

KUBERNETES TRAINING

CLOSE SKILLS GAPS
BY SELF LEARNING
WITH AI

SETUP

Nature:

Our genetics determine our behavior. Our personality traits and abilities are in our “nature.”



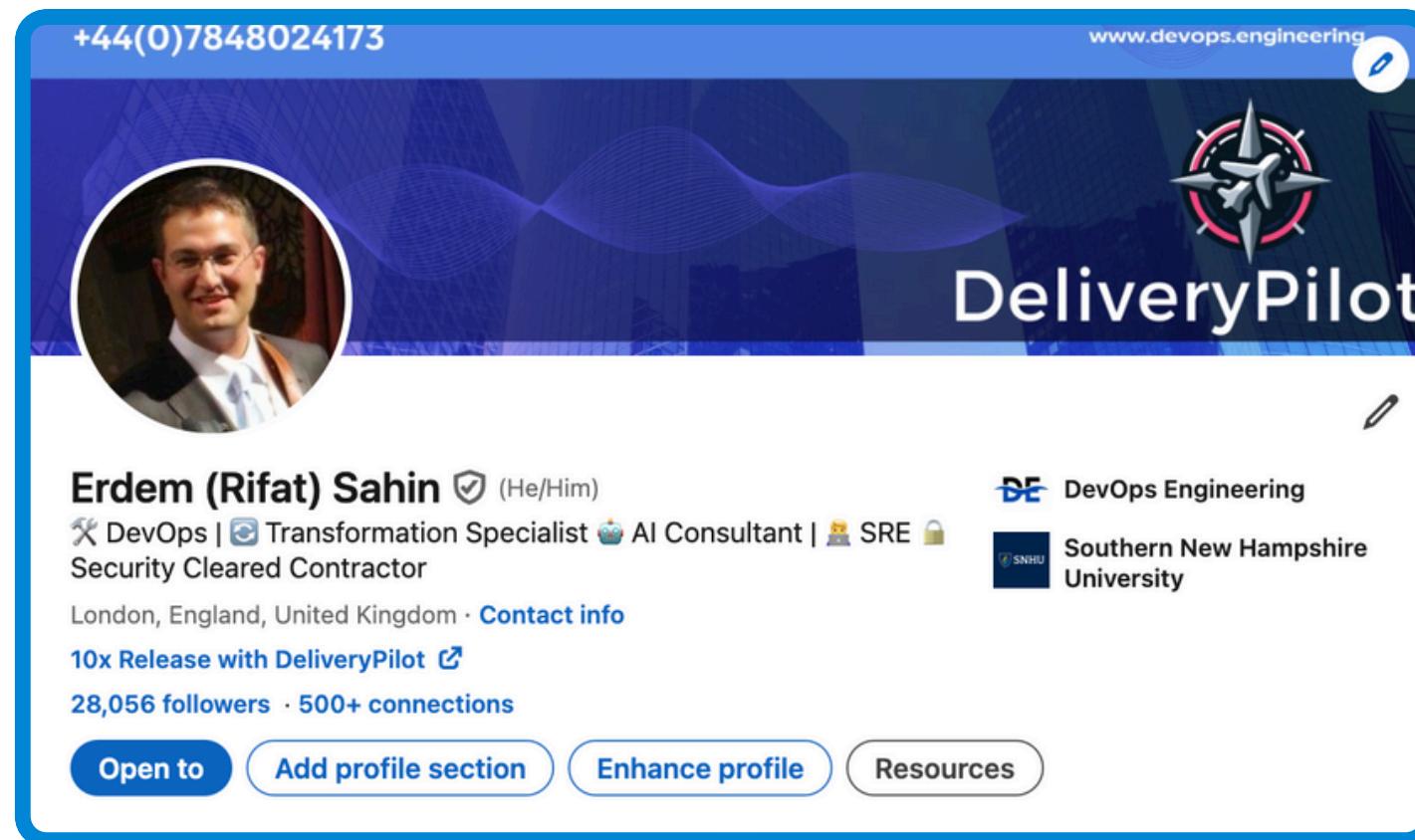
Nurture:

Our environment, upbringing, and life experiences determine our behavior. We are “nurtured” to behave in certain ways.



TRAINERS

1



+44(0)7848024173

www.devops.engineering

Erdem (Rifat) Sahin  (He/Him)

DevOps | Transformation Specialist | AI Consultant | SRE | Security Cleared Contractor

London, England, United Kingdom · [Contact info](#)

