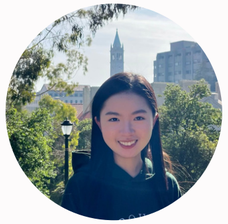
MongoDB

PROJECT CONCLUSION

M.E.T. Strategy Group

Meet the Team



Vivian Wu
EECS + Business
Project Manager

Vyoma Patel
EECS + Business
Strategist

Zander Vaux
MechE + Business
Strategist

Navjosh Rikhraj
MechE + Business
Strategist

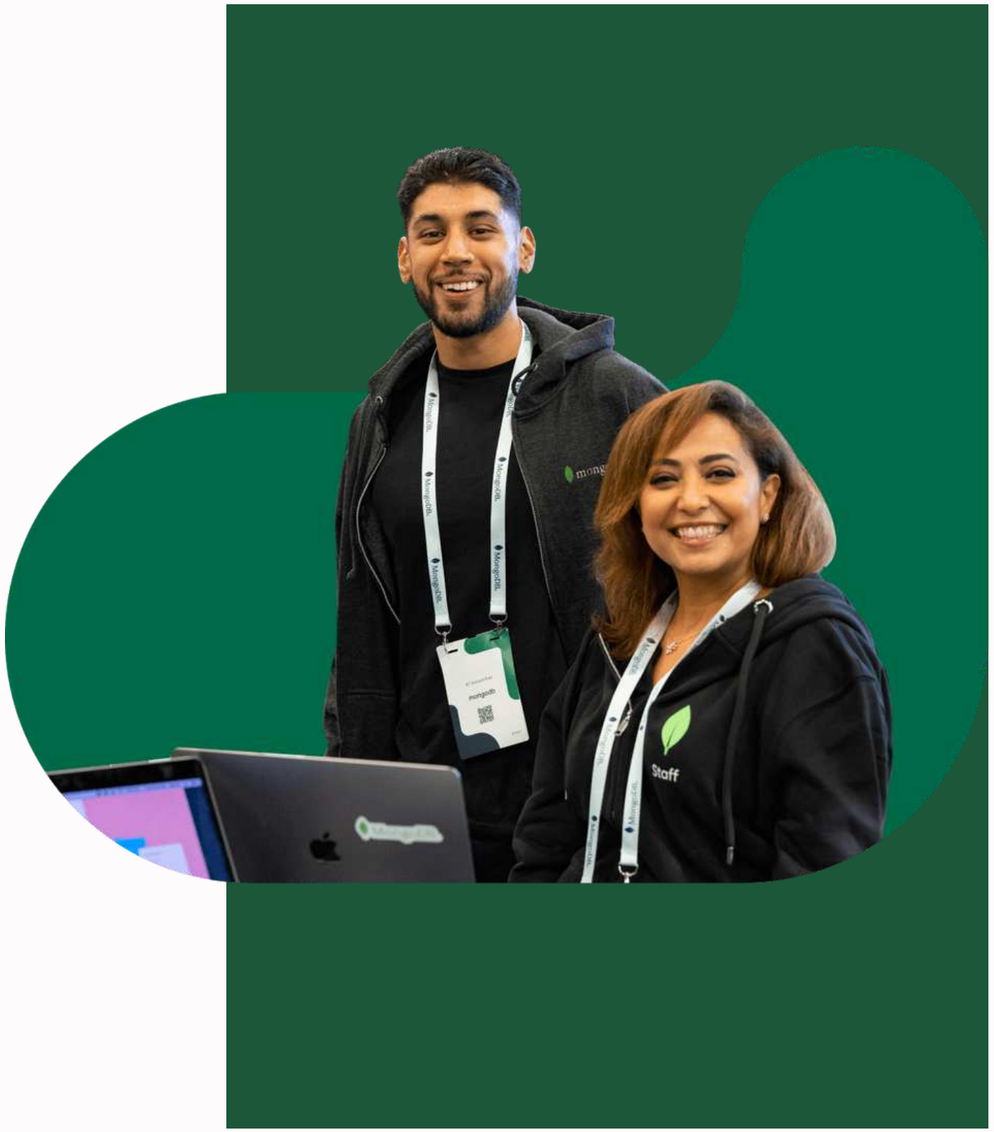
Brian Wen
EECS + Business
Project Manager

Aditya Jain
EECS + Business
Strategist

Hemal Kurani
BioE + Business
Strategist

Cheryl Wang
MechE + Business
Strategist

Content



LEARNING PATH IMPRESSIONS

Phase 1

Strengths

- Clear, concise, and easily understandable video content
- Summaries at the end of each course for effective recapping
- Option to retake quizzes for a strong grasp of material
- Progress tracking via completion side-bars encourages course completion
- Hands-on labs aid in applying covered material
- Video speed adjustments cater to individual learning preferences
- Interactive activities like matching games and pictures engage users

Weaknesses - Quizzes

Problems	Solutions
• No clear indication for wrong answers • Identical sequence of answer choices during quiz retakes fostering memorization • Low pass threshold (50%) questions hinders sufficient processing	• Implement clearer visual cues like color, larger font, or bolding for incorrect quiz answers • Shuffle answer choices during retakes • Suggest at least 4 questions with a 75% pass rate

Weaknesses - Labs

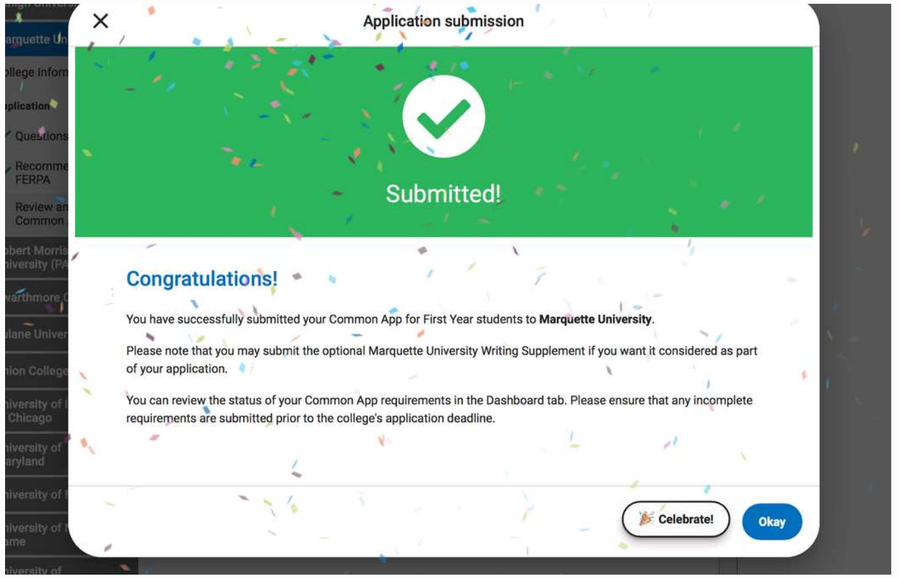
Problems	Solutions
• Lack of functionality to edit or rectify errors in the lab terminal • Difficulty in interacting with elements • Absence of detailed explanations for key concepts • Users leave the course website	• Editing capabilities in lab terminal • Implement design changes like underlining links and distinct colors • Comprehensive concept explanations • Incorporate the lab terminal into the online course with the videos

