



# How to Navigate the Tech Field: A Beginner's Guide

Polina Vorozheykina  
Ashley Puls  
Elisa Binette



**All views are our own.**

# Agenda



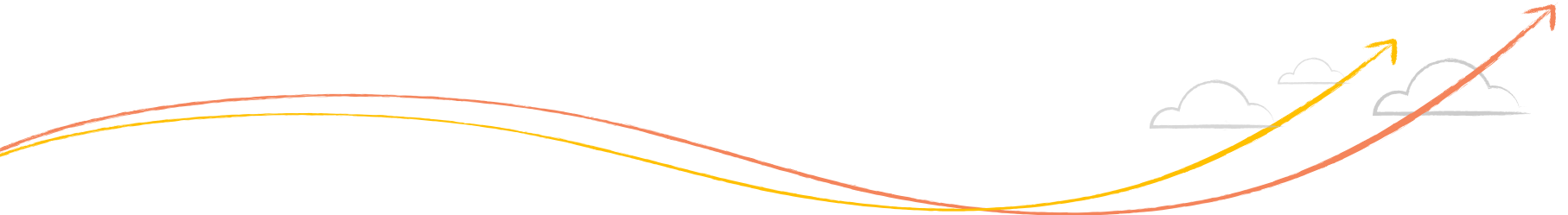
## **Polina Vorozheykina: How to Join a Software Team**

Ashley Puls: Industry Tools and Terminology

Elisa Binette: Demystifying Roles and Titles

# How to Join a Software Team

Polina Vorozheykina, Software Engineer at New Relic



# Bit of a Background

# The First Week

# 1. Learn to recognise your own critic...

**... and make it work for you**



## 2. Calm self doubt

# 3. Write things down ...

Dagger = ?



Ratpack = ?



# 3. Write things down ...

**... research...**

**... and ask for context and clarification**

## 4. Seek new challenges

# 5. Take advantage of your onboarding time



## **6. Know thy stress response**

# The Lessons

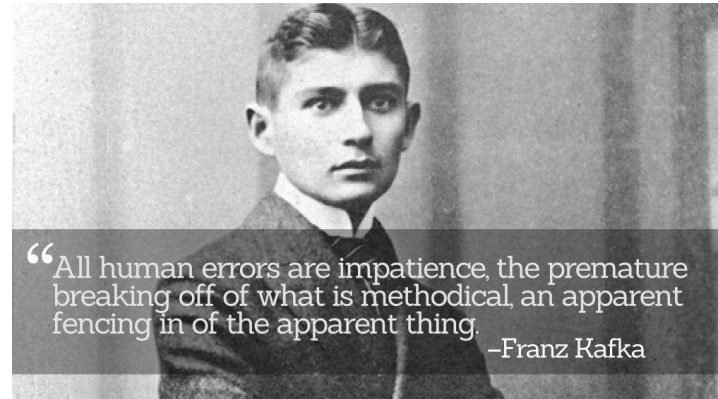
- Learn to recognise and utilise your inner critic
- Calm self doubt
- Write things down, research and ask for context
- Seek challenges
- Take advantage of your onboarding time
- Know thy stress response

# 7. Rinse and Repeat ...

Spring = ?

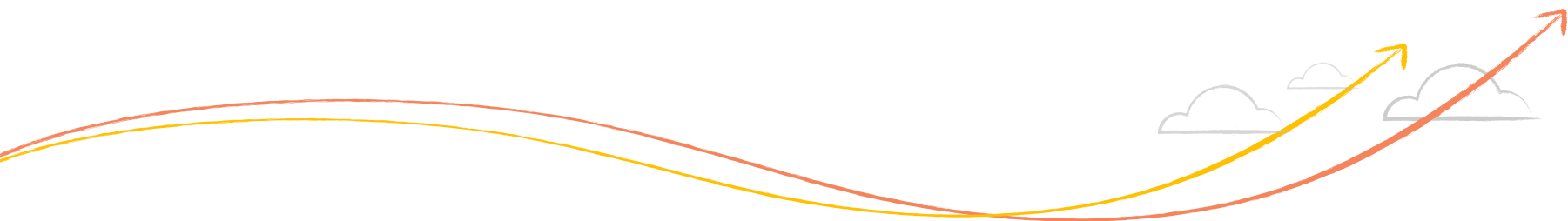


Kafka = ?



# 7. Rinse and Repeat ...

# Questions?



# Agenda

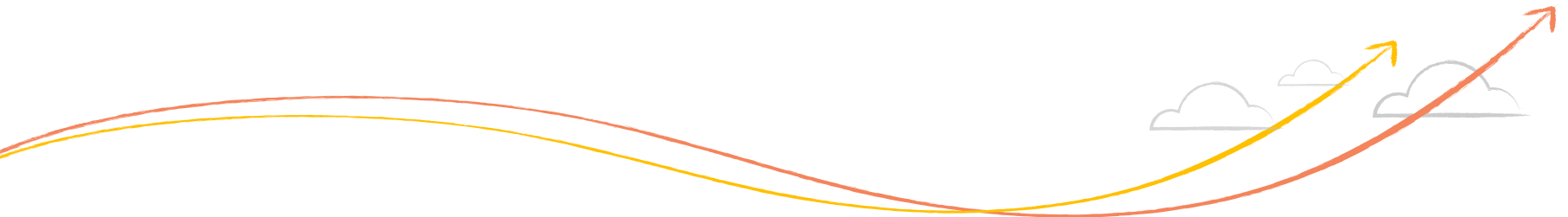
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# Industry Tools and Terminology