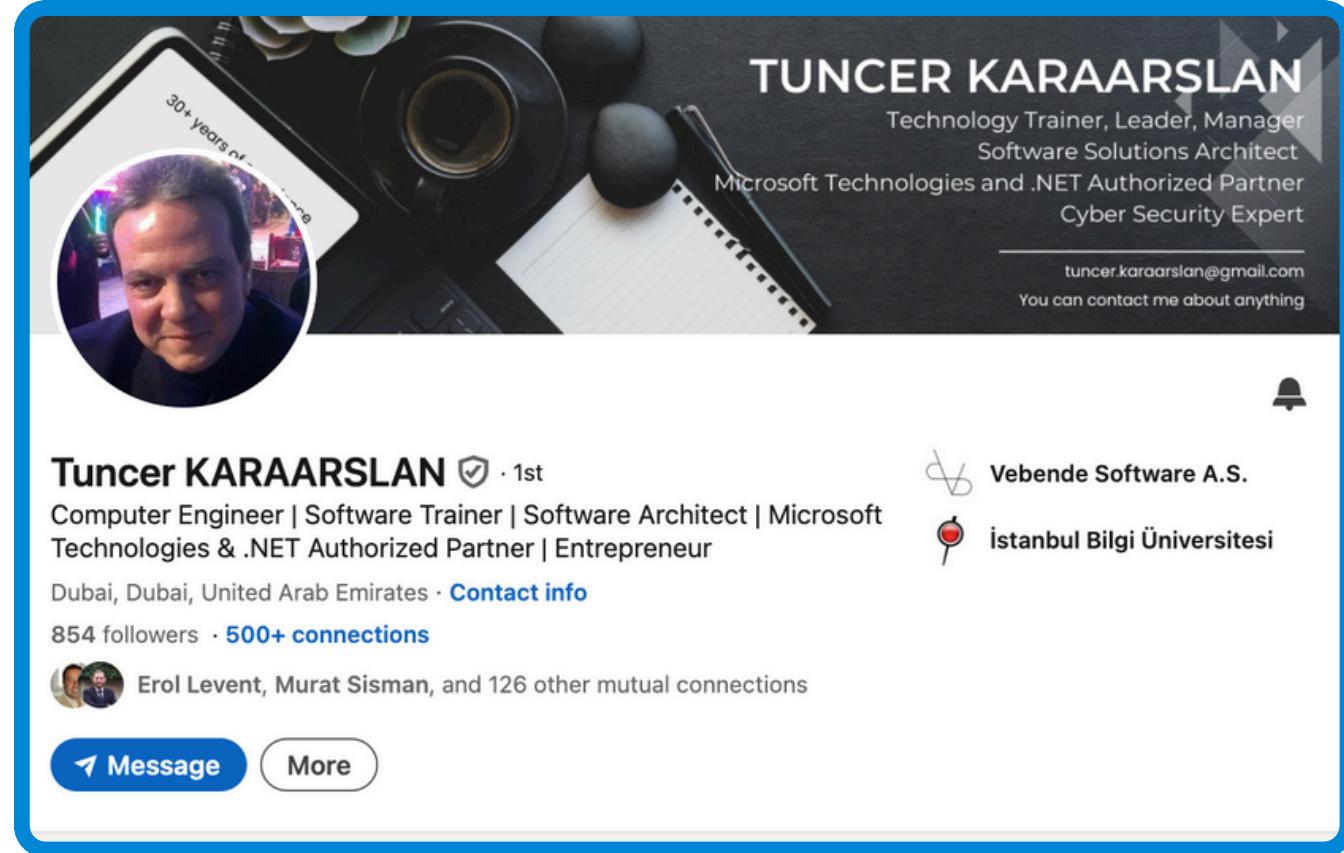
10x Release with DeliveryPilot

28,056 followers · 500+ connections

[Open to](#) [Add profile section](#) [Enhance profile](#) [Resources](#)

The LinkedIn profile of Erdem (Rifat) Sahin features a blue header with the text '+44(0)7848024173' and 'www.devops.engineering'. Below the header is a circular profile picture of a man with glasses. To the right of the picture is the text 'DeliveryPilot' with a compass rose logo. The main content area includes the name 'Erdem (Rifat) Sahin' with a verified checkmark and '(He/Him)'. It lists his roles: DevOps, Transformation Specialist, AI Consultant, and SRE, along with 'Security Cleared Contractor'. His location is London, England, United Kingdom, and there is a link to contact information. Below this, it says '10x Release with DeliveryPilot'. The follower count is 28,056 and connection count is 500+. At the bottom are four buttons: 'Open to', 'Add profile section', 'Enhance profile', and 'Resources'.

2



TUNCER KARAARSLAN  · 1st

Technology Trainer, Leader, Manager | Software Solutions Architect | Microsoft Technologies and .NET Authorized Partner | Cyber Security Expert

tuncer.karaarslan@gmail.com
You can contact me about anything

30+ years of experience

Vebende Software A.S.
İstanbul Bilgi Üniversitesi

Tuncer KARAARSLAN  · 1st

Computer Engineer | Software Trainer | Software Architect | Microsoft Technologies & .NET Authorized Partner | Entrepreneur

Dubai, Dubai, United Arab Emirates · [Contact info](#)

854 followers · 500+ connections

Erol Levent, Murat Sisman, and 126 other mutual connections

[Message](#) [More](#)

The LinkedIn profile of Tuncer Karaarslan features a blue header with the text '30+ years of experience'. Below the header is a circular profile picture of a man. The main content area includes the name 'Tuncer KARAARSLAN' with a verified checkmark and '· 1st'. It lists his titles: Technology Trainer, Leader, Manager, Software Solutions Architect, Microsoft Technologies and .NET Authorized Partner, and Cyber Security Expert. His email is tuncer.karaarslan@gmail.com and he says 'You can contact me about anything'. Below this, it says 'Vebende Software A.S.' and 'İstanbul Bilgi Üniversitesi'. The follower count is 854 and connection count is 500+. At the bottom are two buttons: 'Message' and 'More'.