IMPROVEMENTS/ GAMIFICATION

Phase 1

01 Avatars for Personalization

- Create and personalize avatars linked to user accounts
- Adds a fun and individualized element to the learning journey
- Example: Khan Academy's evolving avatars based on earned 'energy points'

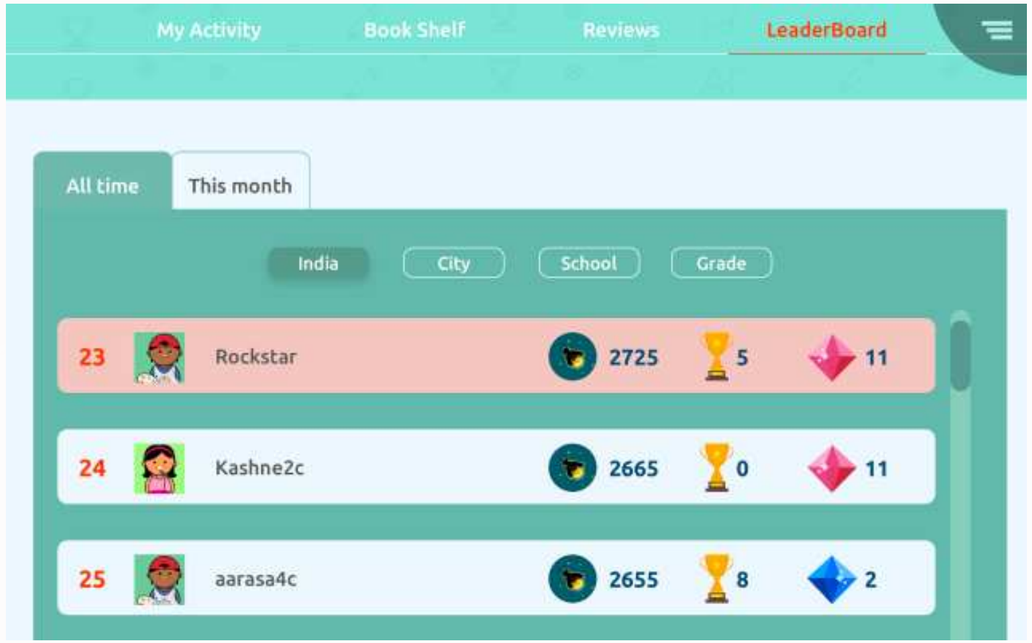


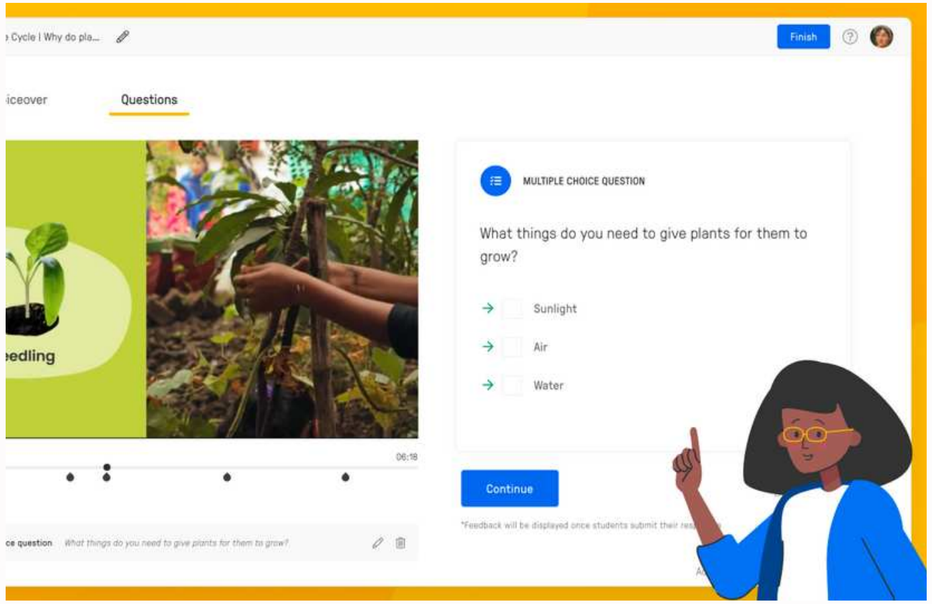
02 Incentive Systems

- Incorporate a rewards system to motivate users
- Award badges, points, or coins for quiz success and module completion
- Points serve as currency for unlocking additional features
- Example: Display confetti upon quiz completion as a direct reward

03 Leaderboard Competition

- Implement a leaderboard system for friendly competition
- Incentivize users to expand databases by earning more points or coins
- Encourage practical application of MongoDB skills