Ashley Puls, Principal Engineer at New Relic





# Sources for Images

- <https://developer.amazon.com/docs/custom-skills/understanding-custom-skills.html>
- <https://www.publicdomainpictures.net/en/view-image.php?image=231352&picture=camping>
- <https://en.wikipedia.org/wiki/Campfire>
- <https://developer.amazon.com/docs/ask-overviews/build-skills-with-the-alexa-skills-kit.html>
- <https://github.com/alexa/alexa-skills-kit-sdk-for-java/blob/2.0.x/samples/helloworld/src/com/amazon/ask/helloworld/handlers/CancelandStopIntentHandler.java>
- <https://pixabay.com/en/boston-baked-beans-molasses-671041/>
- <https://pixnio.com/food-and-drink/desserts-cakes/food-plate-cake-sweet-dessert-celebration>
- <https://commons.wikimedia.org/wiki/File:Reading-books.jpg>
- <https://en.wikipedia.org/wiki/Google>
- <https://en.wikipedia.org/wiki/Cheeseburger#/media/File:Cheeseburger.jpg>













**Get your hands dirty**



# Problem



**Who should walk the dogs?**

# Solution



# Family Chore Chooser

# Solution



## Next Generation Family Chore Chooser

# Next Generation Family Chore Chooser

How do I interact with Alexa?

# Next Generation Family Chore Chooser

How do I interact with Alexa?

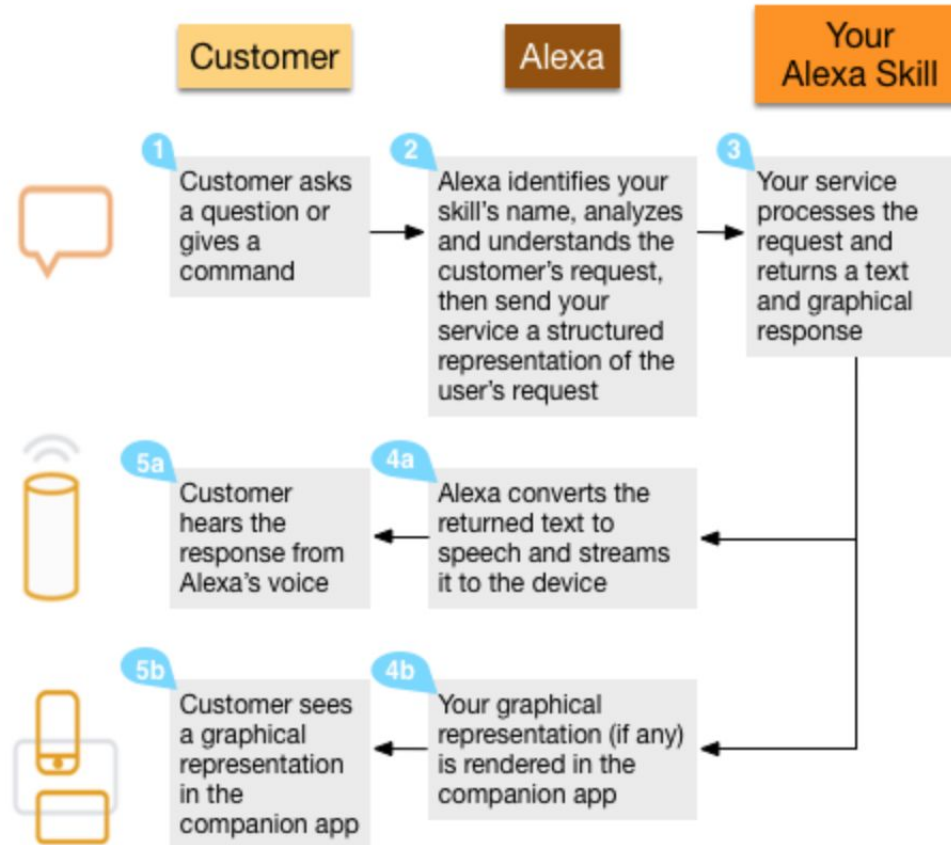
**Application Programming Interface (API):** how software programs interact with each other

# Next Generation Family Chore Chooser

How do I interact with Alexa?

**Alexa Skills Kit**

# From Amazon's Documentation



# From Amazon's Documentation

## To create ...

A skill that can handle just about any type of request.

For example:

- Look up information from a web service
- Integrate with a web service to order something (order a car from Uber, order a pizza from Domino's Pizza)
- Interactive games
- Just about anything else you can think of

## Use this skill type

**Custom skill** (*custom interaction model*)

You define the requests the skill can handle (*intents*) and the words users say to invoke those requests (*utterances*).