+447848024173

LINK AND ADD
IN LINKEDIN

+905425505704

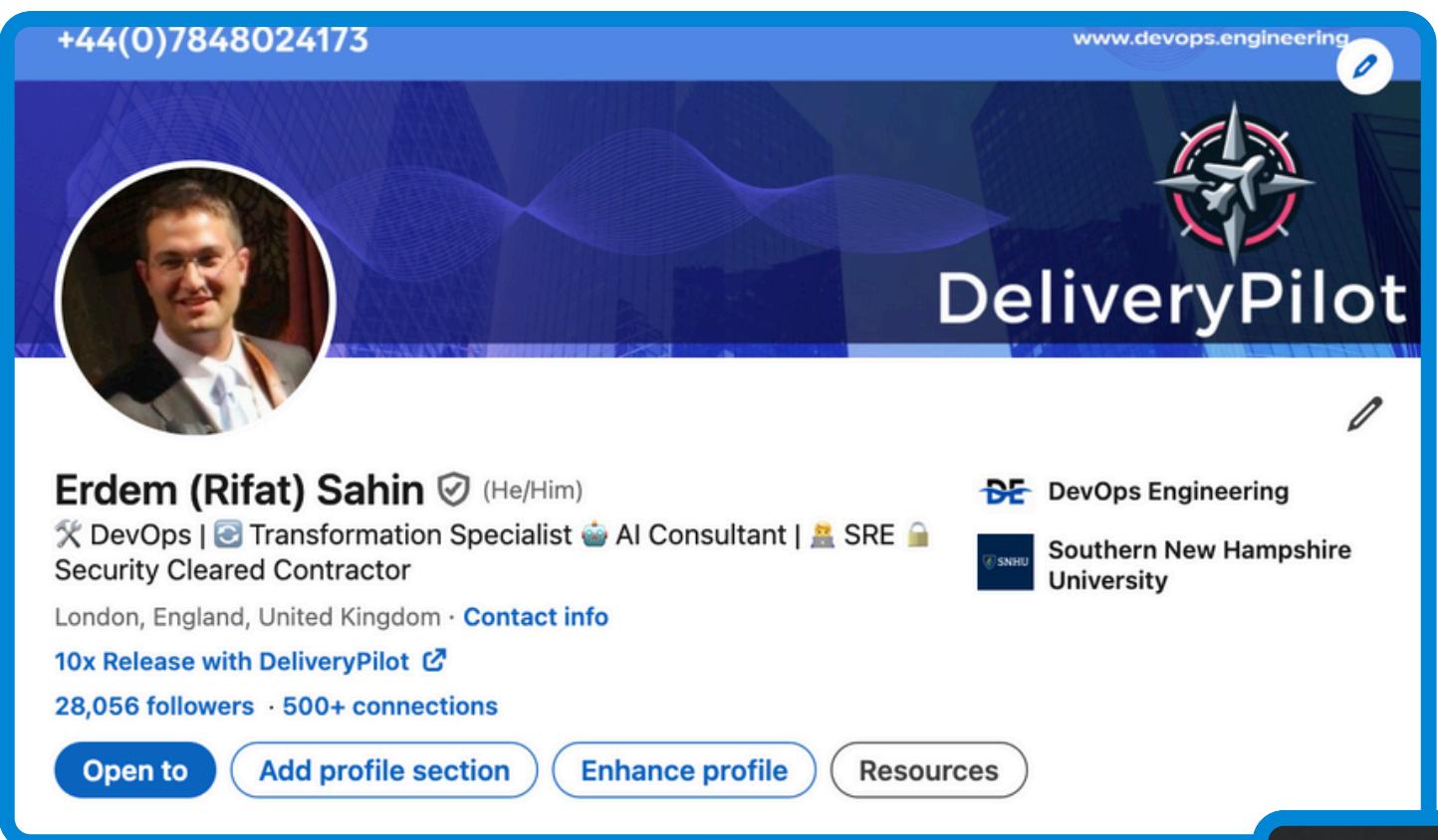
<https://www.linkedin.com/in/rifaterdemsahin/>

LOGIN TO
CANVA
PERSONAL
ACCOUNT

<https://www.linkedin.com/in/tuncerkaraarslan/>

CALENDAR

1

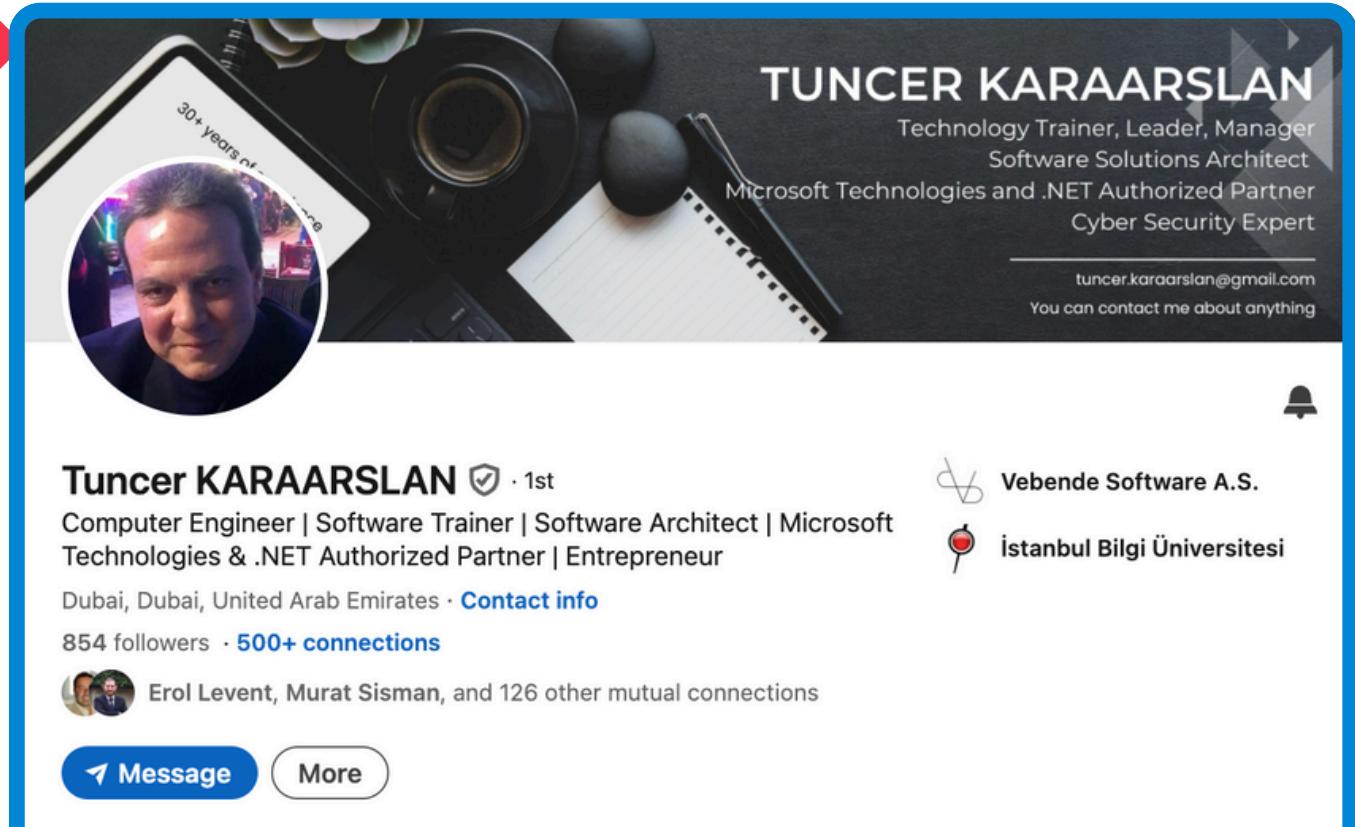


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www.devops.engineering

Erdem (Rifat) Sahin  (He/Him)
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[10x Release with DeliveryPilot](#)
28,056 followers · 500+ connections

[Open to](#) [Add profile section](#) [Enhance profile](#) [Resources](#)