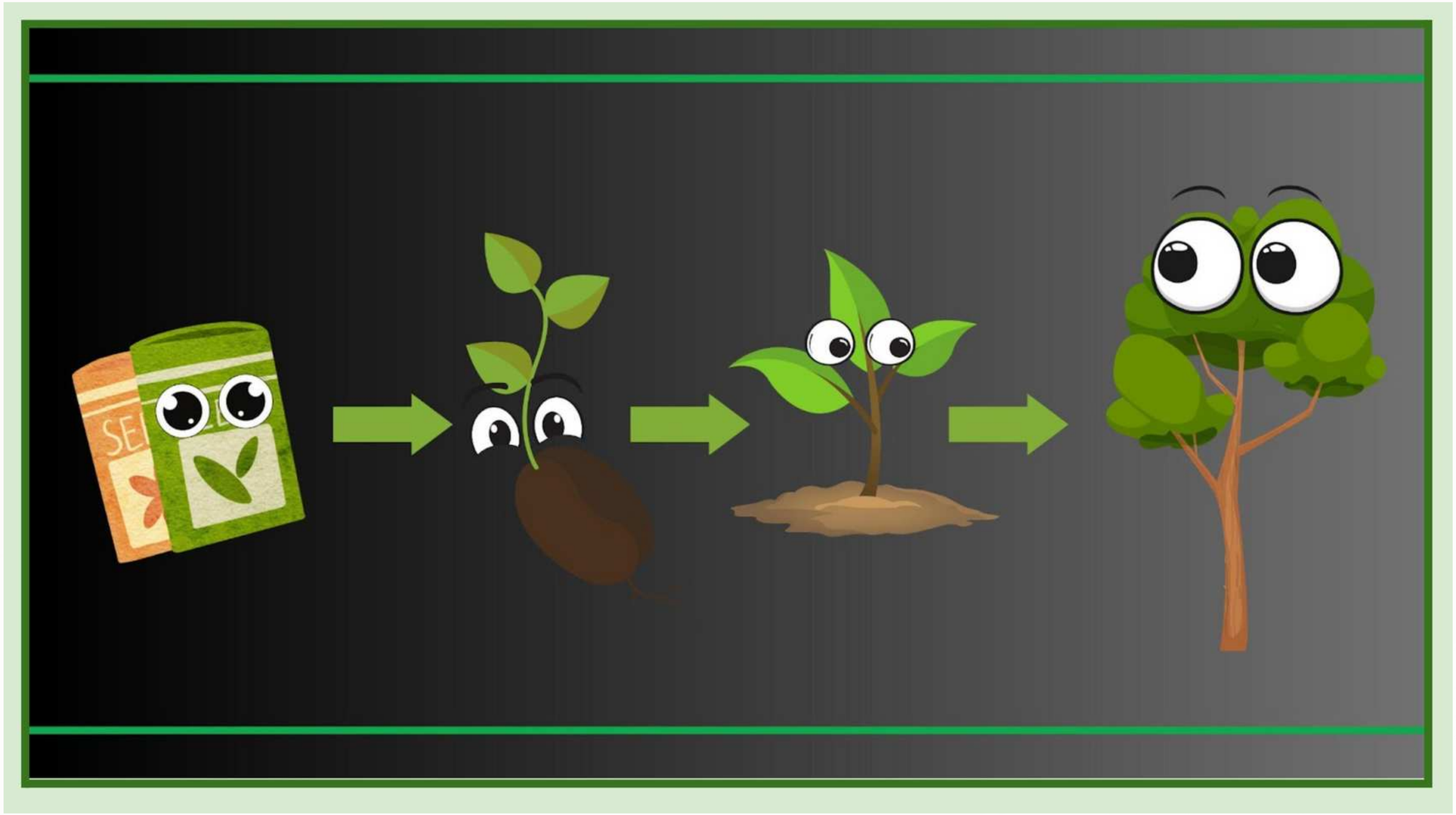




04 Integrating Quizzes and Videos

- Integrate quizzes within video content for active engagement
- Prevents users from bypassing quizzes, reinforcing real-time understanding
- Improves overall learning experience by making it enjoyable, interactive, and rewarding

MONGODB SPECIFIC IDEA



FINDINGS FROM FACULTY

Phase 2

Our Interviewees

Brandon Huang

Teaching Assistant

Data 100: Principles and Techniques of Data Science

Kevin Han

Teaching Assistant

CS 61A: The Structure and Interpretation of Computer Programs

Mahir Shah

Teaching Assistant

UGBA 88: Data and Decisions

Vibha Tantry

Head Teaching Assistant

CS 186. Introduction to Database Systems

Viraj Ramakrishnan

Teaching Assistant

CS 170. Efficient Algorithms and Intractable Problems

Impressions

- MongoDB's recognized flexibility
- Its adaptability across various applications
- Systematic approach to database management
- Efficient organization and management of collections standout as a strong suit

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- Limited applicability across most courses
- Exclusive control of curriculum development
- Skepticism about the impact of MongoDB-based assignments
- Challenges from inflexible curriculums & lack of use cases

INCORPORATING INTO ACADEMIA

Phase 2

01
Considerations

- Technology can effectively address the needs of the students
- Convenience and ease of use
- Scalable across all skill levels
- Run technologies independently
  - Ease of integration
  - “Plug and play” capabilities

02
Key Challenges

- Difficulty getting set up with the proper environment
- Lack of interactive support
- Students want to gain hands-on experience but can’t find it with some of the current curriculum
- Need updated online resources that actually apply to the content they are currently learning

ED-TECH TOOLS

Quizlet

- Integrate Quizlet-style flashcards for MongoDB courses
- Cover key concepts, query syntax, and best practices
- Active recall and repetition reinforce understanding
- Aid memory retention for practical application
- Self-quizzing solidifies grasp on MongoDB intricacies
- Fosters deeper comprehension, creating confident developers

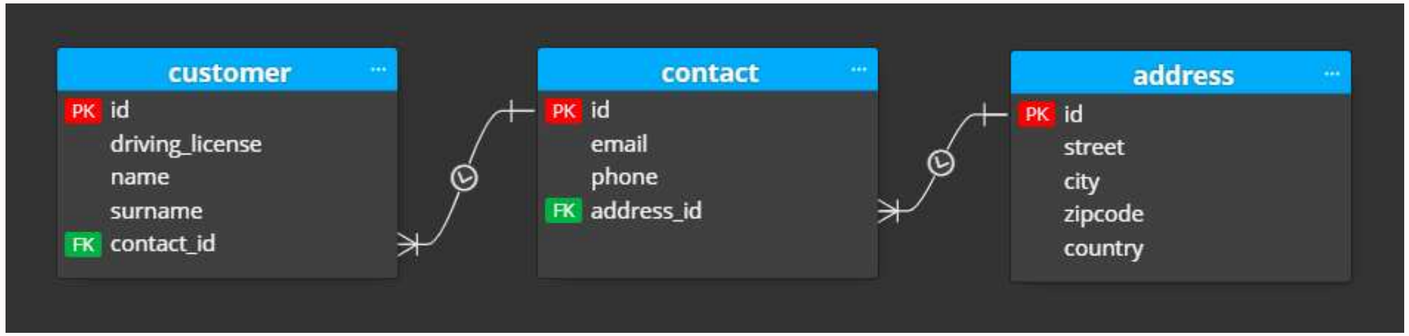
Ed-puzzle

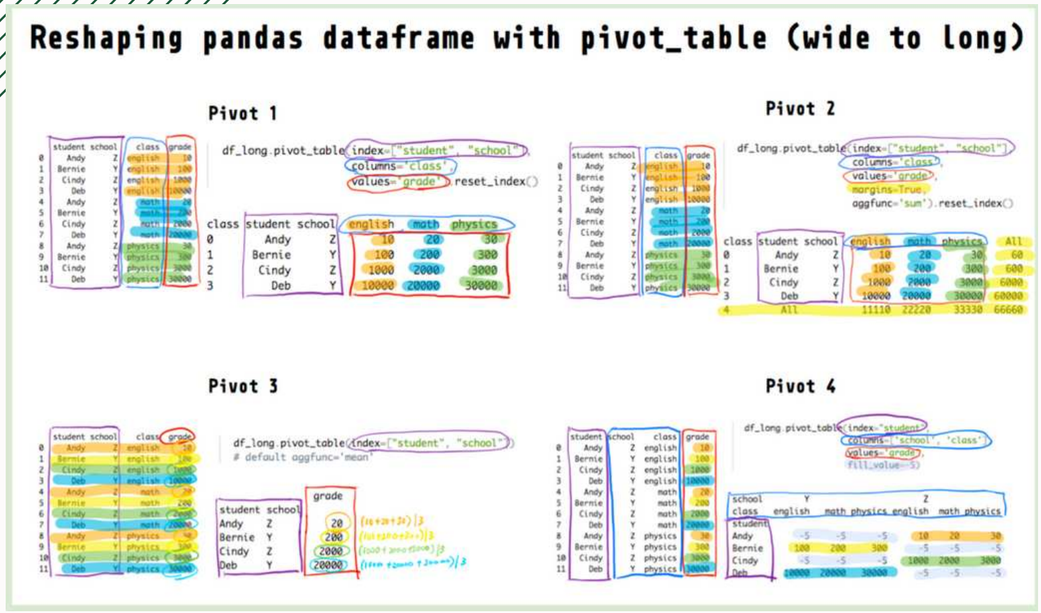
- Transforms passive viewing into active learning
- Video quizzes boost comprehension of complex concepts
- Tailored explanations improve understanding
- Interactive video features enhance the learning experience
- Instant feedback aids self-paced learning and boosts retention of the tested materials

Coursera

- Coursera elements like peer-reviewed assignments and discussion forums can enhance the learning experience
- Project-based and peer review assignments for real-world fosters collaborative learning
- Discussion forums would facilitate active engagement
- Students can seek help, share insights, and collectively deepen their understanding

Visualization





- Berkeley students currently use Pandas dataframe for rectangular data.
- Pandas dataframe is criticized for complexity and confusion in operation sequencing.
- MongoDB's clear and concise visualization feature could benefit students in handling data linkage more effectively.

