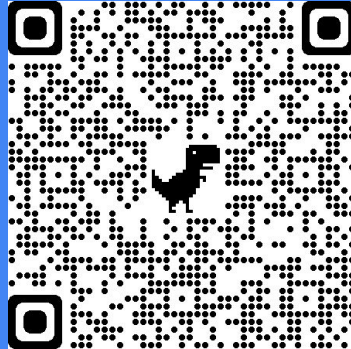


# ACM-CSIP Summer 2021

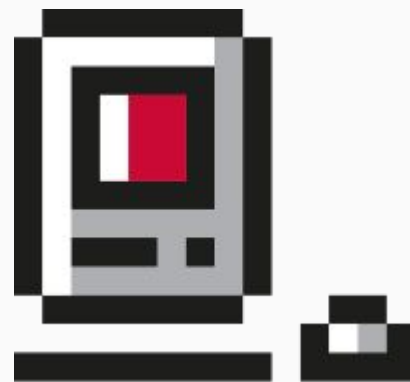
Meeting 7! Check-in pls: <https://forms.gle/7K3XAruFXoxFir7w9>



# Welcome!

- Itinerary

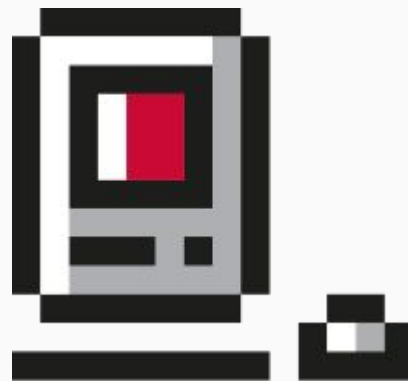
- Introduction
- Polls
- System Design
- Approach
- Challenges
- Resources



# Introduction

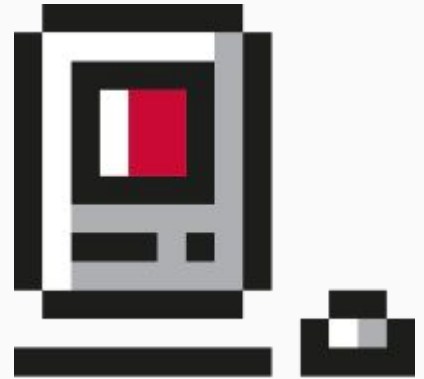
# Introduction

- Computer Science Interview Prep (CSIP)
- Meeting Tuesdays @ 7PM, ACM Discord
- Focused on professional, personal, and technical development
- Will be focused on both behavioral and technical interviews



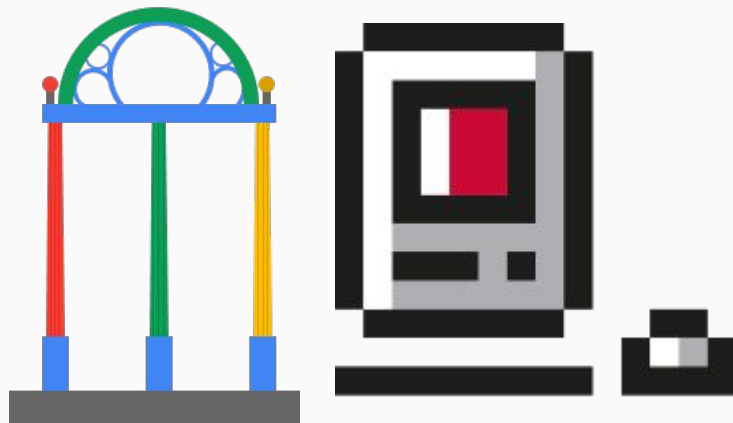
# Career Fair

- UGA Part-Time Career & Internship Fair: August 25th!
  - 11:00 am until 2:30 pm
  - Athens area employers off-campus and on-campus
  - Business Casual | Tate Grand Hall



# GDG Athens

- GDG Athens Meeting 2!
- Google Developer Group for local technologists
- Wed, Jul 28, 3:00 PM (EDT)
  - In-person: Studio 225
  - Virtual: RSVP for link!
- [gdg.community.dev/gdg-athens-1](https://gdg.community.dev/gdg-athens-1)



# Meeting Platforms

# GitHub

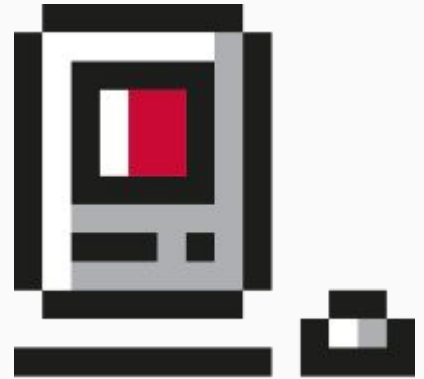
- [github.com/csip-uga](https://github.com/csip-uga)
- see archive -> README.md to share your solutions!