2



TUNCER KARAARSLAN  · 1st
Technology Trainer, Leader, Manager | Software Solutions Architect | Microsoft Technologies and .NET Authorized Partner | Cyber Security Expert
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You can contact me about anything



Tuncer KARAARSLAN  · 1st
Computer Engineer | Software Trainer | Software Architect | Microsoft Technologies & .NET Authorized Partner | Entrepreneur
Dubai, Dubai, United Arab Emirates · [Contact info](#)
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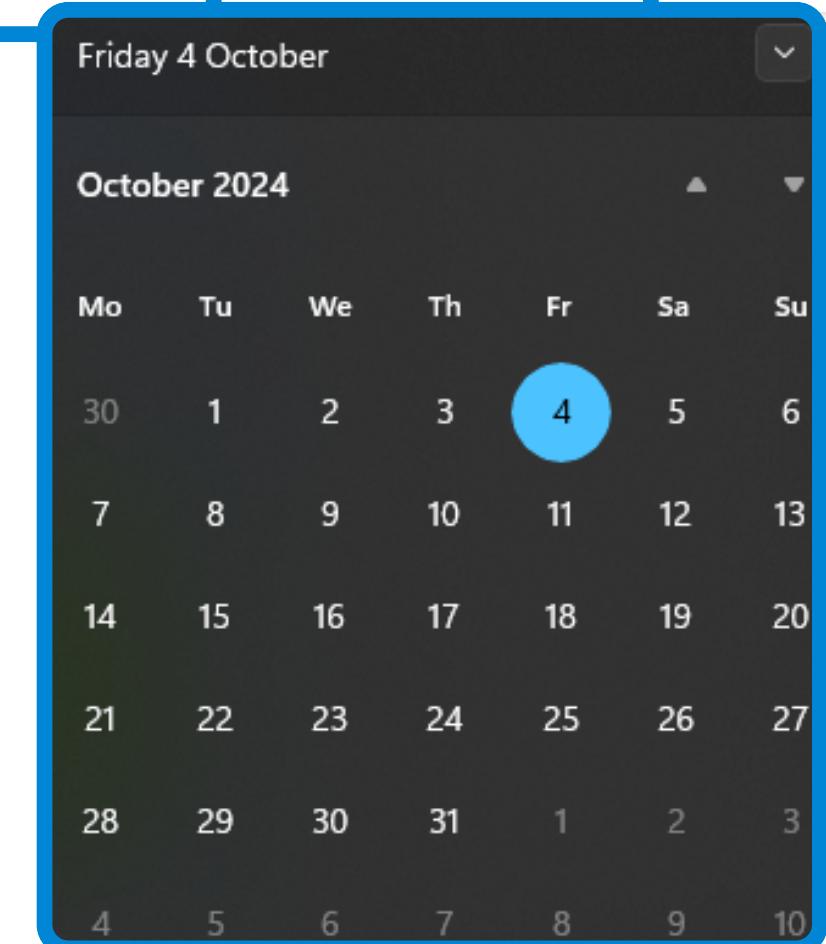
[Message](#) [More](#)