# From Amazon's Documentation

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## Use this skill type

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# Learn how to learn

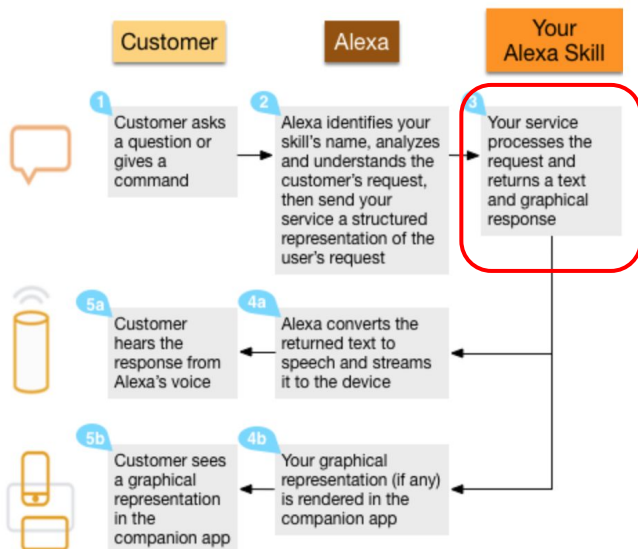
# Next Generation Family Chore Chooser

What software do I actually need to write?

# Next Generation Family Chore Chooser

What software do I actually need to write?

- Web Service
- AWS Lambda



# Software Stack

Windows, High Sierra

Operating System

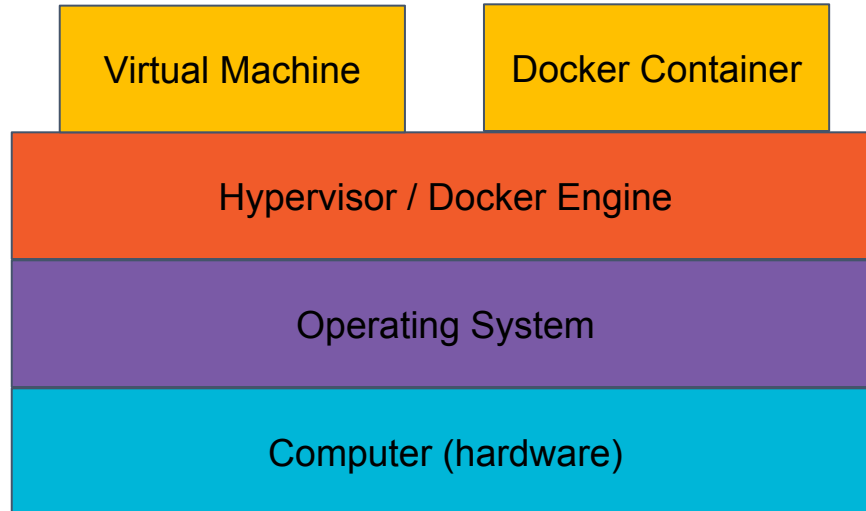
Dell, Macbook

Computer (hardware)

# Software Stack

VM acts as its own computer.

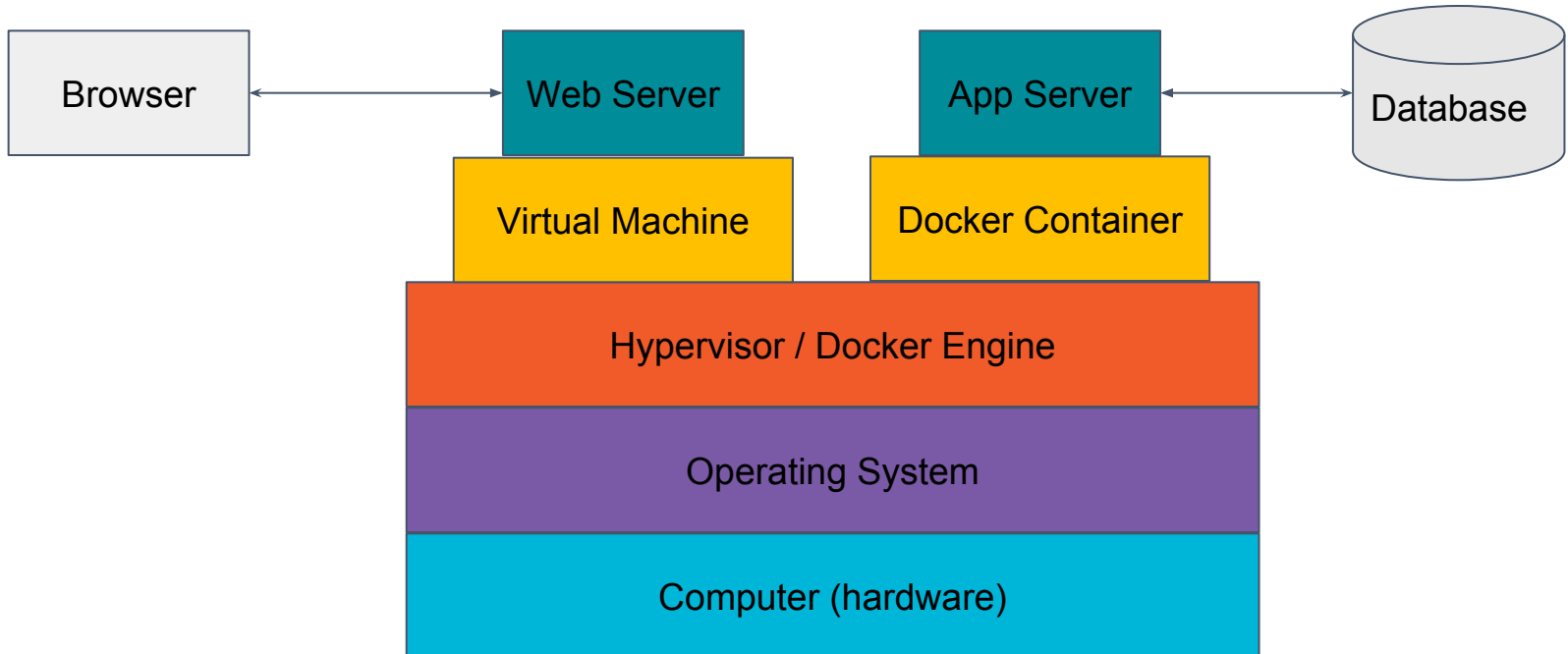
VM or container management layer



Container is lighter and faster but not as isolated.