01

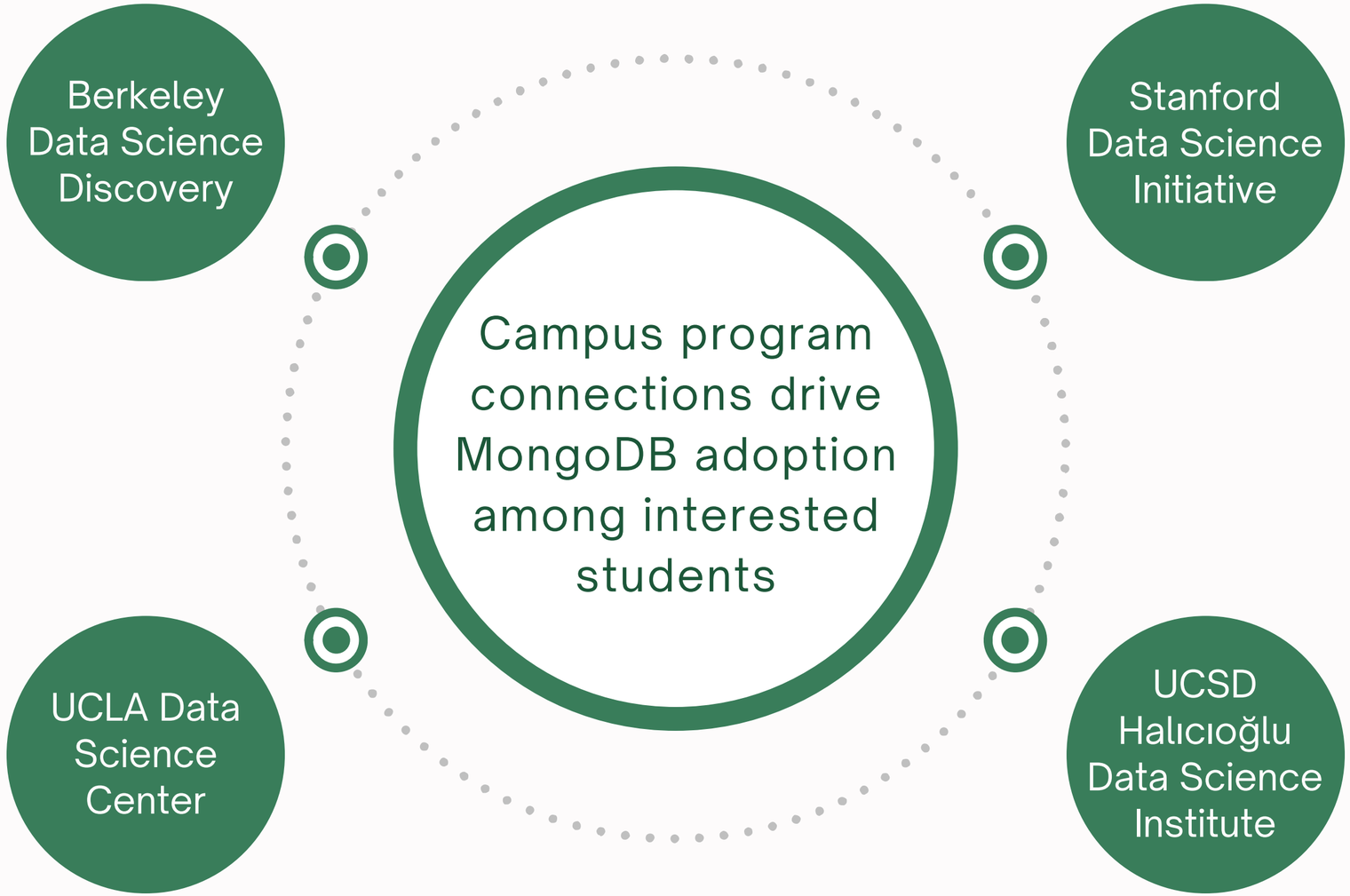
02

- Promote Atlas Charts for undergrad data visualization skills.
- Train TAs in workshops for seamless integration.
- TAs use surveys to identify student interests.
- Build a diverse Atlas Charts database based on feedback.

Research

Incorporating MongoDB into academic research

- Target prominent publications for MongoDB coverage
- Encourage professors' MongoDB research use for academic course integration
- Engage universities in using MongoDB for data analysis in academia



STUDENT OVERALL IMPRESSIONS

Phase 3

On a scale of 1-10, how difficult was it to start learning the program? (If you HAVE completed a MongoDB learning path, please skip otherwise)

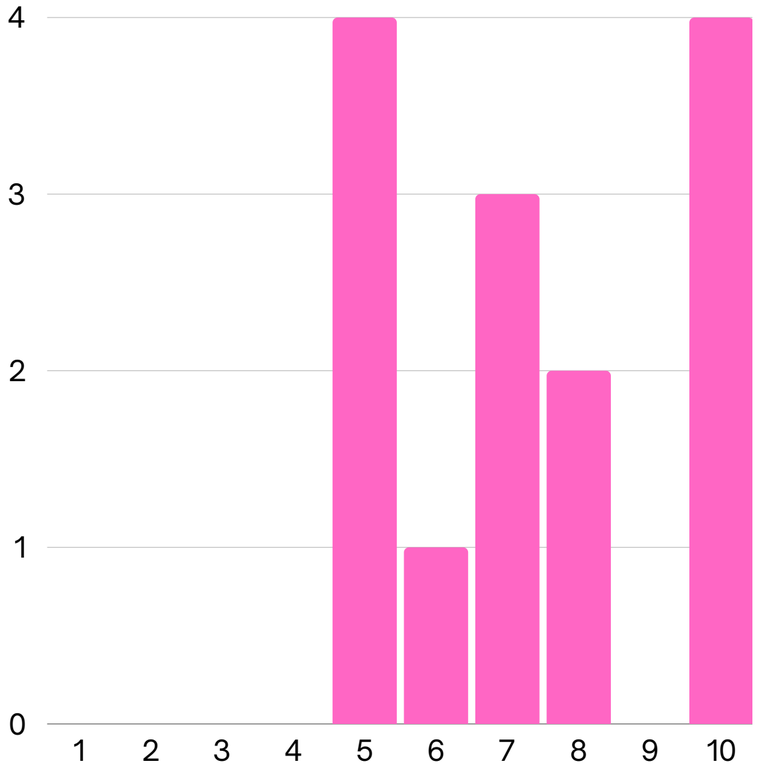


Figure 1

How inclined would you be to complete a MongoDB learning path if you received a free certification exam upon completion?