RECO

WEEKEND

NIHAT EZER

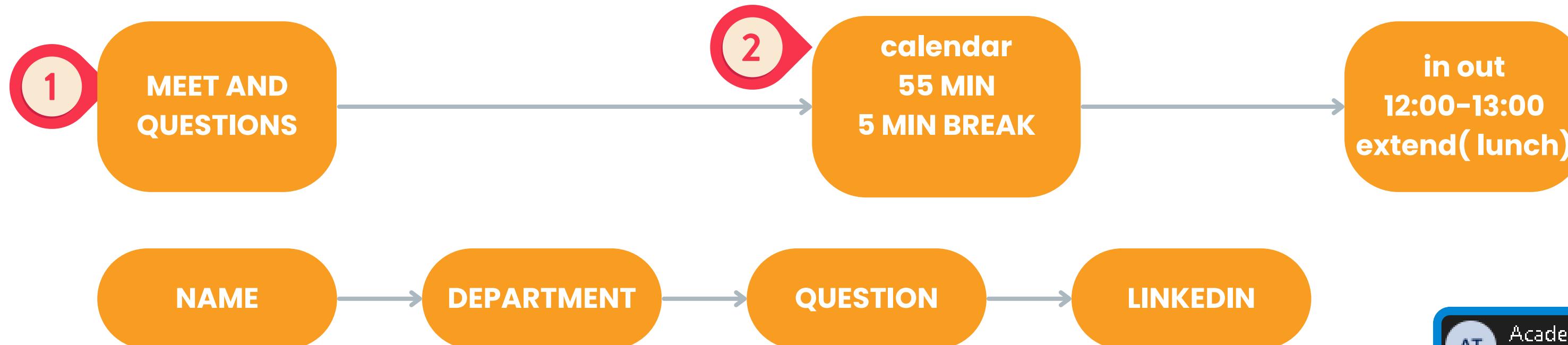
5-12-X



WEEKDAYS

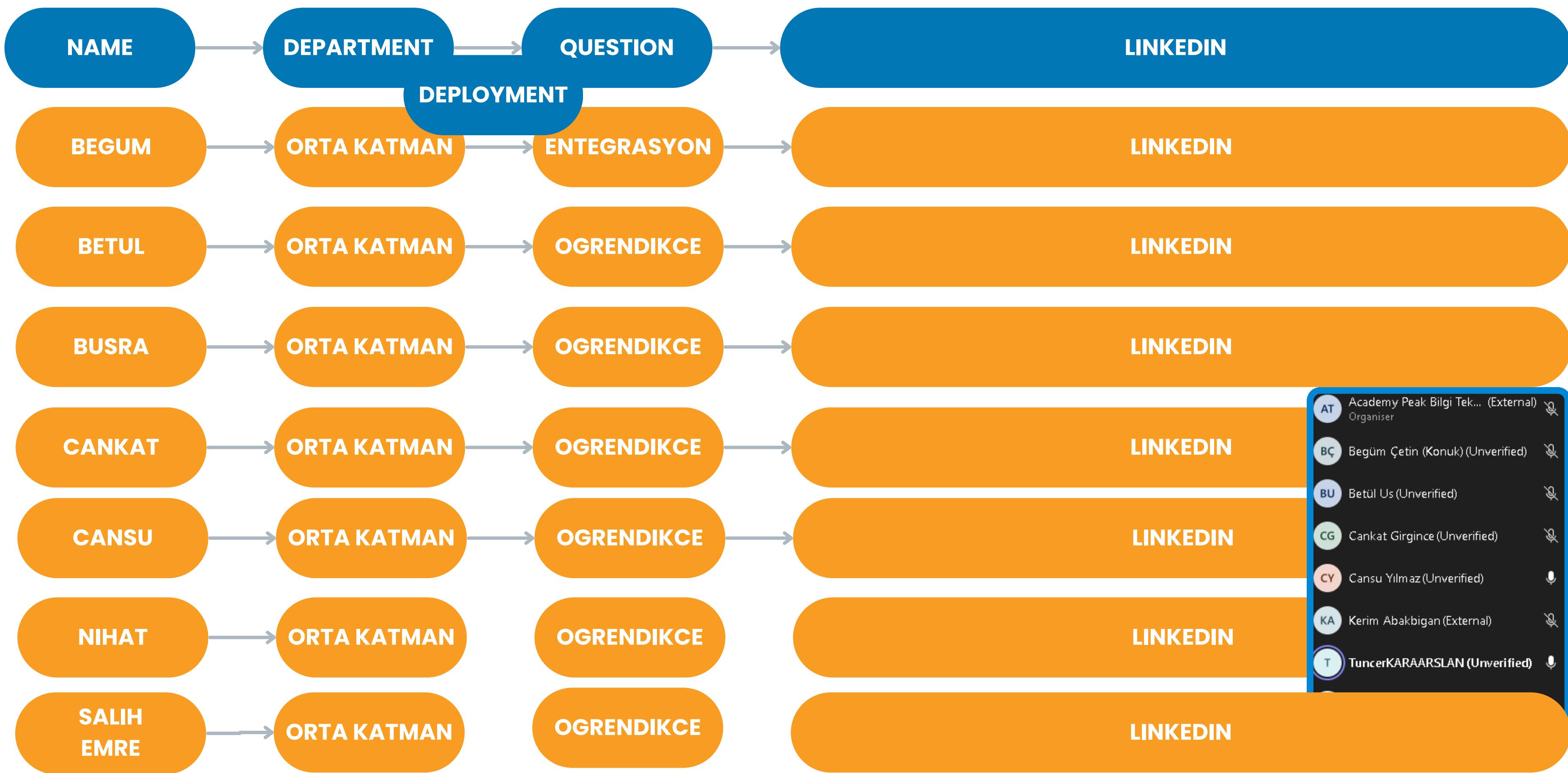
X

ATTENDENCE



AT	Academy Peak Bilgi Tek... (External) Organiser	🔗
BÇ	Begüm Çetin (Konuk) (Unverified)	🔗
BU	Betül Us (Unverified)	🔗
CG	Cankat Girgince (Unverified)	🔗
CY	Cansu Yılmaz (Unverified)	📞
KA	Kerim Abakbigan (External)	🔗
T	TuncerKARAARSLAN (Unverified)	📞
T	TuncerKARAARSLAN (Unverified) Leaving...	🕒