# Software Stack

Runs web applications. Serves HTTP content.



# Next Generation Family Chore Chooser

What software do I actually need to write?

- Web Service: Accepts HTTP requests.
- AWS Lambda: Accepts request without having to manage servers.



# From Amazon's Repository

```
public class HelloWorldIntentHandler implements RequestHandler {  
  
    @Override  
    public boolean canHandle(HandlerInput input) {  
        return input.matches(intentName("HelloWorldIntent"));  
    }  
  
    @Override  
    public Optional<Response> handle(HandlerInput input) {  
        String speechText = "Hello world";  
        return input.getResponseBuilder()  
            .withSpeech(speechText)  
            .withSimpleCard("HelloWorld", speechText)  
            .build();  
    }  
}
```

# Core Building Blocks

- How data is represented
  - Numbers: int, byte, long, float, double
  - Strings and Objects
- Basic data structures
  - List, Set, Map, Tree, Stack, Queue
- Basic algorithms
  - Big O Notation
  - Bubble sort, quick sort, heap sort

# Things you just need to know

- Focus on learning one language really well
- Understand version control (Git)

**Know where to go to find the answer**

# Know where to go to find the answer

The Google logo is centered on the page, featuring its characteristic multi-colored letters: 'G' in blue, 'o' in red, 'o' in yellow, 'g' in blue, 'l' in green, and 'e' in red.A large, empty search input field with a thin grey border. On the right side of the field, there is a small, colorful microphone icon representing voice search.

Google Search

I'm Feeling Lucky

# Reading

Picture  
Books

Single  
Word  
Books

Simple  
Story  
Books

Chapter  
Books

Adult  
Books

# Reading

Picture  
Books

Single  
Word  
Books

Simple  
Story  
Books

Chapter  
Books

Adult  
Books

## Summer reading program

# What is on your Summer Software Program?

learn a  
language

numbers

data  
structures

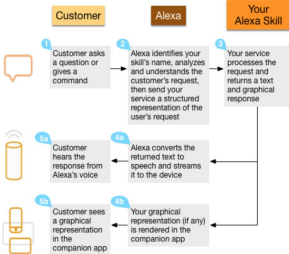
algorithms



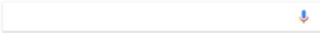
# Concepts



Get your hands dirty

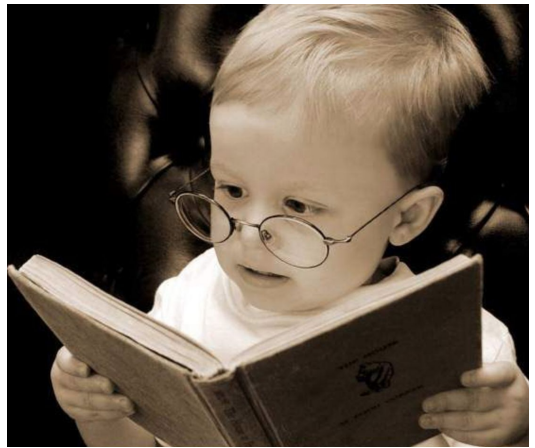


Learn how to learn

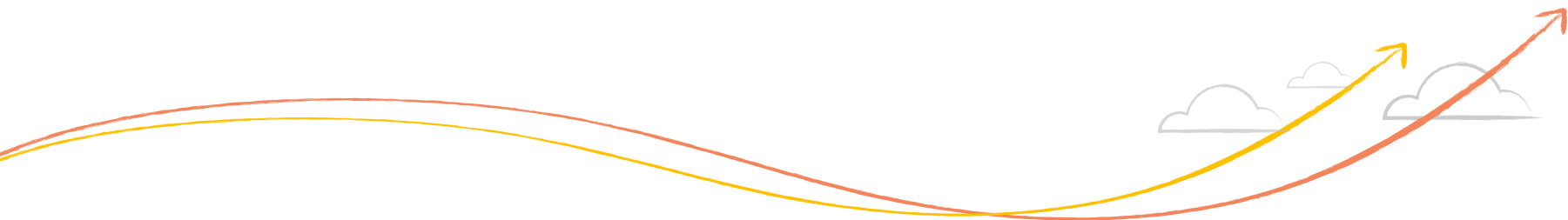


Google Search   I'm Feeling Lucky

Know where to find the answer



# Questions?



# Agenda

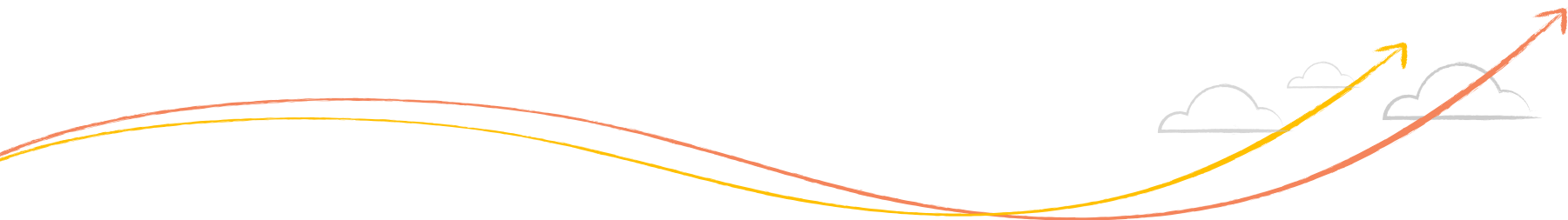
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 **Elisa Binette: Demystifying Roles and Titles**