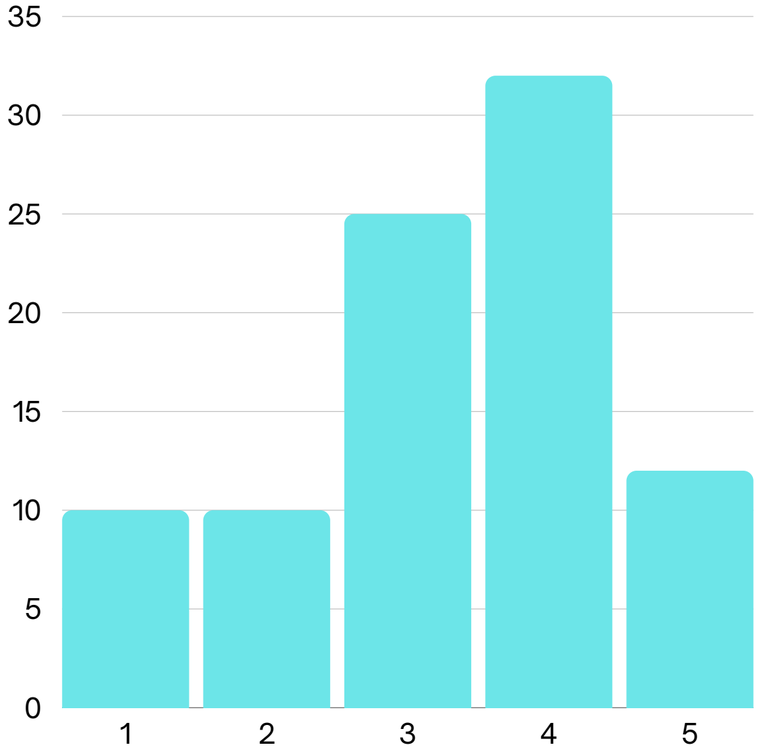


Figure 2

How likely would you be to use Atlas if provided $50 in free credits?

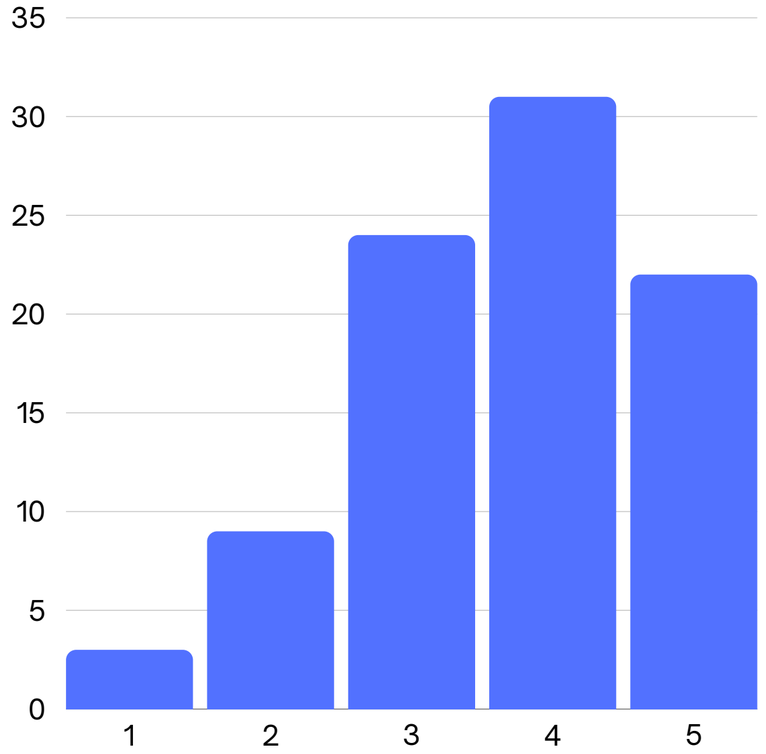


Figure 3

If an expert from a tech field would come and do a lecture, would you be inclined to attend?

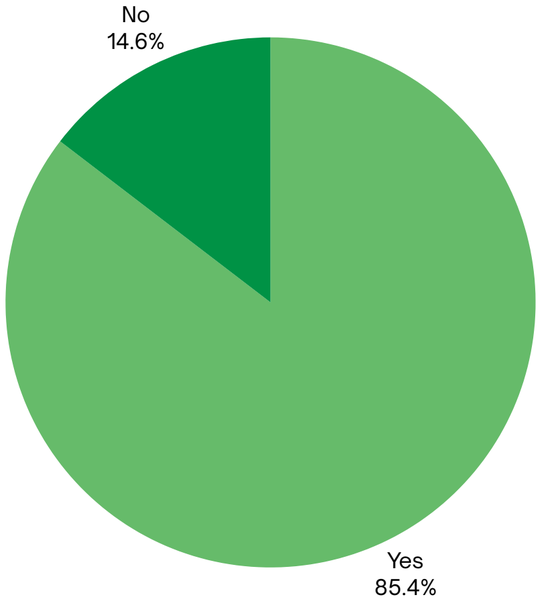


Figure 4

If you've been exposed to a company's software products through a hackathon, competition, workshop or prize, how inclined are you to continue developing with these products?

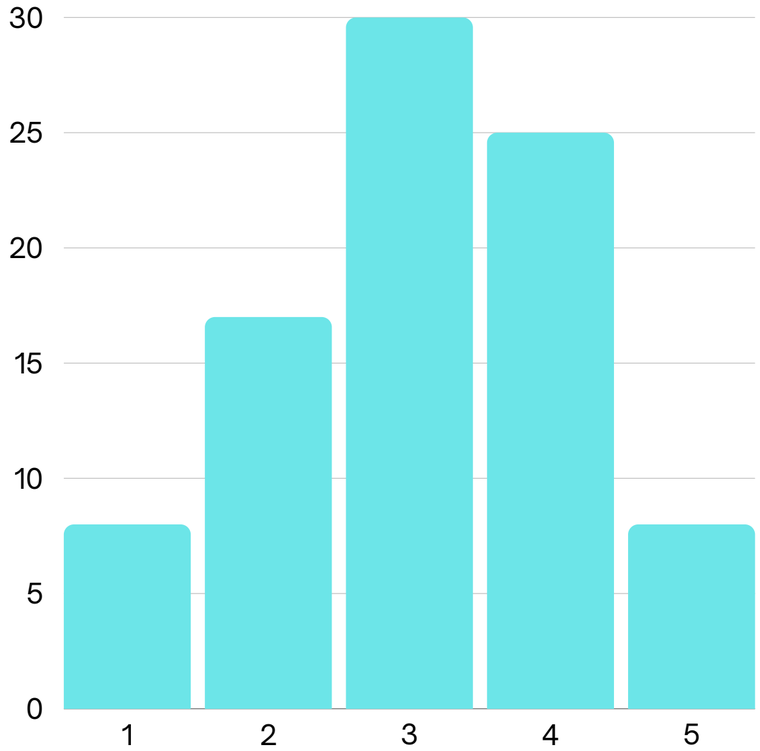


Figure 5

To what extent would a social/environmental responsibility initiative, such as sponsoring the planting of a tree, motivate you to participate in using an educational platform?