MEETUP

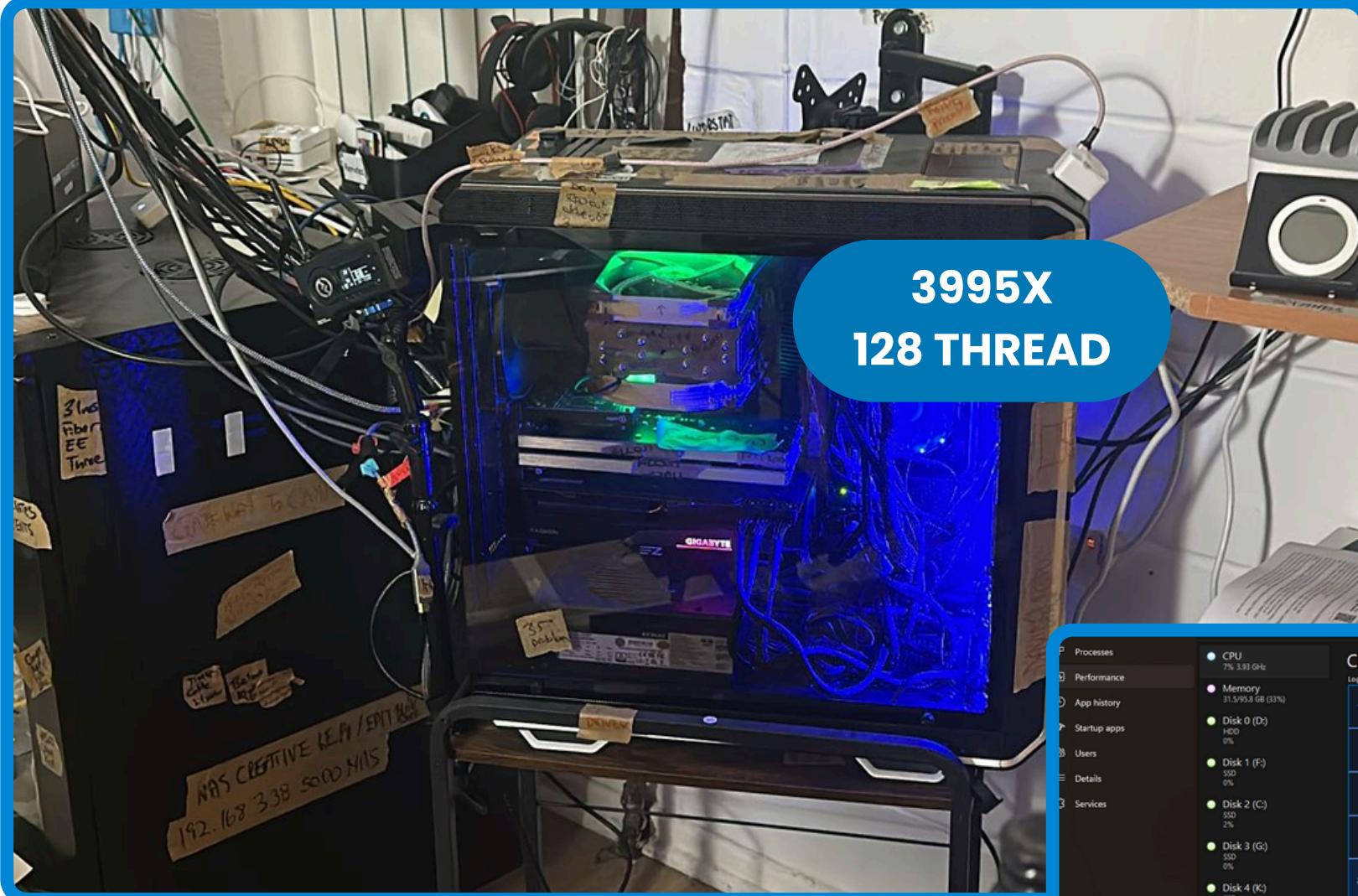


AT	Academy Peak Bilgi Tek... (External)	👤
BC	Begüm Çetin (Konuk) (Unverified)	👤
BU	Betül Us (Unverified)	👤
CG	Cankat Gircince (Unverified)	👤
CY	Cansu Yılmaz (Unverified)	👤
KA	Kerim Abakbigan (External)	👤
T	TuncerKARAARSLAN (Unverified)	👤

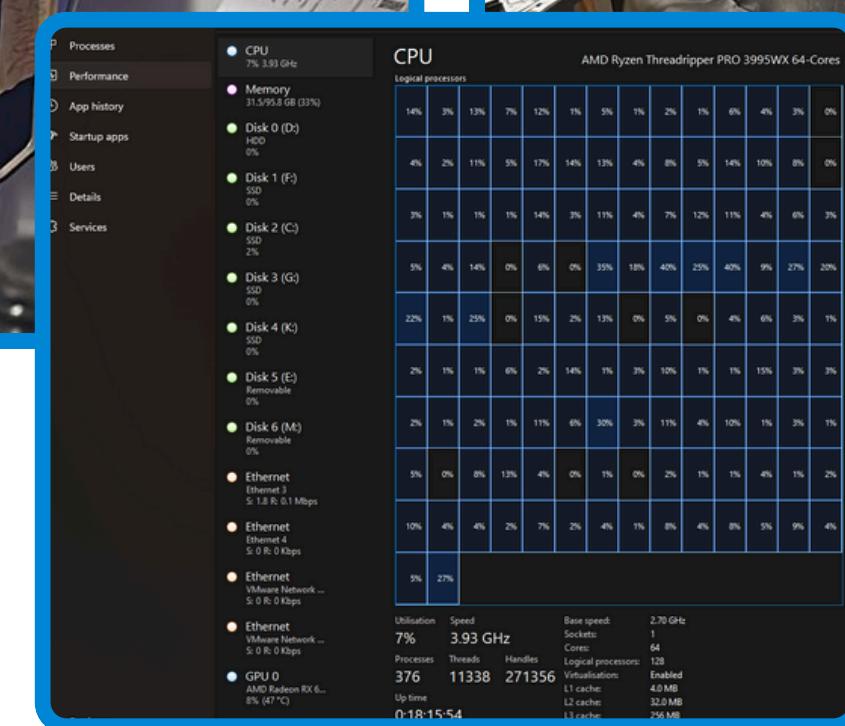
PROMPT > what are the main queestion in kubernetes training