# Demystifying Roles and Titles

Elisa Binette,  
Senior Engineering Manager



# What's in a level?

## Entry Level

- Just getting started
- Able to execute well defined tasks
- some oversight required
- Focus is on growing as an engineer, learning existing tools, resources and processes
- Should expect to be mentored by a mid-level or above

## Mid Level

- ~2-3+ years experience in role
- Able to execute tasks with some guidance
- Work is notably solid and well-factored
- Balances pragmatic delivery with being technically solid
- Able to pair with entry-level engineers

## Senior Level

- Their technical work makes other people's technical work easier
- Able to scope and stage work into well-defined milestones to avoid a monolithic deliverable.
- Identifies strategies to address technical problems affecting their team
- Able to mentor mid-level engineers

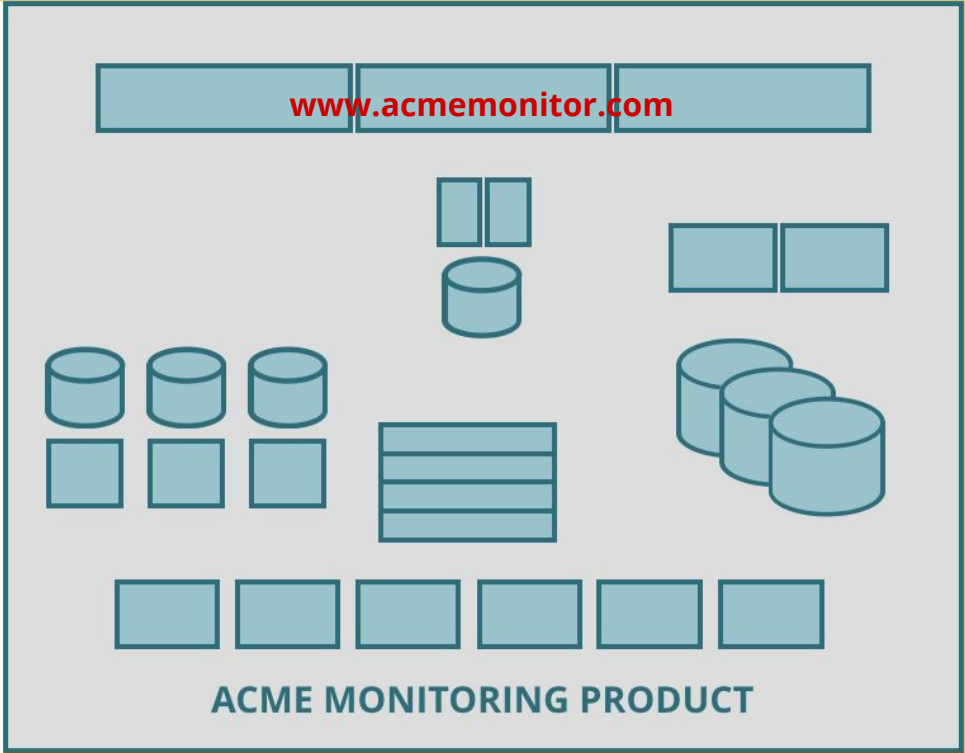
## Lead Level

- Multiplies the effectiveness of others by facilitating cross-team work
- Anticipates technical issues; makes design decisions to avoid them
- Sought out for technical advice
- Executes from conception through delivery
- Mentors senior engineers

