THE UNIVERSITY OF ARIZONA
College of Engineering

THE UNIVERSITY OF ARIZONA
COLLEGE OF MEDICINE TUCSON
Sonoran Center for
Excellence in Disabilities

IDEAS in Mind

Diverse problems require diverse people

Welcome

Introductions

Internships Designed with Engineering Autistic Students in Mind (IDEAS in Mind)

- IDEAS in Mind seeks to promote successful translations for students with autism spectrum disorders (ASD) and other disabilities in postsecondary engineering education to successful careers based upon their academic and professional training.

- Funded by the National Science Foundation

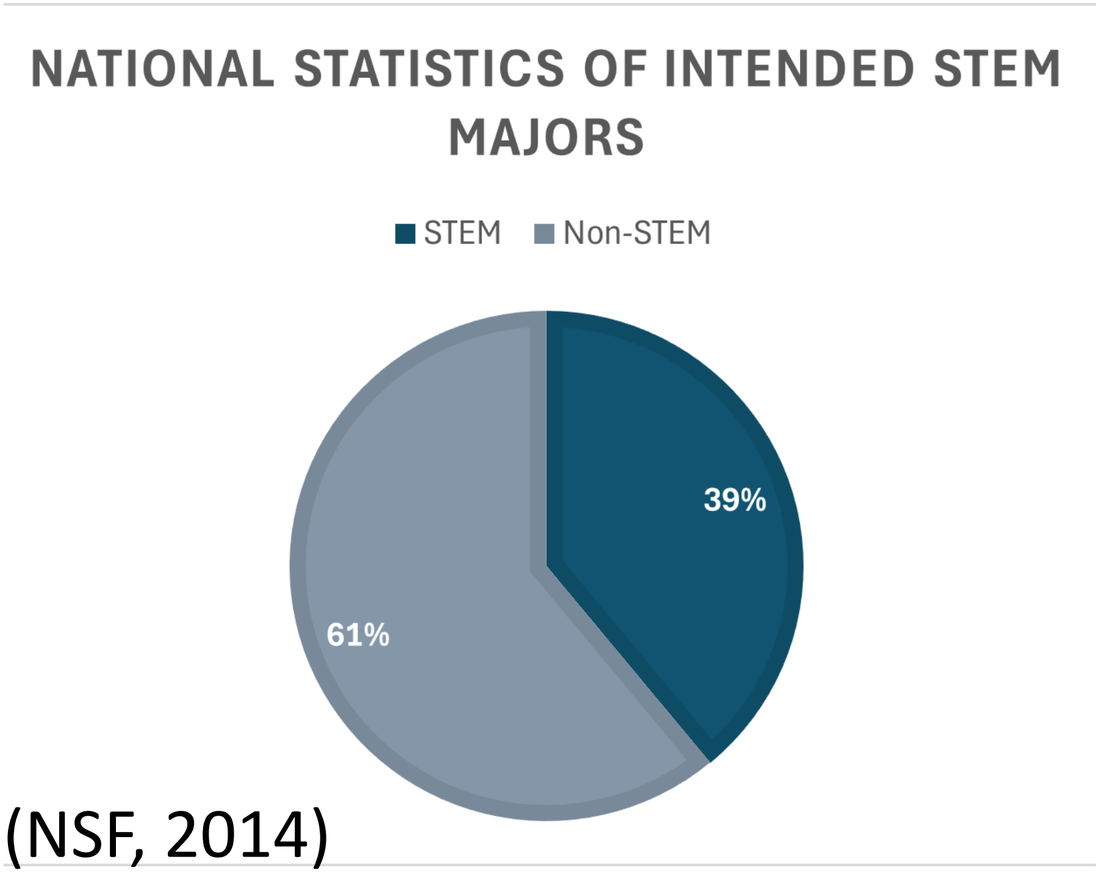
Motivation-part 1

- In the US, engineering professions have an expected growth of about 188,000 jobs per year from now until 2032
  (U. S. Bureau of Labor Statistics, 2023)