The image shows the header section of a GitHub profile for 'CSIP @ UGA'. On the left is a pixelated avatar of a computer monitor with a red square on the screen. To the right of the avatar, the text 'CSIP @ UGA' is displayed in a bold, black, sans-serif font. Below this, in a smaller font, is the description 'Computer Science Interview Prep at the University of Georgia'. Further down, there is a location pin icon followed by 'Athens, GA' and a link icon followed by the URL 'http://csip-uga.github.io'. At the bottom of the header is a navigation bar with several items: 'Repositories' with a count of '3', 'Packages', 'People' with a count of '22', 'Teams', 'Projects', and 'Settings'. Each item has a small icon to its left.

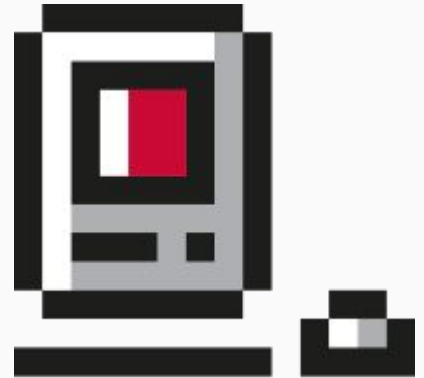
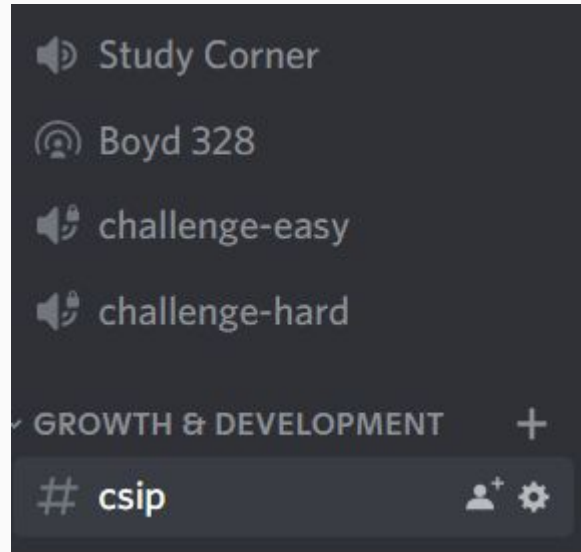
 **CSIP @ UGA**  
Computer Science Interview Prep at the University of Georgia  
📍 Athens, GA 🔗 <http://csip-uga.github.io>

📁 Repositories 3 📦 Packages 👤 People 22 👥 Teams 📁 Projects ⚙️ Settings





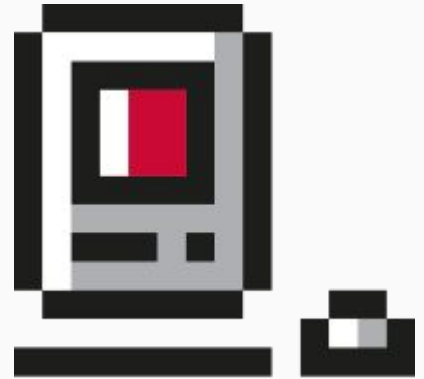
# Discord



# Polls

# Polls

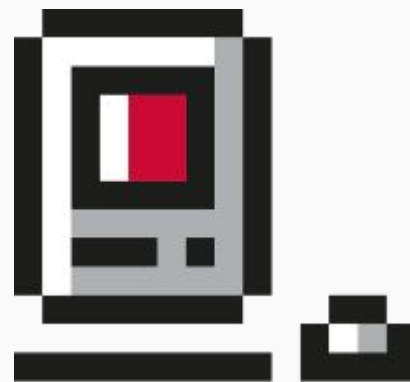
- See check-in form
- How would you design a CSIP meeting for ...
  - 10 attendees?
  - 100 attendees?
  - 1000 attendees?



