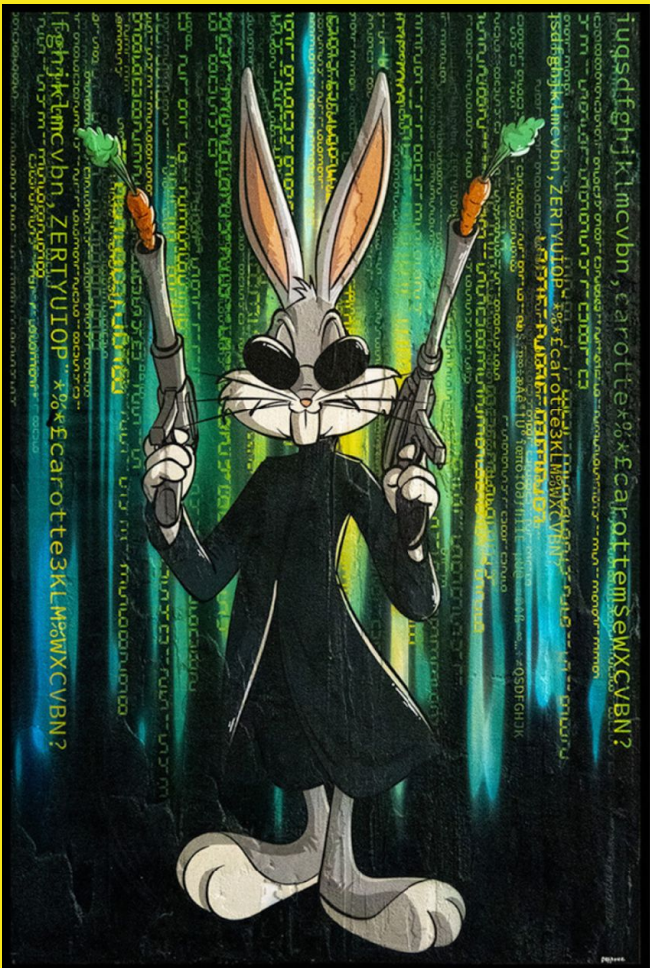# Team 5 : Bugs Bunny

Less is More!

Feed Amalgamator

Team 5 : Bugs Bunny

Bug Driven Development!

Feed Amalgamator

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- ❏ Project Outline
- ❏ Process
- ❏ Architecture
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  - ❏ Monitoring
- ❏ Lessons Learnt

Project Outline:

Bugs Bunny cannot change the Federated nature of the Fediverse, and the need to create several accounts to follow feeds from unfederated servers .

But we can try to make interacting with several accounts easier!

Feed Amalgamator

Our product:

An application that amalgamates feeds from different Mastodon accounts on different servers.

Features:
- Create account with amalgamator.
- Add / Delete Mastodon account feed to amalgamator.
- View amalgamated feed.

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Process

- Kanban approach ↠ Decision in adherence with overall team experience level
- Scrum element ↠ Meetings bi-weekly on a regular basis
- Visualization of work items in Kanban Board
- Kanban Board ↠ Central Tool to visualize work and workflows
- Work items ↠ represented as cards in the Kanban Board
- Benefits of Kanban
  - Flexibility in planning
  - Shorter cycle times for tasks
  - Fewer bottlenecks in process
  - Use of visual metrics for continuous improvement

https://github.com/orgs/CSE210-Team-5/projects/1/views/1

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Architecture

Each module has a clearly defined role
(separation of concerns)