SETUP

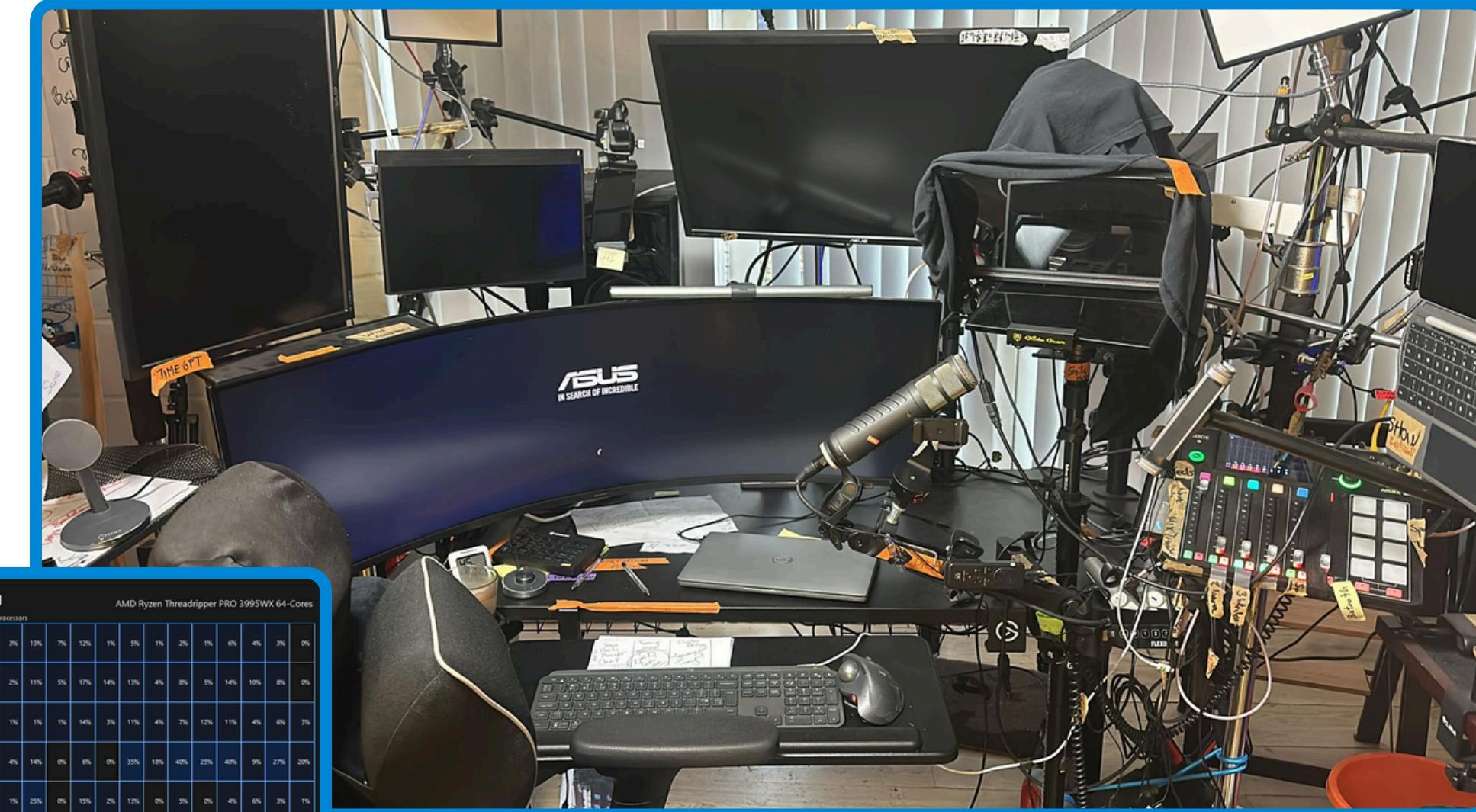
1



**3995X
128 THREAD**

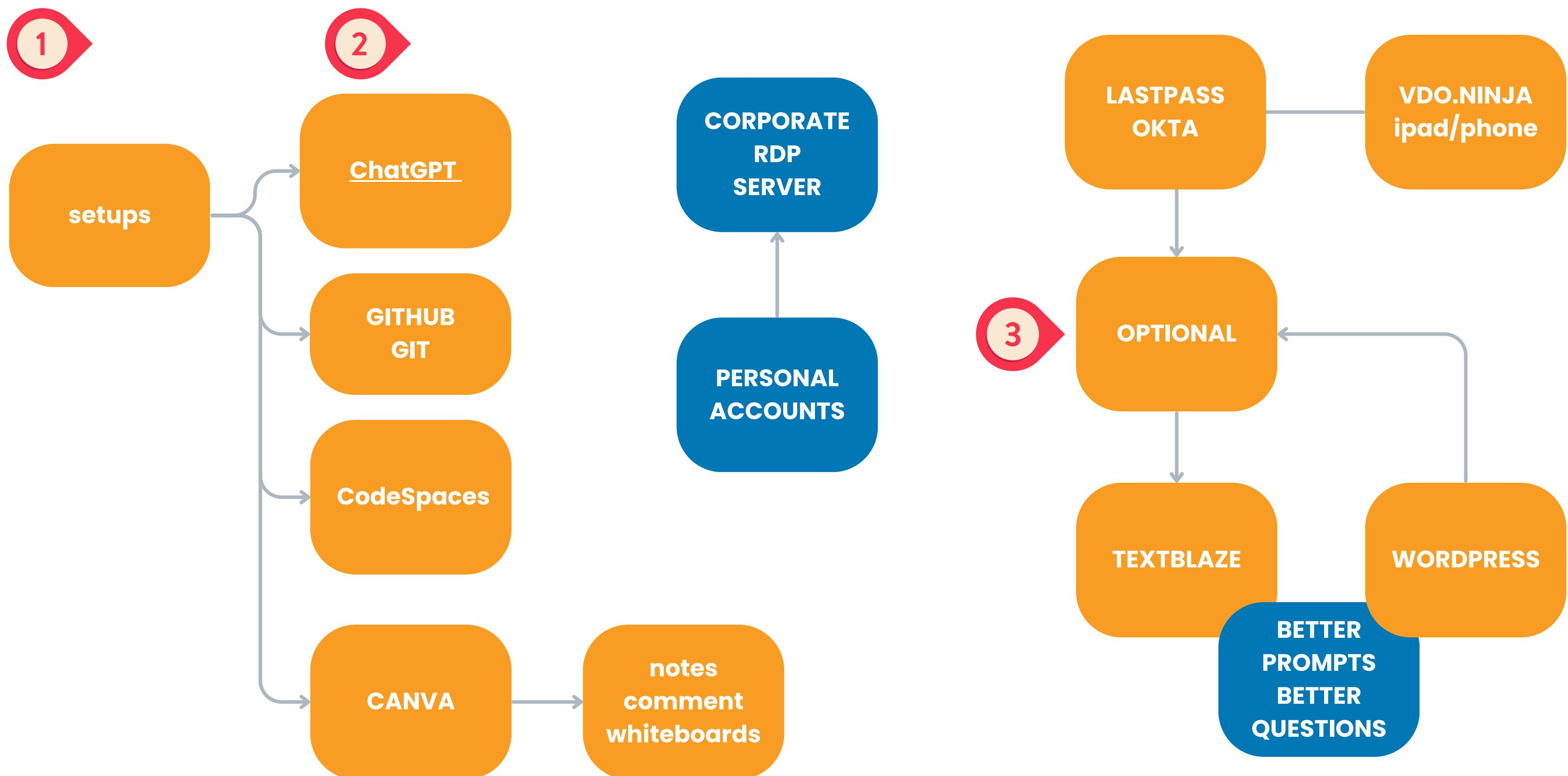


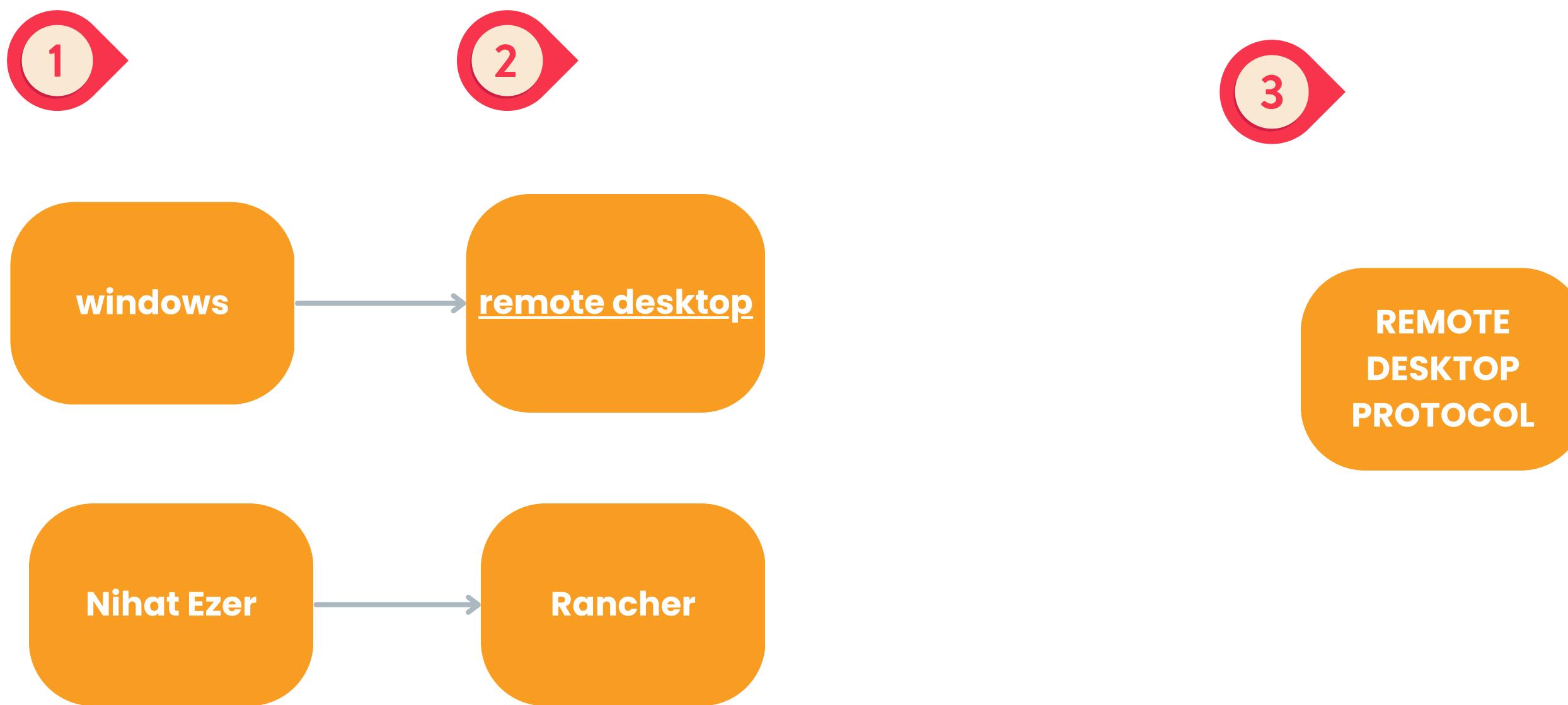