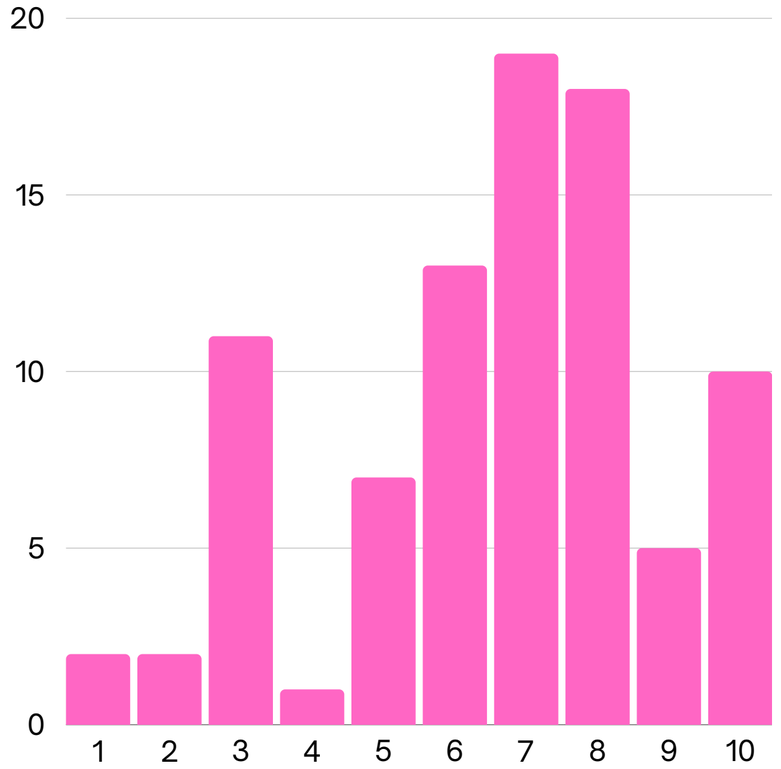


Figure 6

Incentives

How much more students are incentivized by a mentorship program

Which of the following would incentivize you to complete an online learning program?
(1 - Not Likely, 5 - Very Likely)

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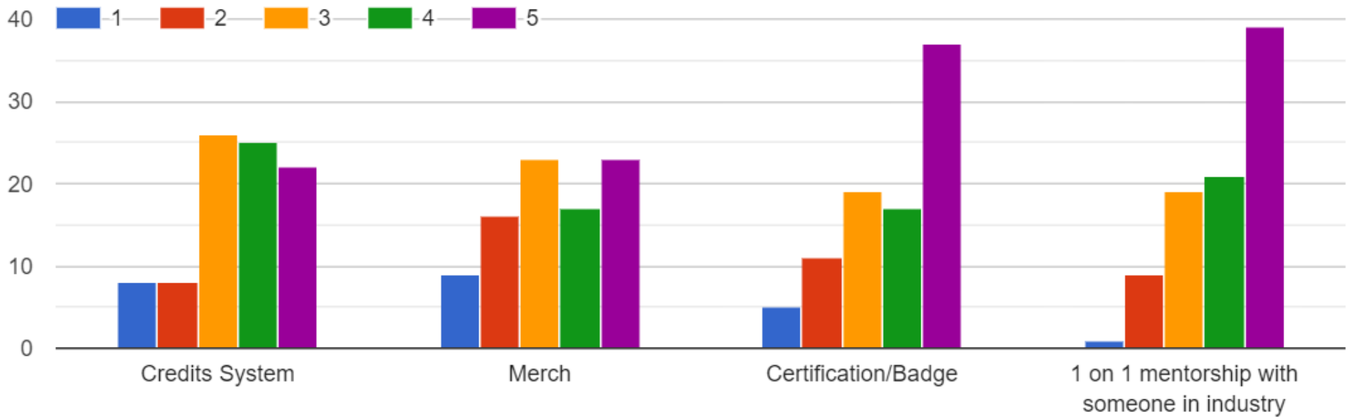


Student Thoughts

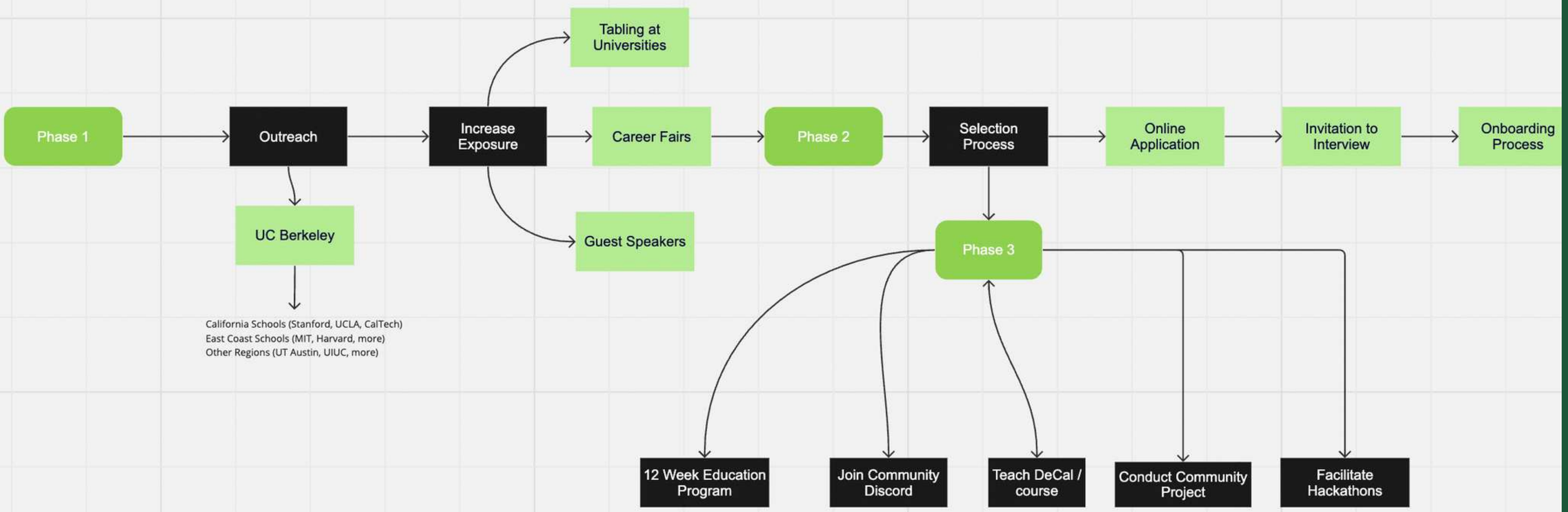
If you were taking an online course on a new technology, what other student benefits would you want to see?

- “Opportunities to learn more in the field.”
- “Networking.”
- “Internship opportunities or chances to meet representatives in the company.”
- “1 on 1 time to learn.”
- “Legitimate networking opportunities and job fairs.”
- “Community forums and networking or other types of career services that could help answer student questions on industry or future career paths (and connect them with industry professionals who have that experience).”