Flask Backend ℰ Flask

Mastodon API
Connection Layer

LOG

Centralized Logging
Module

Database-communication-
module

If any module wants to get
data from the DB, they need to
do so through this layer
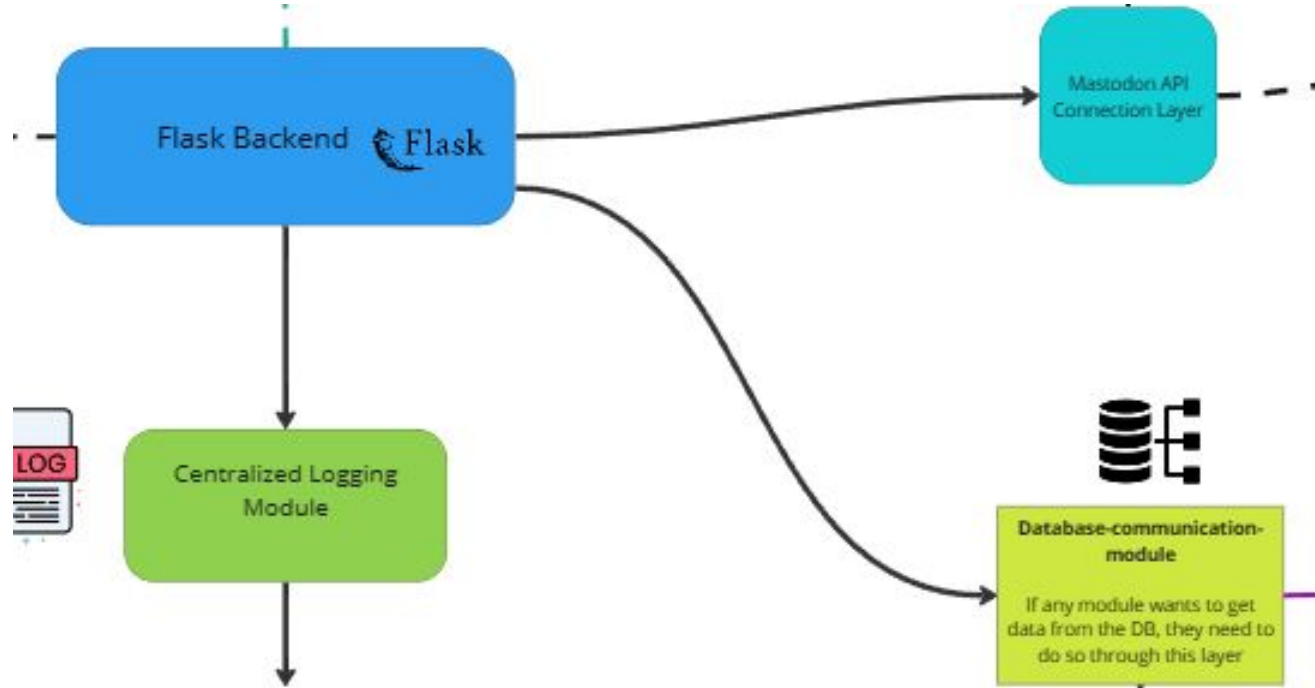
Architecture

Site is split into 3 main pages:

Responsible for rendering pages and handling interactions from the user

Feed Amalgamator

Log In

Username

Password

Log In

about page (/about)
Responsible for providing users
with a short guide of how to use
the app

- /about
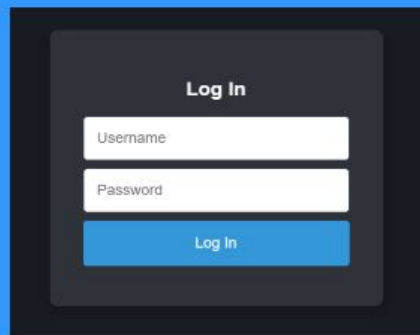
auth page (/auth)
Responsible for handling user
registration and login

- /register
-/login
-/logout

feed page (/feed)
Responsible for displaying the
amalgamated feed to users and
adding/deleting servers via the
settings menu

-/home
-/add_server
-/delete_server
-/handle_oauth

Architecture

Interfaces such as the database later and the Mastodon API layer make the application more modular