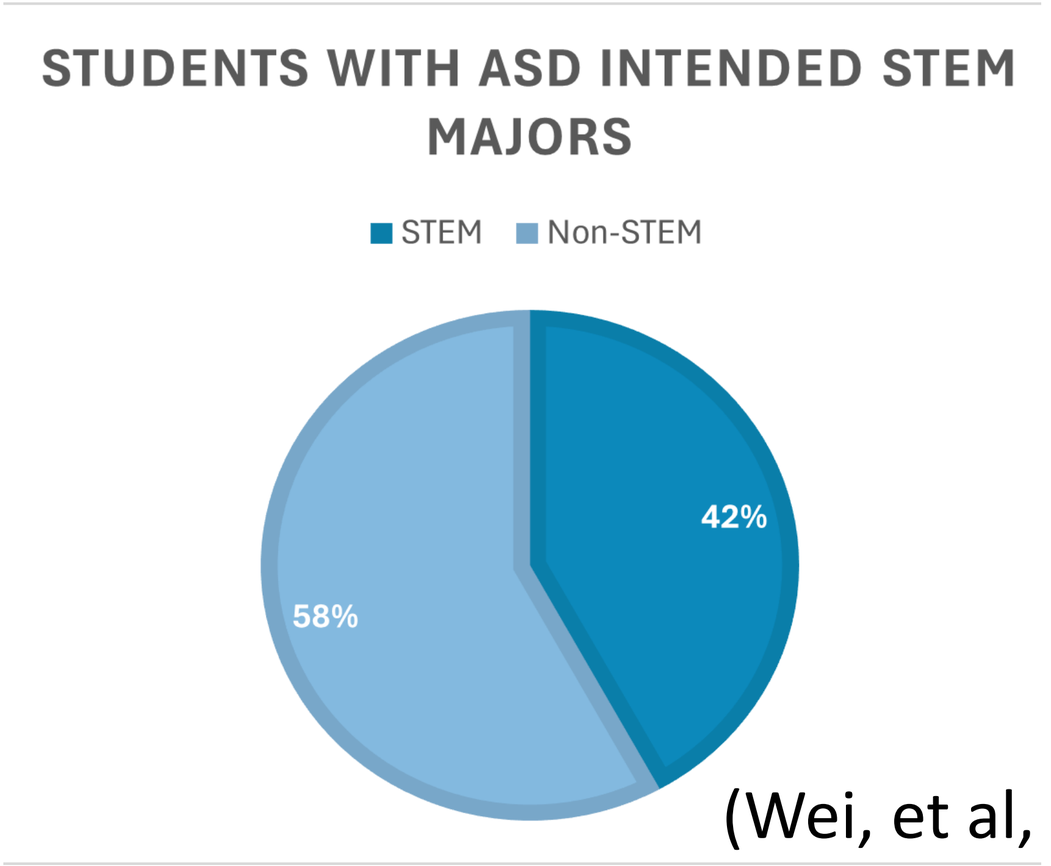
- Despite this need, engineering education is among the most challenging to complete, with about 30% of students obtaining a bachelor’s degree within four years of starting (ASEE, 2018)

Motivation-Part 2

Students with ASD enroll at lower rates and make up a small proportion of the overall student population in higher education, but they opt for STEM degrees at a higher rate than the general population.



(NSF, 2014)



(Wei, et al, 2014)

Motivation- Part 3

- As the need for more engineers in the US workforce increases, it is important for engineering education programs to adapt educational models to include historically excluded sectors of the undergraduate population, particularly autistic students who may be predisposed to excel in engineering majors.

- In the US, autistic adults experience unemployment and underemployment at alarmingly high rates.
  - In one study of unemployment rates of adults with ASD, **41%** of survey respondents who were **unemployed had a bachelor's degree or higher**.
  - Additionally, about **46%** of the overall respondents worked **part-time** (Ohl, et al, 2015).

Goals of IDEAS in Mind

- Offer **pre-employment support** and **internship coaching** to undergraduates with ASD and other disabilities in the U of A College of Engineering.
- Provide **training** and **support** to partnering employers to prepare each party to interview and manage neurodivergent interns.
- Break down barriers to experiential learning for neurodiverse engineering students, **building their sense of engineering identity** and helping them successfully persist to **degree completion** and **full-time employment**.
- ***Collaboratively* develop inclusive management practices** with companies interested in hiring neurodivergent engineers.

Why focus on internships?

- Engineering Internships lead to career jobs!
- 80% - 85% of all interns are offered jobs with their parent company!

“Win-Win” situation

- College of Engineering and Sonoran Center for Excellence in Disabilities help to prepare students for potential internships with engineering firms.
- Help assist and guide students through interview process and entering the professional world.
- Help engineering companies to understand how to conduct interviews with students WITHOUT compromising their needs.
- Assist engineering companies to maximize intern output to insure a productive experience for both student and engineering firm.