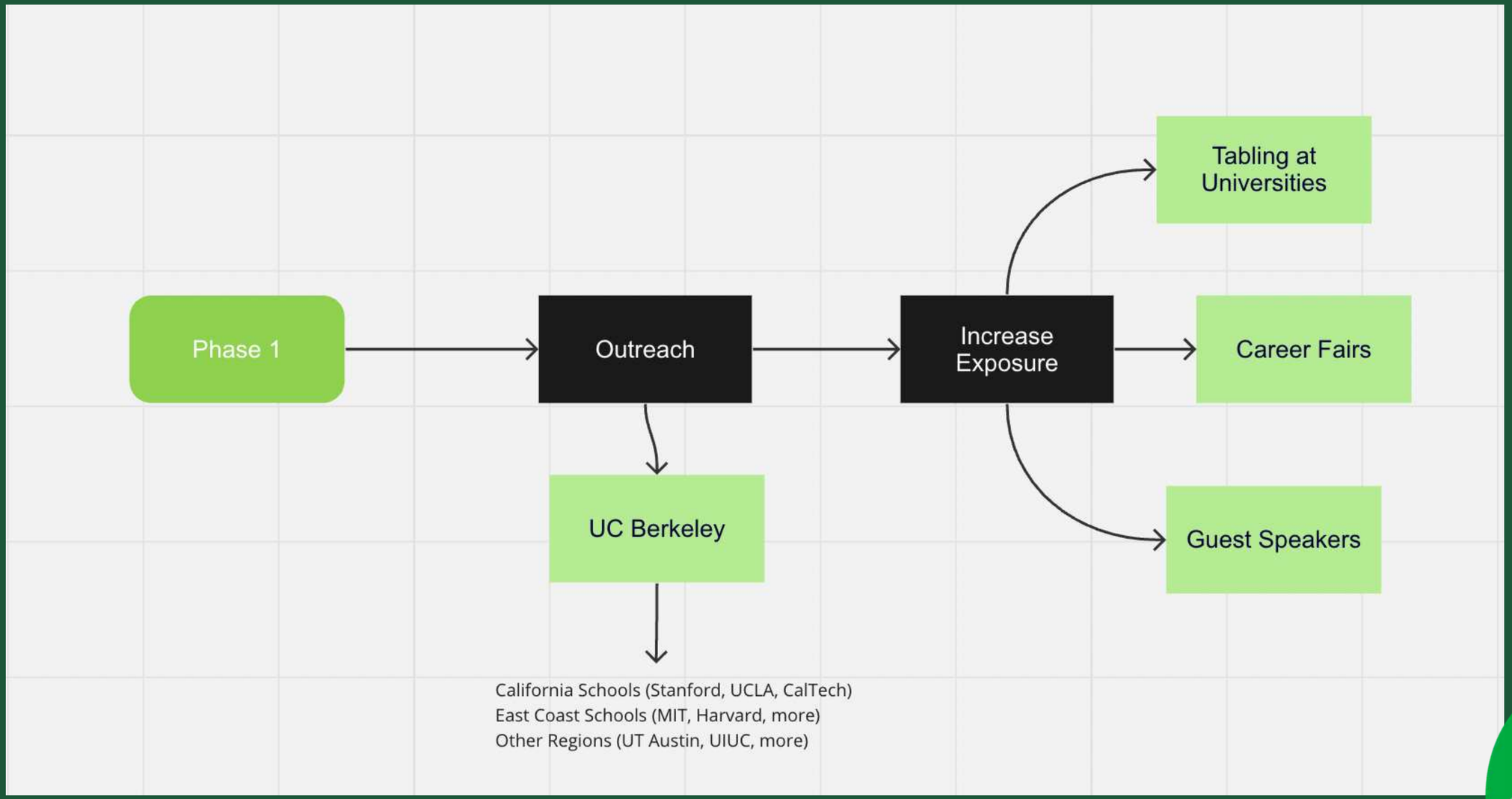
FINAL RECOMMENDATION

Phase 3

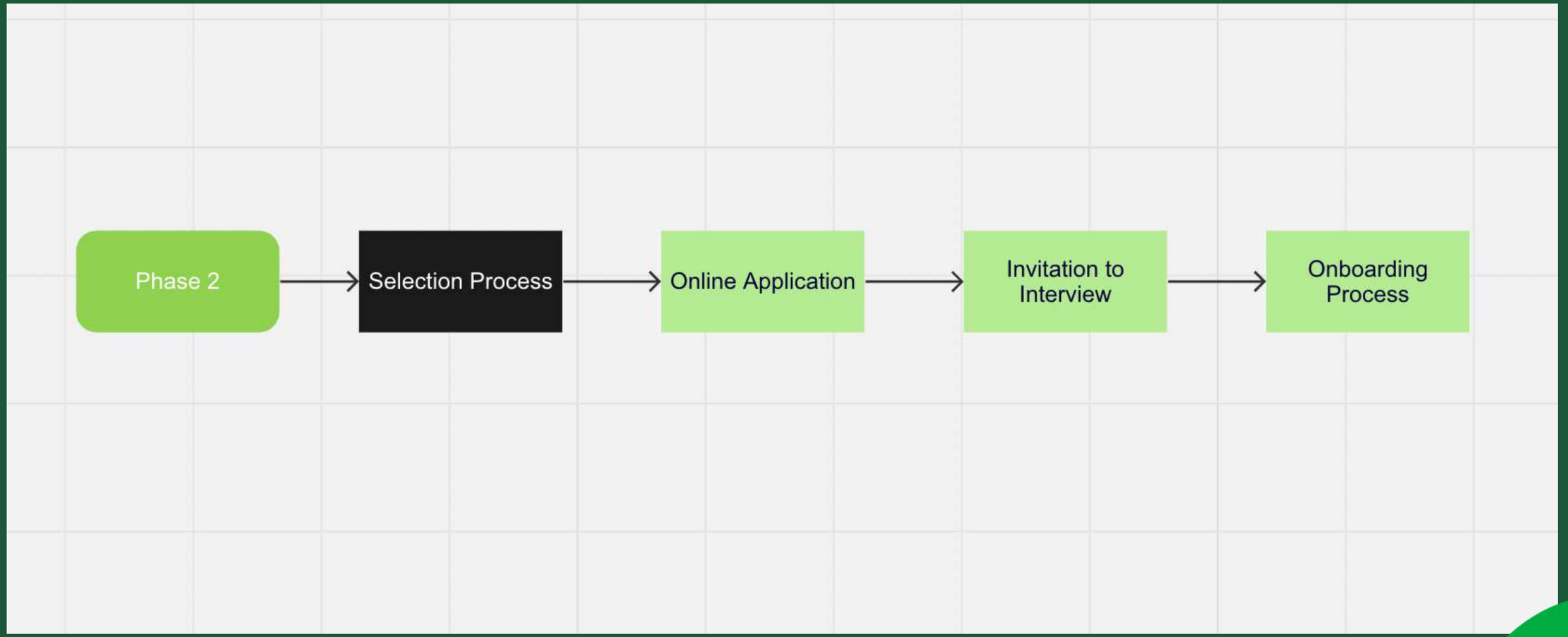
Process Overview



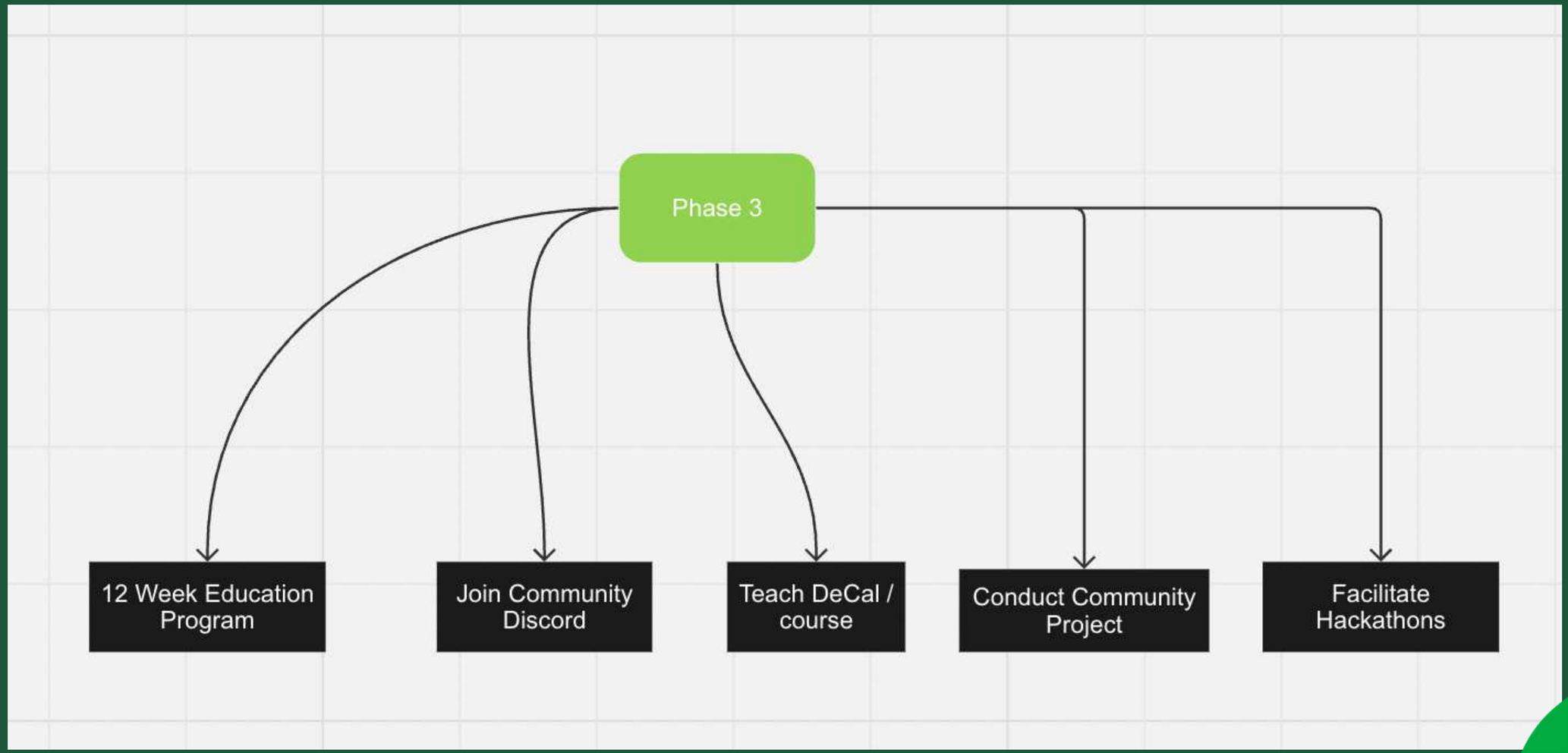
Phase 1


Phase 1
Outreach
Increase Exposure
Tabling at Universities
Career Fairs
Guest Speakers
UC Berkeley
California Schools (Stanford, UCLA, CalTech)
East Coast Schools (MIT, Harvard, more)
Other Regions (UT Austin, UIUC, more)