Architecture - ER Diagram
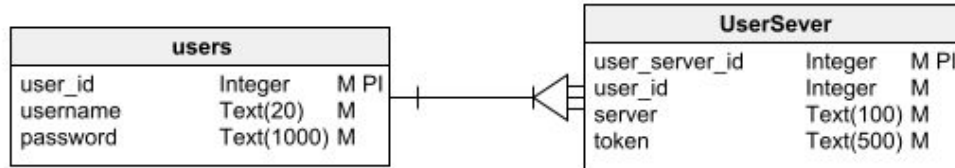
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Flow Diagram

```
┌──────────┐                      ┌──────────┐
│ Register │                      │  Log in  │
└────┬─────┘                      └────┬─────┘
     │                                 │
     ▼                                 ▼
  ╱────────╲                        ╱──────────╲              ┌──────┐            ╱──────────╲
 ╱ User      ╲                     ╱   Valid     ╲    Yes     │ Feed │  ────────▶ ╱ Any servers ╲  ────No────┐
╱  already     ╲                  ╱ Credentials?  ╲ ─────────▶└──────┘            ╲   exist?    ╱            │
╲   exists?    ╱                  ╲               ╱                                ╲           ╱             │
 ╲            ╱                     ╲            ╱                                   ╲  Yes    ╱              │
  ╲────────╱                         ╲─────────╱                                     ╲───┬───╱               │
      │                                  │                                              │                   │
 Yes  │                              No  │                                         Yes  ▼                   ▼
      │                                  │                                  ┌────────────────┐      ┌──────────────┐
      ▼                                  ▼                                  │ Fetch OAuth    │      │ Throw exception │
┌──────────────┐                  ┌──────────────┐                         │ token for      │      │ and display error│
│ Throw exception│                │ Throw exception│                       │ servers added  │      └──────────────┘
│ and display    │                │ and display    │                       │ by the user    │
│ error          │                │ error          │                       └───────┬────────┘
└──────────────┘                  └──────────────┘                                 │
                                                                                    ▼
                                                                           ┌────────────────┐
                                                                           │ Use OAuth token│
                                                                           │ to fetch the   │
                                                                           │ user's feed    │
                                                                           │ from all added │
                                                                           │ servers        │
                                                                           └───────┬────────┘
                                                                                    │
                                                                                    ▼