Support for Employers-Training

- Inclusive Hiring and Inclusive Leadership Resources for Employers
  - Understanding of the benefits, opportunities, and challenges with hiring individuals with disabilities
  - A foundation in disability and neurodiversity awareness
  - Guidance for the language of job advertisements, positions descriptions, and role specifications
  - Best practices for accessibility and accommodations for application and interview processes, including interview techniques and strategies.
  - Information on how to support neurodiverse interns and employees in the workplace through effective communication, knowledge of accommodations and introduction into disability etiquette.

Support for Employers-Internship

During the summer internship

- Bi-weekly check-in meetings with managers and staff from Sonoran Center to discuss interns' accommodations.
- Provide asset-based coaching to managers on ways to employ skills learned in the Inclusive Hiring and Inclusive Leadership resources.

Benefits of an Inclusive Workforce

- Disabilities often confer unique talents that make people better at particular jobs.
- Talent pipeline opportunity-expand and retain a wide talent pool.
- A more diverse and inclusive workplace to solve diverse problems.
- The presence of employees with disabilities elevates the culture of the entire organization, making it more collaborative and boosting productivity.
- Meet growing workforce demands.
- Reputation for inclusiveness enhances a business' value proposition with customers, who become more willing to build long-term relationships with the company.
- Being recognized as socially responsible gives a firm an edge in the competition for capital and talent.

Support for Engineering Students-During school year

- One-on-one support to complete resume, identify needed accommodations, and prepare for the interview.
- Enrollment in a career development class covering professional competencies in engineering such as communication and collaboration, workplace culture and values, project management, research, self-directed learning, and entrepreneurial mindset.
    - Instruction on *self-advocacy* and *goal setting* through an asset-based approach and developing a growth plan
- Student feedback about course on “hidden curriculum”
    - “We talked a lot about what people kind of expect from those interactions… just kind of general ways to be polite to people. I feel like I did a lot better than I usually do… making conversation in the office, what’s appropriate.”
    - “This class is teaching me the little nuances socially… like how to do small talk.”

Support for Engineering Students-During internship

Bi-weekly coaching with staff from the Sonoran Center during the summer.

- Topics include self-advocacy, goal setting, and other professional skills.
- Review of goals for internship
- Opportunity to problem solve challenges and celebrate successes

Findings from Year One

Examined program implementation and progress toward the four core milestones of the IDEAS in Mind cycle

- Milestone 1: Employers Create Opportunities for IDEAS in Mind Internship
  Milestone 2: Students Receive Internship Offers
- Milestone 3: Students Develop a Growth Plan with Supervising Managers
- Milestone 4: Internship Completion and Next Steps

Milestone 1

Employers Create Opportunities for IDEAS in Mind Internship

- Employer outreach
- Development of employer training resources
- Employer Information Session- September 4, 2024
  - 13 professionals attended
- Inclusive Hiring Training Materials developed and presented
  - Guide and materials shared with 4 companies
  - 1 company completed full training. 13 supervisors and team leads participating
- Work with each employer's internship process- so create a requisition, some interview based on our recommendation, some have specific person who reviews IDEAS in Mind applications, etc.

Milestone 2

Students Receive Internship Offers

- 10 students enrolled in the IDEAS in Mind career development course during the 2024–2025 academic year.
  - Course included resume development, interview coaching, and discussion of accommodation needs through an asset-based lens
  - Topics covered include: professional competencies, workplace culture, communication skills, and self-advocacy
  - 10 professional mentors to support student learning
- 8 students secured summer internships
- Students who did not receive internship offers remained engaged in spring training

Milestone 3

Students Develop a Growth Plan with Supervising Managers

- All students completed the 2-unit career development course
- Students developed individualized growth plans
  - Supporting workplace success and goal attainment
  - To be used in their internships to set expectations of themselves
  - These plans served as structured guides for the summer internship experience.

Milestone 4

Internship Completion and Next Steps

During the summer internships

- Employers received information through coaching sessions and Inclusive Leadership infographics
  - ADA guidance, disability etiquette, communication strategies, and accommodation planning.
- Interns also participated in coaching meetings
  - self-advocacy and goal setting.
- By the end interns and supervisors discussed next-step employment or continuing internship opportunities.