Phase 2


Phase 2
Selection Process
Online Application
Invitation to Interview
Onboarding Process

Phase 3


Phase 3
12 Week Education Program
Join Community Discord
Teach DeCal / course
Conduct Community Project
Facilitate Hackathons

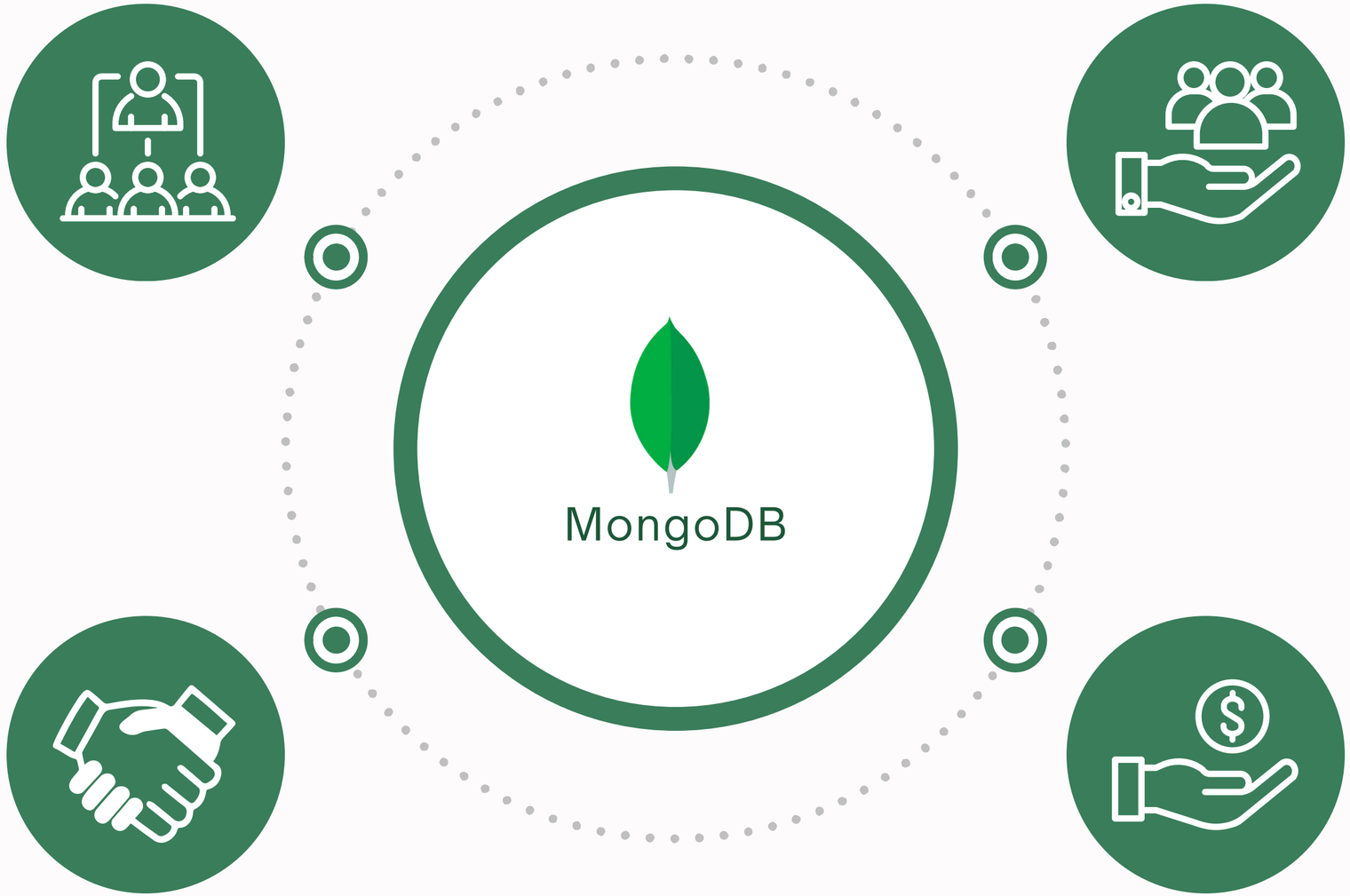
Mentorship Program

Student Mentors

Campus Advocacy

Greater Use Cases

Redirected Financial Focus



QUESTIONS?

M.E.T. Strategy Group