# System Design

# System Design

- CSCI4760: Computer Networks | CSCI1730: Systems Programming
- Consider how your programs scale in terms of users, not code
- Is authorization needed? Is 100% accuracy important (finance)?



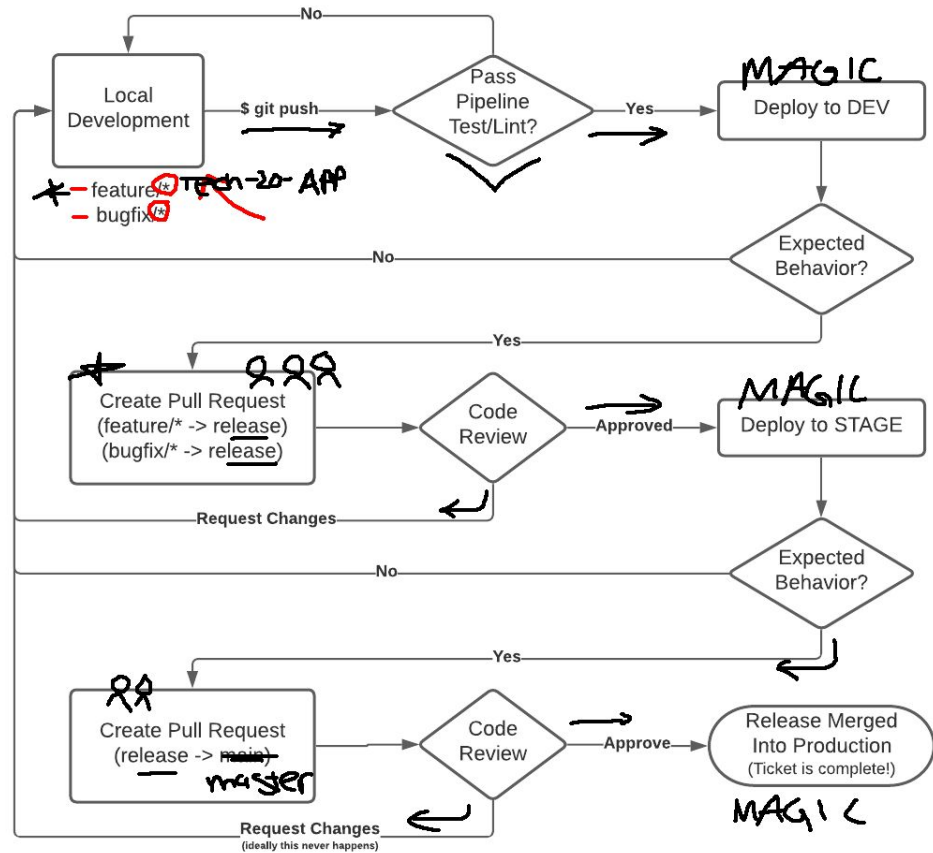




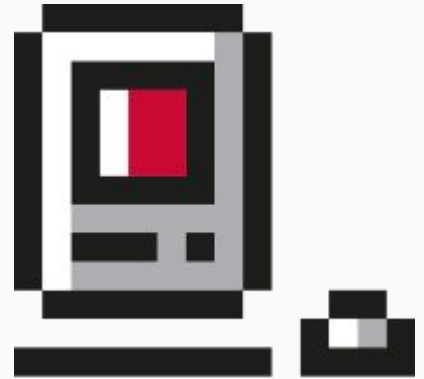
Fig 1: backend development crying to support frontend development

# Key Concepts



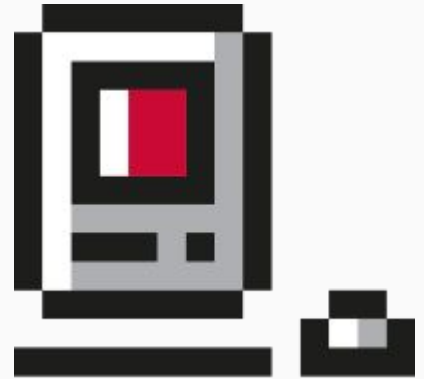
# Whiteboard

- Use UML diagrams to express concepts and relationships!
- Acknowledge concerns and proposals
- Reach a Minimum Viable Product (MVP)
- Make estimates (as reasonably as you can)