                                                                           ┌────────────────┐
                                                                           │ Sort posts     │
                                                                           │ based on       │
                                                                           │ popularity and │
                                                                           │ amalgamate     │
                                                                           └────────────────┘
```
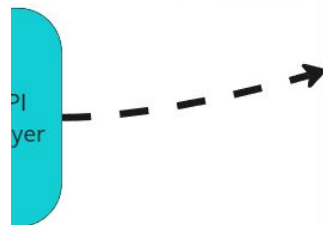
```
                 ┌────────────┐                                                                          ┌──────────────┐
                 │ Add server │                                                                          │ Delete server│
                 └─────┬──────┘                                                                          └──────┬───────┘
                       │                                                                                        │
                       ▼                                                                                        ▼
          ╱──────────────╲          ┌──────────────┐      ┌──────────────┐                              ┌──────────────┐
   No    ╱  Valid domain? ╲   Yes   │ Get Client ID│      │ Write Client │                              │ Get list of  │
  ┌─────╱                  ╲───────▶│ and Client   │─────▶│ ID and Client│                              │ servers to be│
  │     ╲                  ╱        │ Secret for   │      │ Secret to DB │                              │ deleted      │
  │      ╲────────────────╱         │ the domain   │      └──────┬───────┘                              └──────┬───────┘
  │            │                    └──────────────┘             │                                             │
  ▼        Yes │                          No                     ▼                                             ▼
┌──────────────┐│                    ╱──────────────╲         ╱──────╲                              ┌──────────────┐
│ Throw        ││                   ╱ Is Client ID   ╲        │  DB  │                              │ Delete from  │
│ exception    ││                  ╱  and Client      ╲       ╲──────╱                              │ DB           │
│ and display  ││                 ╱   Secret          ╲          │                                 └──────┬───────┘
│ error        ││  ◀──────────────╲ of domain already ╱ ─Yes─▶┌──────────────┐                            │
└──────────────┘│                  ╲ present in the  ╱        │ Read Client  │ ◀──┘                        ▼
                │                    ╲ database?     ╱         │ ID and Client│                         ╱──────╲
                │                     ╲────────────╱           │ Secret from  │                         │  DB  │