Key Takeaways

- IDEAS in Mind program demonstrates strong early progress toward building a sustainable, inclusive pathway for autistic engineering students.
- The program successfully engaged employers, supported students in developing workplace readiness skills, and implemented structured internship and coaching supports.
- Training materials and mentorship structures created this year lay a foundation for long-term impact.

Partnerships in Year One

- Freefall Aerospace
- Pyx Health
- Timestep Center for Quantum Networks (University of Arizona, UMass Amherst, University of Oregon)
- School of Mining, Metallurgy, and Resources & Bureau of Applied Research in Anthropology (BARA)

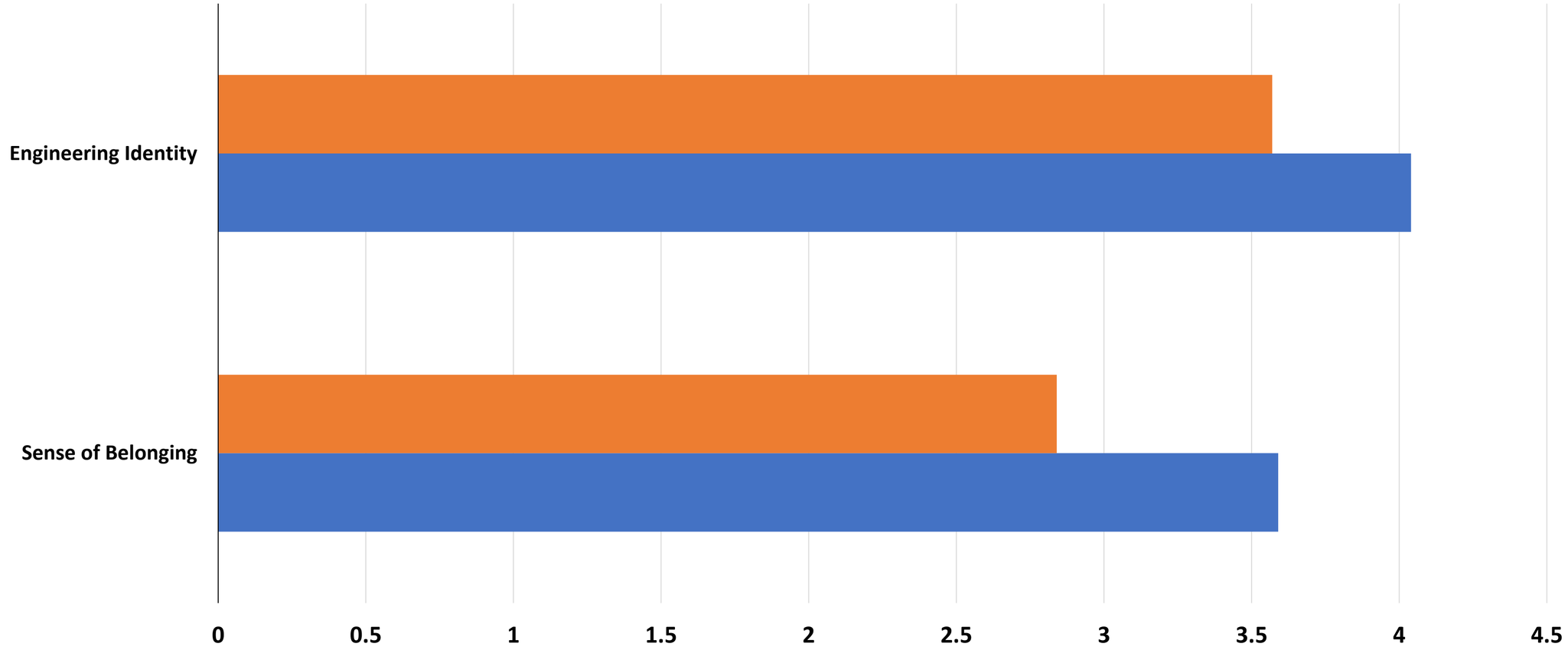
Student pre and post survey

Students took a retrospective pre- and post-survey that assessed their...