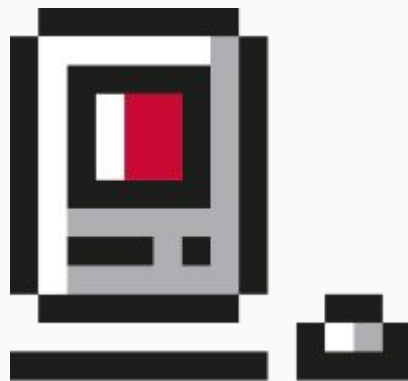
# Scope

- Identify each step of the process
- Imagine the user's workflow
- What does the user has control over?
- What does the system need to work? When?



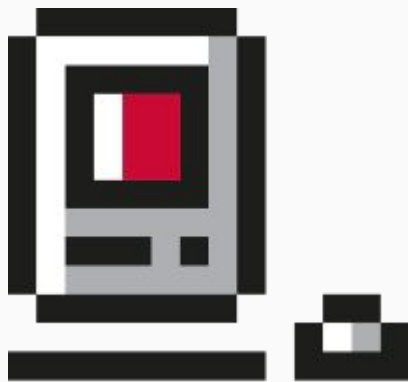
# Key Issues

- How does the system scale? When?
- Where is the system weak?
- Where is there wasted space?
- What can't the system do?
- What shouldn't the system do?



# Terms

- Horizontal scaling: number of nodes
- Vertical scaling: resources per node
- Load balancing: distribute load across nodes
- Caching: store expensive requests
- Partitioning: vertical, key/hash, directory
- Asynchronous/lazy loading: avoid requests until needed
- Bandwidth & throughput: traffic network can support
- Latency: lag the user experience

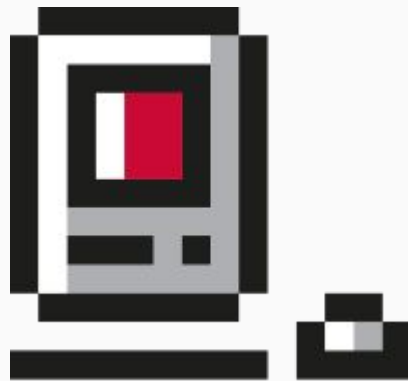




# Featured Challenges

# How would you design...

- [github.com/csip-uga/archive/tree/master/2021-07-27](https://github.com/csip-uga/archive/tree/master/2021-07-27)
- Linktree?
- University class registration?
- A syllabus parser?
- Elevator pitch generator?
- See GitHub Archive!



# Conclusion



## COMPUTER SCIENCE INTERVIEW PREP (CSIP)

### Summer 2021

UGA ACM is proud to present Computer Science Interview Prep! CSIP provides a platform to practice for technical and behavioral interviews. Summer sessions will be hosted virtually, and resume in-person meetings in September. We hope to see you! All experience levels welcome.

**6/15:** Types of Interviews, Tools, & FizzBuzz

**6/22:** Whiteboarding & Design

**6/29:** Online Assessments & Debugging

**7/6:** Python & String Manipulation

**7/13:** Big O

**7/20:** Logic Puzzles

**7/27:** Scalability

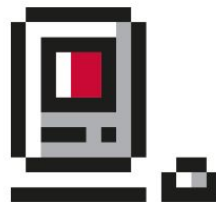
**8/3:** Elevator Pitch & Critique

**8/19:** ACM General Body Meeting #1

**8/25:** Fall Part-time Career & Internship Fair

### Tuesdays @ 7PM on the ACM Discord!

Scan the QR code, create an account, and join us in #csip and the Study Corner Voice channel



[github.com/csip-uga](https://github.com/csip-uga)

# Questions?

- Find ACM on:
  - [CS GroupMe](#)
  - [GitHub](#)
  - [LinkedIn](#)
  - [Instagram](#)
  - [Discord](#)
  - [Calendar](#)
- Feel free to message me!
  - [jeffery.john@uga.edu](mailto:jeffery.john@uga.edu) | [ugaacm@uga.edu](mailto:ugaacm@uga.edu)
  - [linkedin.com/in/jefferyjohn](https://linkedin.com/in/jefferyjohn)