                │                                              │ DB           │                         ╲──────╱
                │                                              └──────────────┘
```

```
┌──────────────┐                  ╱──────────────╲                                ┌────────────────────┐
│ Throw        │        No       ╱ Valid          ╲                               │ Redirect to        │ ◀──
│ exception    │  ◀──────────────╱ response from   ╲ ◀─────────────────────────── │ Mastodon           │
│ and display  │                 ╲ Mastodon?      ╱                               │ Authentication UI  │ ◀──
│ error        │                  ╲──────────────╱                                └────────────────────┘
└──────────────┘                        │
                                    Yes │
                                        ▼
                    ┌────────────┐   ╱────────╲        ┌──────────────┐       ┌────────────┐   ╱──────────╲
                    │ Mastodon   │  ╱  User     ╲ Yes  │ Check if     │ Yes   │ Obtain     │  ╱ Is the      ╲   No
                    │ prompts    │ ╱   Clicks    ╲────▶│ OAuth token  │──────▶│ access     │─▶╱ access       ╲──────┐
                    │ user to    │▶╲ Authorize?  ╱     │ is valid     │       │ Token      │  ╲ token already╱      │
                    │ authorize/ │  ╲           ╱      └──────┬───────┘       └────────────┘   ╲ present?    ╱      ▼
                    │ deny       │   ╲─────────╱             │                                   ╲──────────╱  ┌──────────────┐
                    │ request    │        │              No  │                               Yes │          │ Write obtained│
                    └────────────┘     No │                  ▼                                    ▼          │ Access token  │
                                          ▼            ┌──────────────┐            ┌──────────────────┐      │ to DB         │
                                   ┌──────────────┐    │ Throw        │            │ Throw exception  │      └──────┬───────┘
                                   │ Throw        │    │ exception    │            │ and display error│             │
                                   │ exception    │    │ and display  │            │ (Access token for│             ▼
                                   │ and display  │    │ error        │            │ server-user      │          ╱──────╲
                                   │ error        │    └──────────────┘            │ combination      │          │  DB  │
                                   └──────────────┘                                │ already exists)  │          ╲──────╱
                                                                                   └──────────────────┘
```
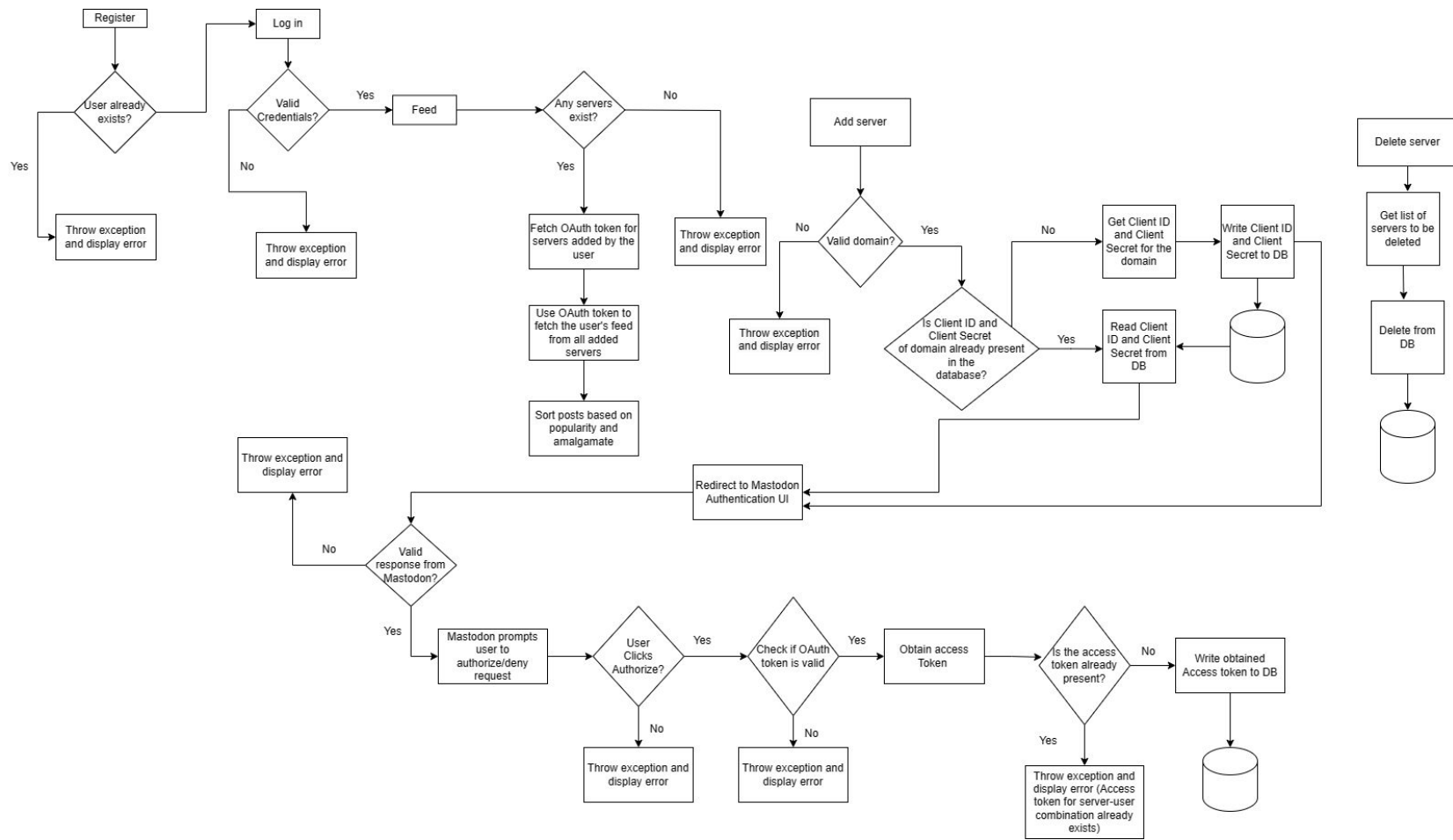
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Systems - CI / CD Flow
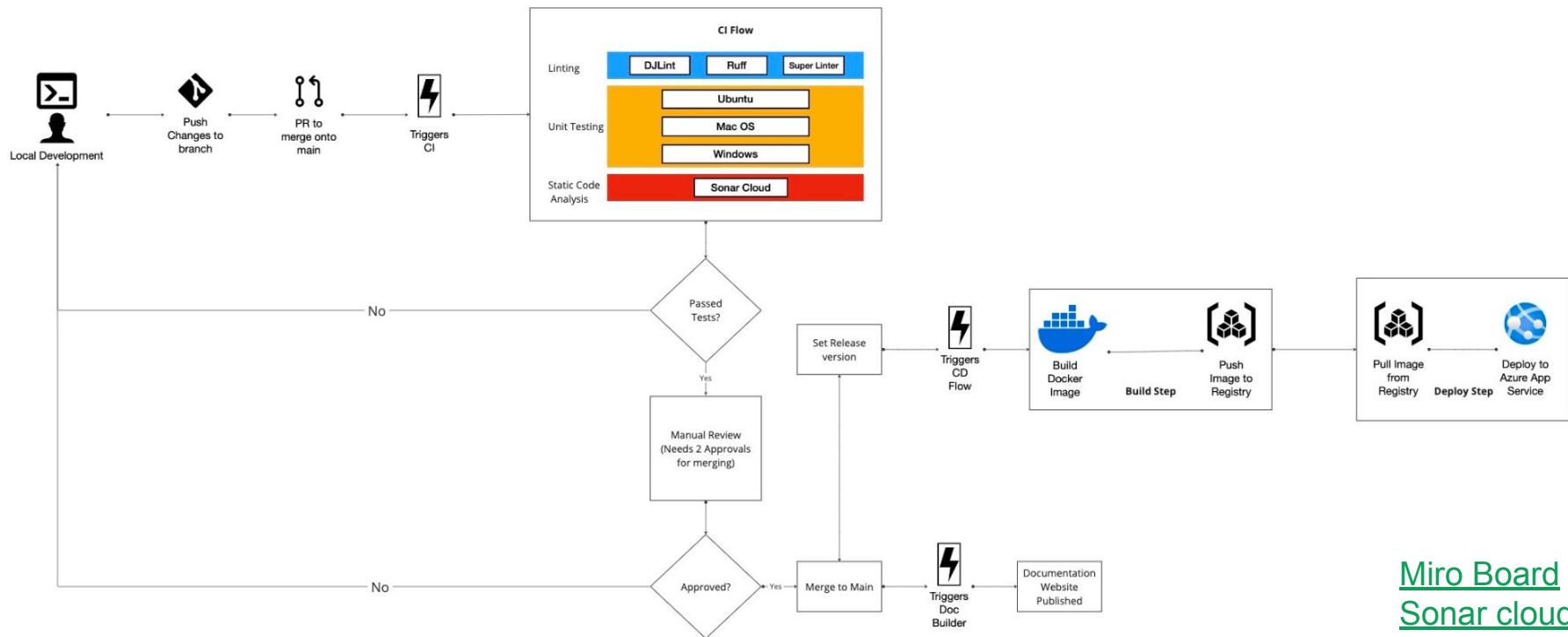
CI Flow