- engineering identity
- formation sense of belonging
- self-determination
- 9 of the 10 students completed the survey

Survey Findings- Part 1

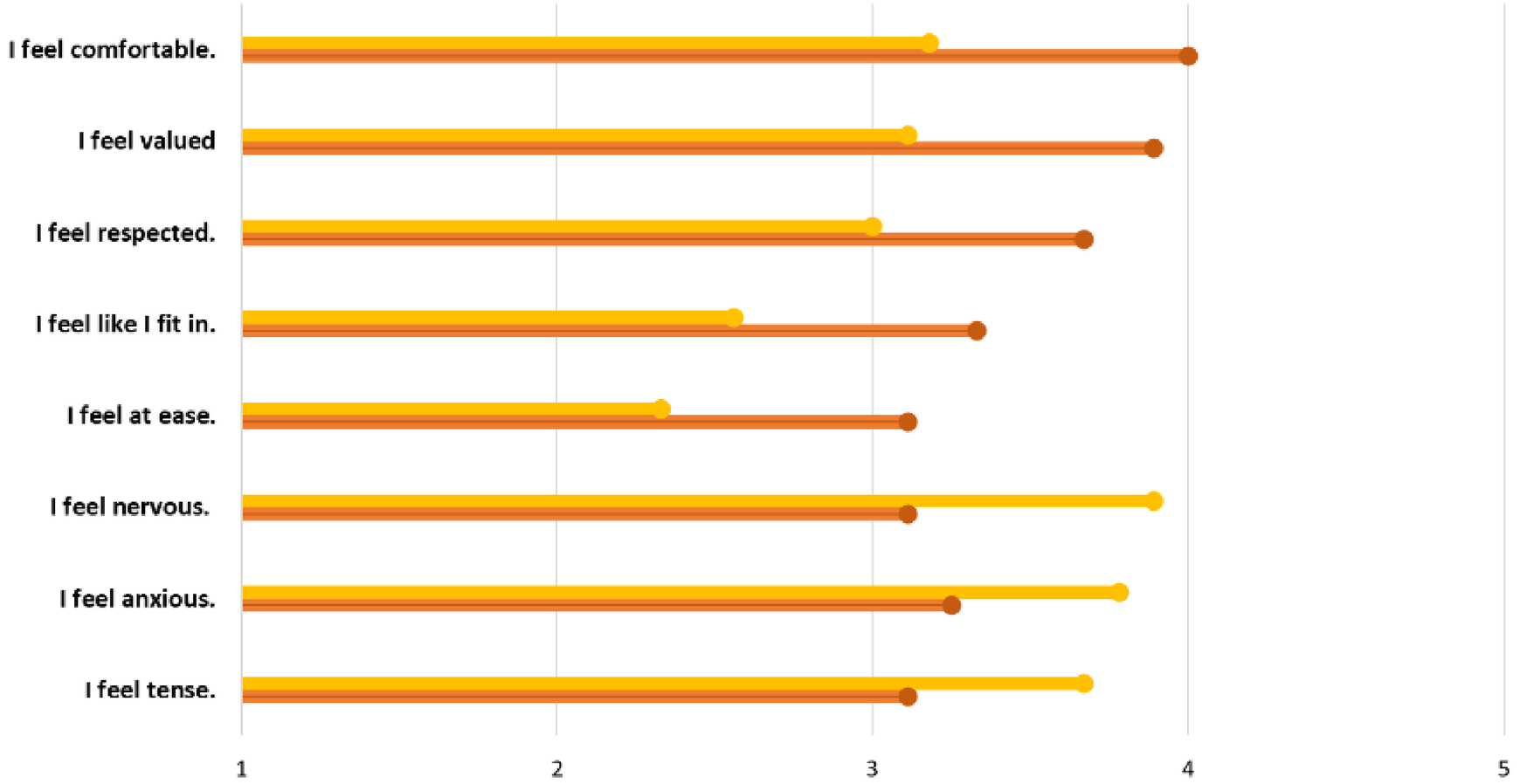
Average pre-test & post-test scores show that IDEAS in Mind increases student engineering identity and sense of belonging. Scale was 1-5, with 5 representing "Strongly agree."



Survey Findings- Part 2

Average pre-test & post-test scores show that IDEAS in Mind increases students' feelings of acceptance, lowers feelings of nervousness in the engineering community.

Scale was 1-5, with 5 representing "Strongly agree."



This year 2025-2026

- 9 students participated in IDEAS in Mind program. Engaged in monthly discussion groups that covered topics outlined in course
  - Saw less consistent engagement than when it was a course
- 5 students secured summer internships.
- 4 students participating in biweekly check-ins with Sonoran Center staff.
- Partner organizations for internships
  - Raytheon
  - Binational Migration Institute, University of Arizona
  - Honeywell

Thank you!

Thank you for your time and engagement!

Questions?

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