do I do when this message appears? "The type Point2d is not accessible due to restriction on required library /System/Library/Java/Extensions/vecmath.jar".

PROBLEMS WITH FILES/DIRECTORIES ON HARD DRIVE
1. My code says that an item is a directory but its list of files is null. What should I do? **See Q6 of FILETREETMAP.SIZE below**
2. I get a null-pointer exception if I don't select a directory in the navigation pane at the start. Why is this? What did I do wrong? **See @1253.**

DEPTH OF RECURSION
1. Please explain more about the depth of recursion. **See @1141 and its followup discussion**
2. When increasing the depth of recursion, it can take up to 30 seconds. Am I doing something wrong? **See @1221.**
3. Should I constrain the decrease button to prevent negative depths? **See @1110, @1147**

Office Hour Cancellations

The staff maintains a google calendar, which students look at often. When a staff member has to cancel an office hour, they indicate it in the pinned office-hour-cancellation post.

The image shows a screenshot of a social media interface. On the left is a feed of posts, and on the right is a detailed view of a specific post titled "Office Hour Cancellations".

Feed Posts:

- Office Hour Cancellations** (1/21/15)
cancel office hours, contains only
Type @16 to link to this post
Archive (Hide from your feed)
Delete (from everyone's feed)
Unpin (to top of everyone's feed)
Stop Following
Mark as Unread
- Topological Sort and DAG** (4:08PM)
You run a topological sort to determine if a graph is a DAG right? What would be a case where you wouldn't be able t
- Is Integer[] a subtype of Object[]?** (3:57PM)
Just to confirm this in Generic type.
1 Unresolved Followup
- Misc questions** (3:48PM)
What is the answer to these questions? 1. What is the runtime of an algorithm that runs insertion sort on an array $O(n^2)$

Note Detail:

Note History: History Disabled By Instructor

note ☆ stop following 552 views

Office Hour Cancellations

When staff members have to cancel office hours, they list the cancellation here. It contains only future canceled office hours. They should also cancel them on the google calendar #pin

Consultants hold Office Hours in Upson 360. Each TA's OH location will be posted on the website by their name on the "Consulting & Office Hours tab"

Current Cancellations:

- Sunday April 26
None
- Monday April 27
None
- Tuesday April 21
All Office Hours 5:00pm and later are cancelled due to Prelim 2
Aaron Nelson (4-5pm)
Vidit Bhargava (3:00PM - 4:30PM)



Conclusions

1. “Pooja’s” Story—Reflection

- How do you demonstrate sensitivity to your students, especially “different” students?

2. Piazza Research—Results

- Anonymity w/in respectful, controlled environment creates risk-free, inclusive learning environments

3. Piazza Platform—Faculty Case Example

- An easy-to-adopt, flexible, free, option for faculty to help create a “safe,” inclusive learning environment for ALL students

HOW TO APPLY TO YOUR TEACHING CONTEXT!



Citations: Recommended Reading

1. Babcock, L., Laschever, S., Gelfand, M., & Small, D. (2003). *Nice girls don't ask*. Harvard Business Review. <https://hbr.org/2003/10/nice-girls-dont-ask/>
2. Ehrlinger, J. & Dunning, D. (2003). *How chronic self-views influence (and potentially mislead) estimates of performance*. Journal of Personality and Social Psychology, Vol 84(1) 5-17.
3. Hancock, A. & Rubin, B. (2014). *Influence of Communication Partner's Gender on Language*. Journal of Language and Social Psychology
4. Jong, B., Lai, C., Hsia, Y., Lin, T. (2013). *Effects of Anonymity in Group Discussion on Peer Interaction and Learning Achievement*. IEEE Transactions on Education, Vol 56, No. 3.
5. Krupnick, C. (1985). *Women and Men in the Classroom: Inequality and Its Remedies*. On Teaching and Learning, Vol 1. <http://isites.harvard.edu/fs/html/icb.topic58474/krupnick.html>
6. Neufeld, Adam (2004). *Study on Women's Experiences at Harvard Law School*. <http://www.law.harvard.edu/students/experiences/ExecutiveSummary.pdf>
7. Sadker, M. & Sadker, D. (1994). <http://www.aauw.org/files/2013/02/how-schools-shortchange-girls-executive-summary.pdf>
8. Shipman, C. & Kay, K. (2009) *Womenomics*. Harper Collins Publishers, NY. (Online review: <http://www.theatlantic.com/features/archive/2014/04/the-confidence-gap/359815/>)
9. Vedantam, S. (2007). *Salary, Gender and the Cost of Haggling*. Washington Post. <http://tinyurl.com/WPNegotiationCosts>