Linting	DJLint	Ruff	Super Linter
Unit Testing	Ubuntu		
	Mac OS		
	Windows		
Static Code Analysis	Sonar Cloud		

Local Development → Push Changes to branch → PR to merge onto main → Triggers CI → CI Flow

Passed Tests? — No → Local Development
Passed Tests? — Yes → Manual Review (Needs 2 Approvals for merging)

Approved? — No → Local Development
Approved? — Yes → Merge to Main → Triggers Doc Builder → Documentation Website Published

Set Release version → Triggers CD Flow → Build Docker Image — **Build Step** → Push Image to Registry

Pull Image from Registry — **Deploy Step** → Deploy to Azure App Service

Miro Board
Sonar cloud

Systems - Azure Deployment

[Github Repo](#)

[Azure Dashboard](#)

	Manage view ⌄	↻ Refresh	↓ Export to CSV		⊘ Assign tags		🗑 Clear				☰ Group by none ⌄

⧩ Filter for any field... | Subscription equals **all** | Resource Group equals **all** ✕ | Type equals **all** ✕ | Location equals **all** ✕ | + Add filter

	Name ↑		Type	Location	Resource Group	Subscription	Last accessed
☐	🟦 Feed-Amalgamator	⋯	SQL database	West US	FeedAmalgamator_group	Azure for Students	21 hours ago
☐	🟦 feedamalgamator	⋯	SQL server	West US	FeedAmalgamator_group	Azure for Students	1 day ago
☐	🌐 FeedAmalgamator	⋯	App Service	West US	FeedAmalgamator_group	Azure for Students	2 days ago
☐	💡 FeedAmalgamator	⋯	Application Insights	West US	FeedAmalgamator_group	Azure for Students	2 days ago
☐	📦 FeedAmalgamator_group	⋯	Resource group		FeedAmalgamator_group	Azure for Students	2 days ago
☐	🗄 ASP-DefaultResourceGroupWUS-bad0	⋯	App Service plan	West US	DefaultResourceGroup-WUS	Azure for Students	5 days ago

Systems - Google Analytics page

[Google Analytics Dashboard](#)

Suggested for you

Views by Page title and scree...	VIEWS
Log In - Feed Amalga...	67
- Feed Amalgamator	57
Feed Amalgamator - ...	35
Enter the domain na...	29
Delete Server - Feed ...	8

Last 7 days — View pages and s... →

Users ▾ by Country ID ▾

COUNTRY	USERS
United States	34

Last 7 days — View countries →

Sessions ▾ by Session default ch...	
SESSION DEFAULT ...	SESSIONS
Direct	43
Referral	3

Last 7 days — View traffic acqu... →
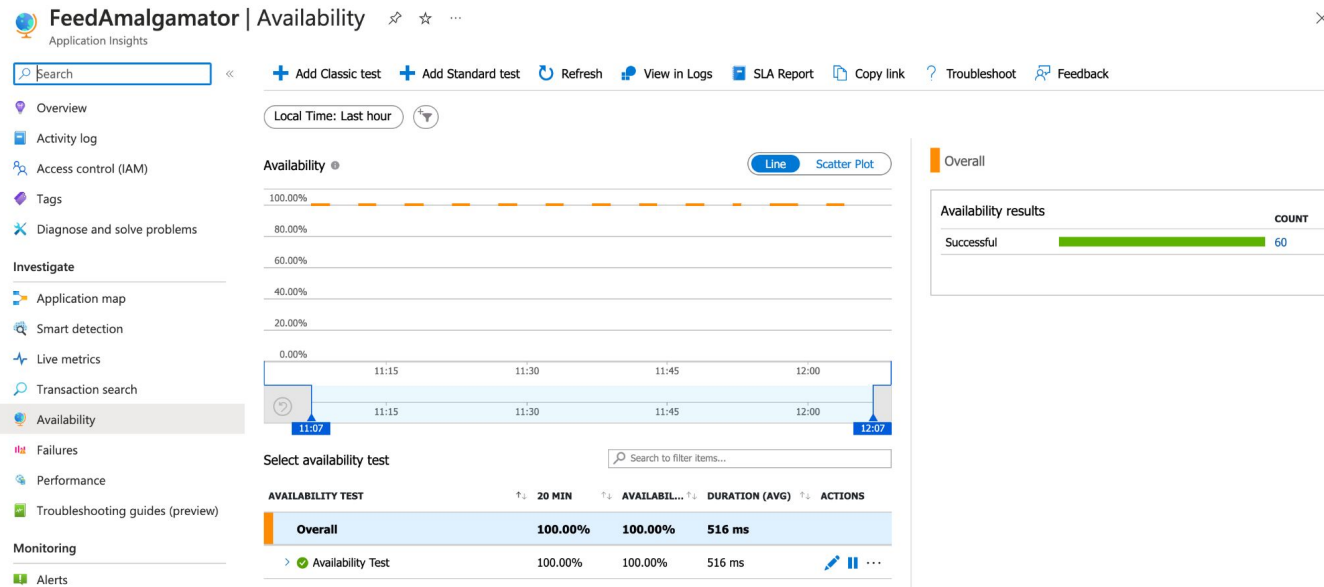
Systems - Monitoring Page