# Building a Team

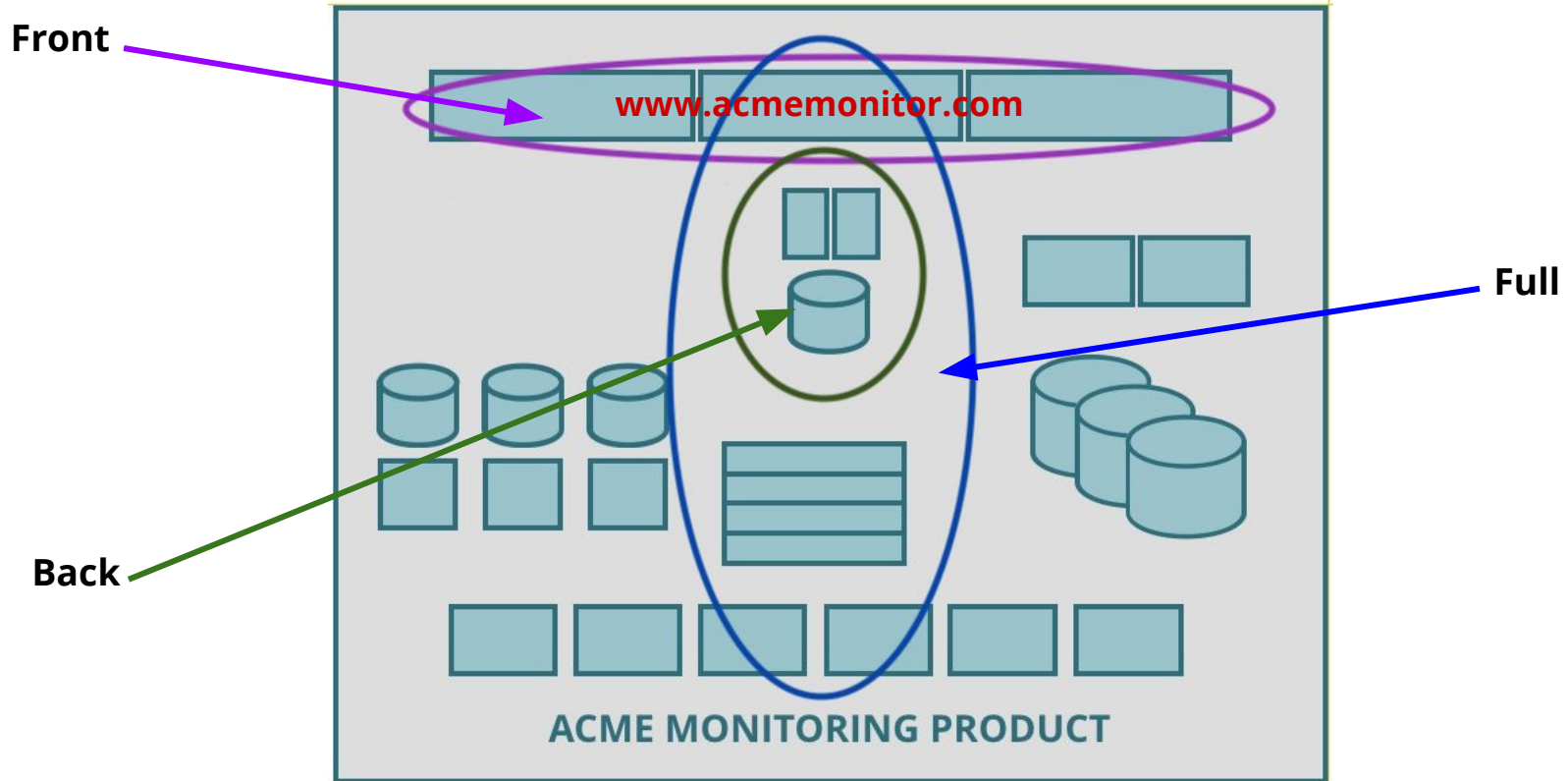


# All the Things

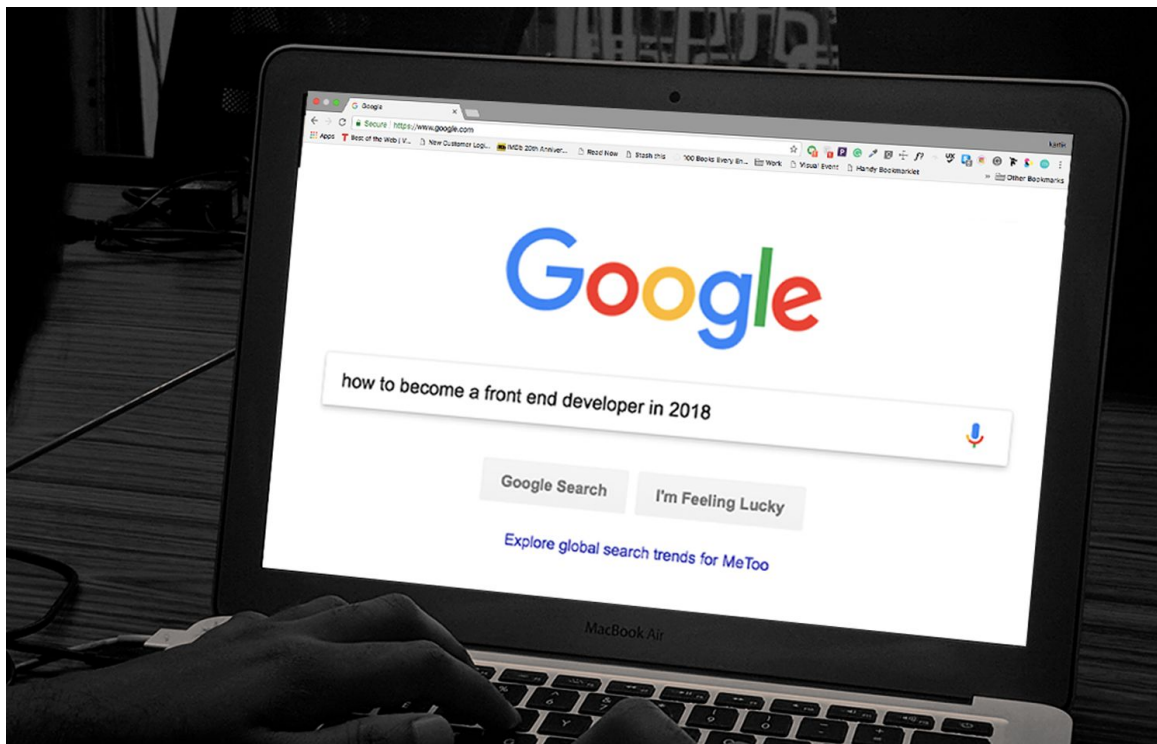




# Front End, Back End, Full Stack?

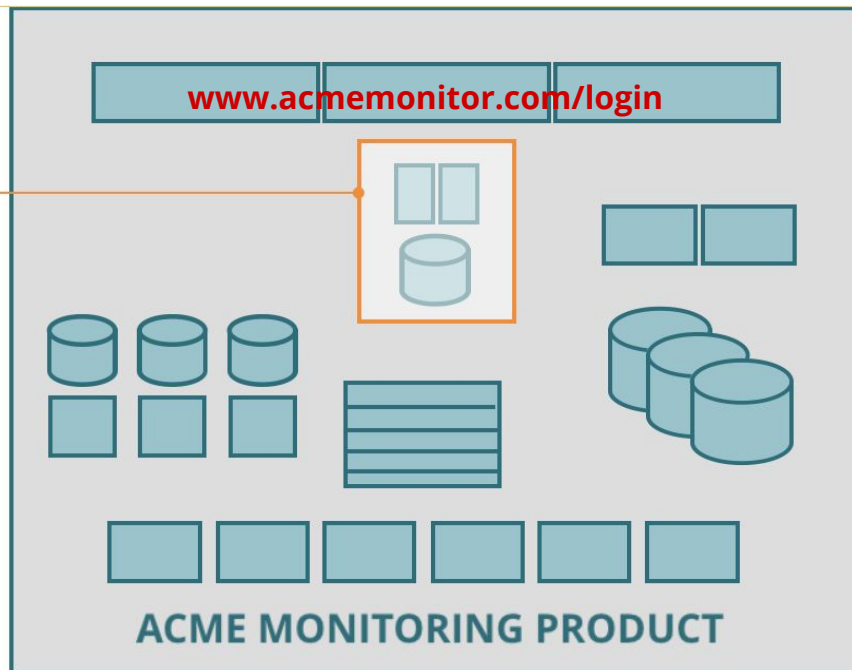


# Example Front End Service



# Example Back End Service

**Login Service:**  
*Authenticate user  
credentials*



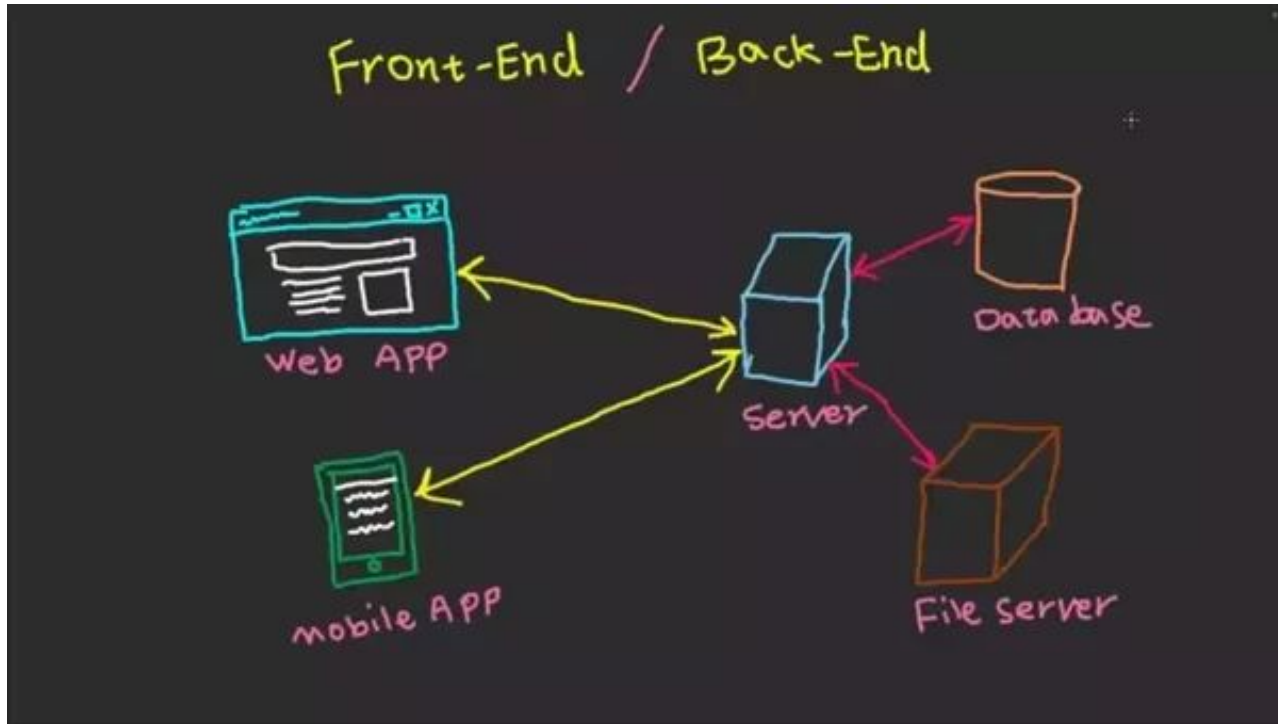
# Front End (Web) Developer



# A Front End Web Developer toolbox includes:

- HTML (Hyper Text Markup Language)
- CSS (Cascading Style Sheets) and Frameworks
  - Bootstrap
- JS (JavaScript) and Frameworks
  - AngularJS
  - Backbone
  - Ember
  - ReactJS
- RESTful Services and APIs

# Back End Web Developer



# A Back End Developer Developer toolbox includes:

- Ruby
- Go
- Java
- Node.js
- Python
- PHP
- .NET

# Full Stack Developer





# Site Reliability Engineer (SRE) and DevOps

O'REILLY



# Site Reliability Engineer Responsibilities

Knowledge and experience are a blend of engineering and operational skills. At New Relic, SREs are responsible for:

- Championing reliability best practices
- Guiding designs and processes with an eye toward resilience and low toil
- Reducing technical complexity and sprawl
- Driving the usage of tooling and common components
- Implementing software and tooling to improve resilience and automate operations

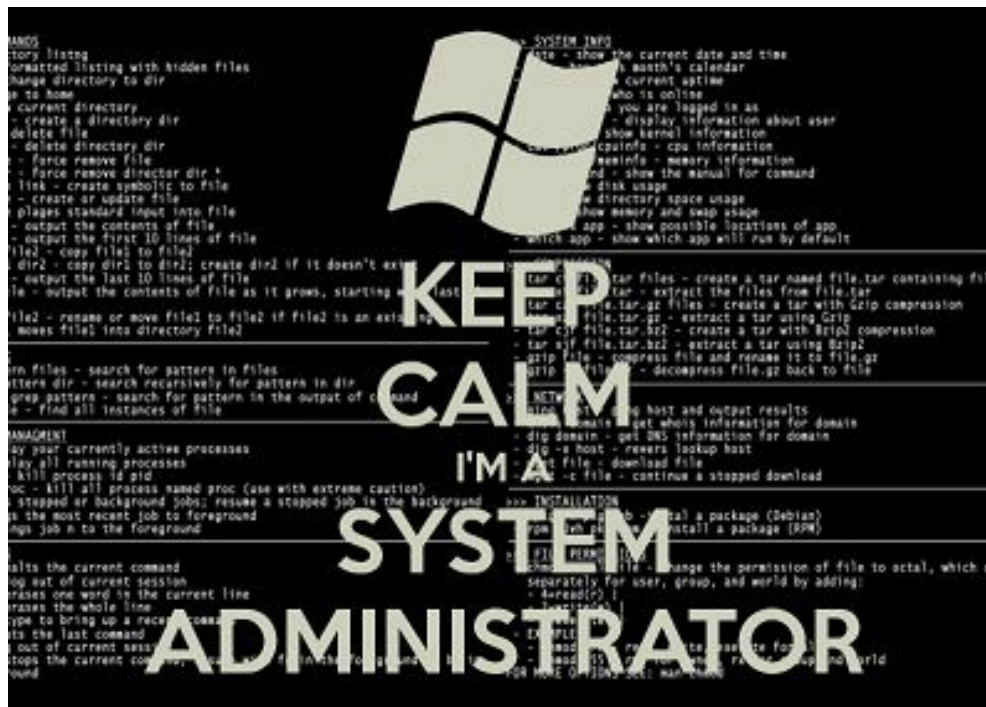


# A DBA toolbox includes:

Knowledge of:

- Structured Query Language (SQL)
- Distributed computing
- Database Design
- Operating Systems
- Storage Technologies
- Networking
- Databases:
  - MySQL, PostgreSQL, MongoDB, Redis, SQL Server, etc

# Systems Administrator (SysAdmin)



# A SysAdmin toolbox includes:

Knowledge of:

- Networking, servers, and OS
- Identity & Access Management
  - LDAP
- Scripting/automation
  - PowerShell or Perl
- Monitoring Tools
- HTML
- Javascript
- ITIL

# What's in a Title?

## Engineer

- Designs and develops features in collaboration with other engineers

## Lead (Engineer); Architect

- May be the team and/or technical lead
- Defines technical roadmap and technologies
- Helps other engineers do their best work

## Product Manager

- Defines feature roadmap and sets priorities
- Understands what the customer wants or needs to solve their problem

## Engineering Manager

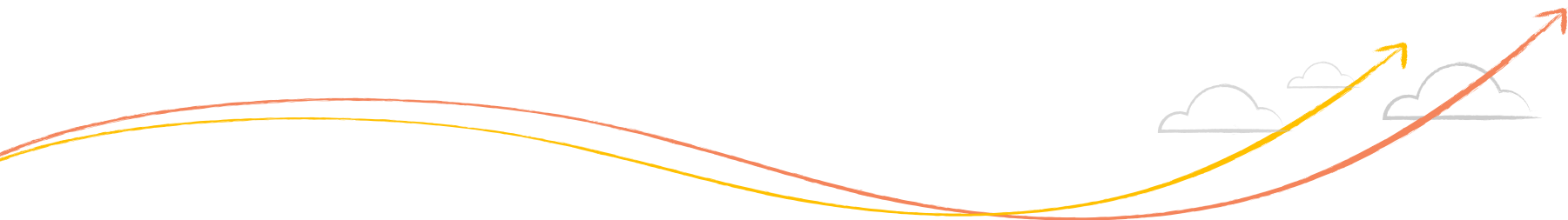
- Removes obstacles
- Supports the team
- Performance and Career Development

# There's something for everyone

- Figure out what you enjoy doing
- Learn things that are interesting to you
- Life experience counts
  - Take credit for the skills you have developed through other activities
  - Think about how things you already know apply to the role you want



# Questions?



A decorative graphic consisting of two wavy lines, one red and one yellow, that curve across the middle of the page. The yellow line ends in an arrow pointing up and to the right. The red line also ends in an arrow pointing up and to the right, positioned slightly higher and further to the right than the yellow arrow. Three simple line-art clouds are scattered in the background behind the lines.

**Thank You**