Action Checklist

STEMming the Confidence Gap—Mitigating Social Judgement and Social Isolation

April 22nd, 2015 Webinar with P. Sankar, J. Gilmartin & D. Gries

Computer science classes are highly collaborative, or rather they should be. It's tough to master computer science material without collaborating with others. And it's tough to collaborate with others when you look and feel so different from your peers. We see this in [studies](#) ^[1] of women leaving STEM careers: isolation is a key factor leading women to leave. What are some techniques professors can use to mitigate feelings of isolation among women and minorities in their engineering classes? Hopefully many academics will explore this very topic, but here are five starting tips:

Influence	Reflections
Modify the lecture. Make Learning active.	<ul style="list-style-type: none">✓ A recent study ^[2] has shown that modifying course structures beyond the traditional lecture format can significantly improve student outcomes for some under-represented groups, and specifically for black and first-generation students taking biology courses. The study implemented course structures that encouraged ongoing study and skills practice and collaboration, or active learning, while decreasing the reliance on material from lectures, or passive, solitary learning. The result: the achievement gap between black students, and their white and Asian peers was almost halved, and the gap between first-generation students, and their white and Asian peers was almost eliminated.✓ Check out the EIT website ^[3], specifically the EIT Active Learning webinar ^[4] to familiarize yourself with options for creating an inclusive, learning context.
Assign Project Groups.	<ul style="list-style-type: none">✓ Research has found that small group work can help create a more collaborative and comfortable environment for learning, but students who feel different won't always have an easy time finding project teammates. Allowing students to self-select their project groups is akin to allowing the popular "jocks" to self-select their dodgeball teammates: the "non-jocks" will be isolated and then pummeled. If you allow students to choose their teammates, they will choose students like themselves, so choose for them—at least some of the time.

Try Piazza: 6 Easy Steps

1. Add your class

Click the big blue button on *Piazza.com* to create your class – it takes just 2 minutes

Professors and TAs Get Started

2. Enroll your students

Log in and paste your roster in the *Manage Class* tab to enroll your students with one click

mjohnson@stanford.edu, amurphy@stanford.edu, jknight@stanford.edu,
sbrenstuh@stanford.edu, sgokhale@stanford.edu, miam@stanford.edu,

Add Students or upload a file

3. Prep for the first day

Create custom folders to tag and organize the posts in your class



4. Set your class up for success

Determine anonymity/privacy settings and establish response expectations with TAs

Posting Anonymously: Enable Disable
Private Posts: Enable Disable

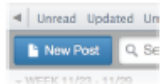
5. Introduce your students to Piazza

Share your Piazza class link (in the *Manage Class* tab) with your students via email and on your course website

Class Link:
piazza.com/stanford/spring2014/cs100/home
↪ This is the link to your course page on Piazza.

6. Make your first post

Encourage your students to start posting in the Q&A forum, instead of sending emails with questions



Downloads, Links & Resources!

- ✓ Download recommended files (e.g., PPT, Articles)
- ✓ Website Links:
 - Go to the EIT website: www.WSKC.org/EIT
 - Use the *Action Checklists* & Other Resources
 - Apply for the [Inclusive Educator Award](#) (May 1st deadline)
 - Listen to previously recorded webinars
 - Sign up to participate in future live webinars
 - Register for [“Creating a Positive Climate for Learning: Dealing with Incivility and Conflict in the Classroom”](#) (May 19, 2015; 2-3:00pm ET)
 - Go to the Piazza website: <https://piazza.com>
- ✓ [Provide us feedback!](#)
 - Personalized “Certificate of Participation” upon completion!



Poll 8: What are YOUR next steps?

Based on what you have learned, what are YOUR next steps to creating an inclusive learning context for your students?

What are your next steps in creating an inclusive learning context for your students?
(check all that apply)



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