Dashboard

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Lessons Learnt
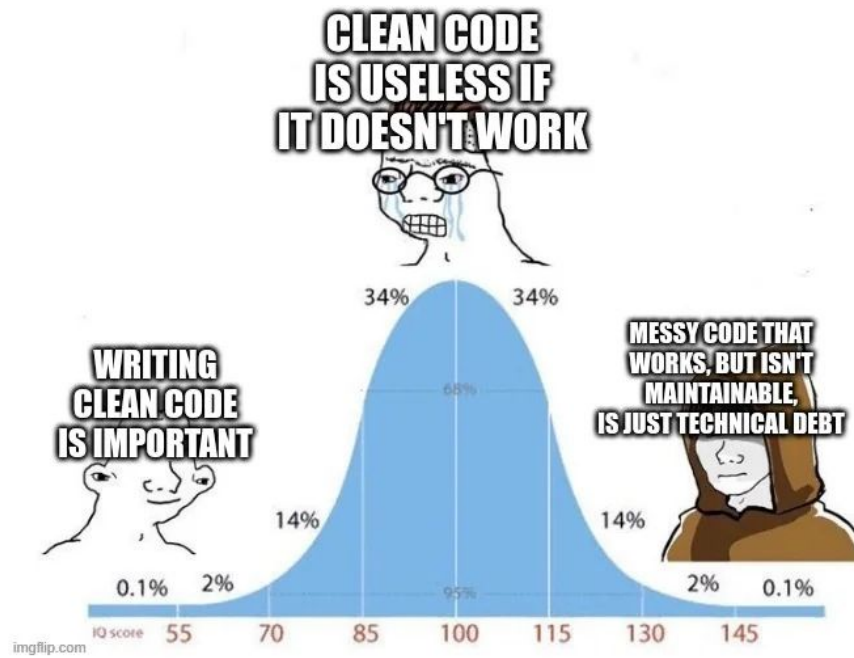
Discovered that writing clean code is like leaving a clean kitchen after cooking – nobody notices until it's a disaster, and suddenly everyone's pointing fingers.

Realized that CI/CD is the unsung hero of software development, like the guy who changes the toilet paper roll at the office

handling all
exceptions except one

client encountering
that error

ProgrammerHumor.io

Logging and exception handling were as challenging as convincing a cat to take a bath – you think you have control, but then things get unexpectedly messy, and you're left questioning your life choices.

Explored more ways to test a full-stack web app than google maps navigating through UCSD.

ACCEPT JOB AS SENIOR ENGINEER

8 HOURS OF MEETINGS A DAY
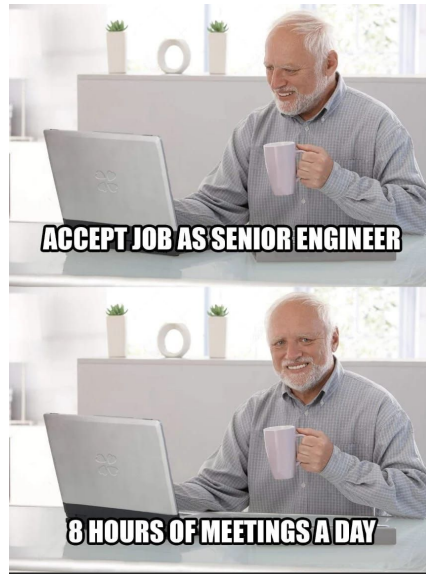
Software engineering is like throwing a surprise party for introverts – you spend more time trying to get people to collaborate than you do fixing that unclosed HTML tag.

Scoping is like trying to assemble IKEA furniture without the instructions – you might end up with a wonky bookshelf instead of a sleek project

DOCUMENT EVERY GODDAMN THING!!!! – Reading undocumented code is like watching Inception backwards.

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Thank you!