2



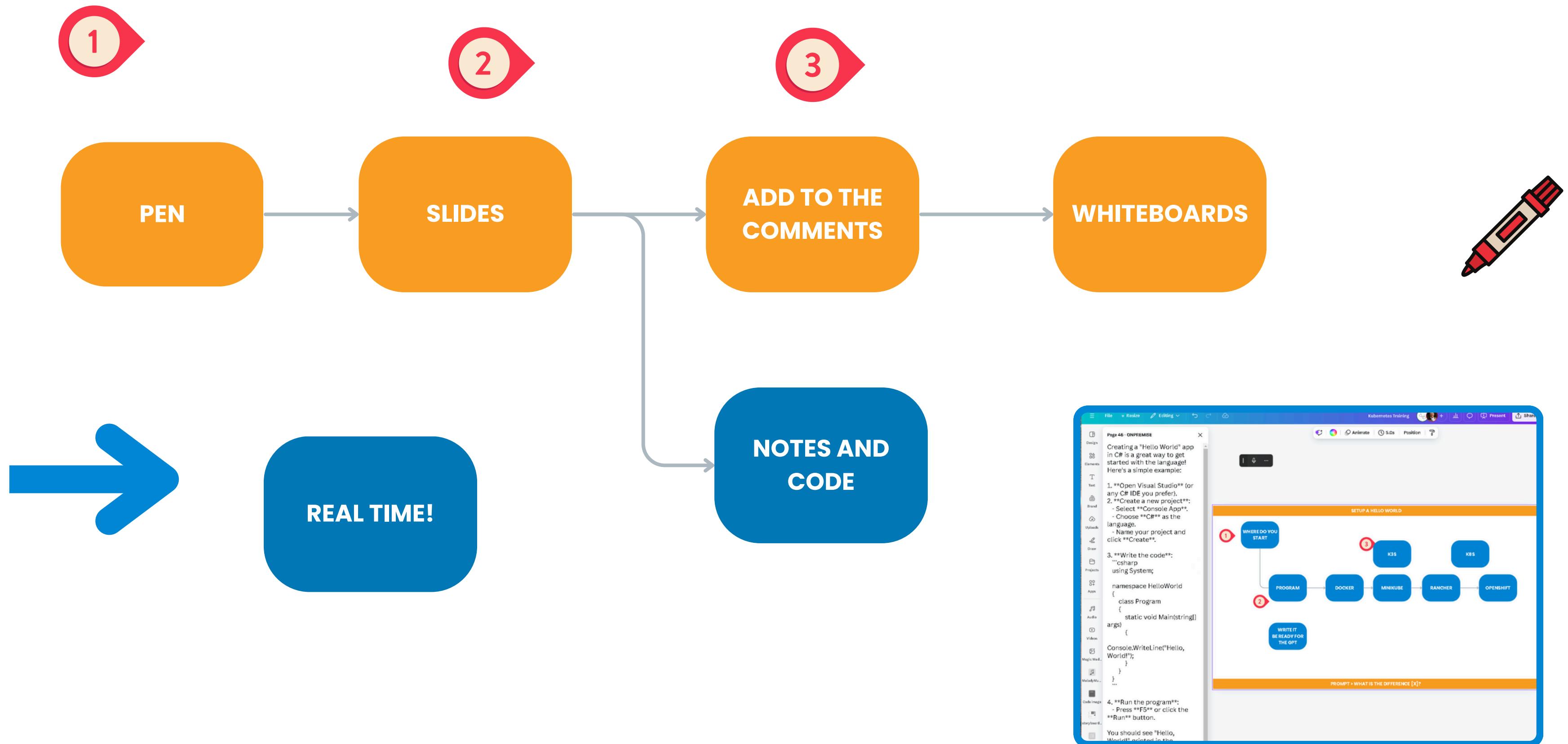
PROMPT > HOW DO I SETUP THESE >

SETUP





CANVA AND ELEMENTS



GIT – CODESPACES



**GIT
personal
accounts**

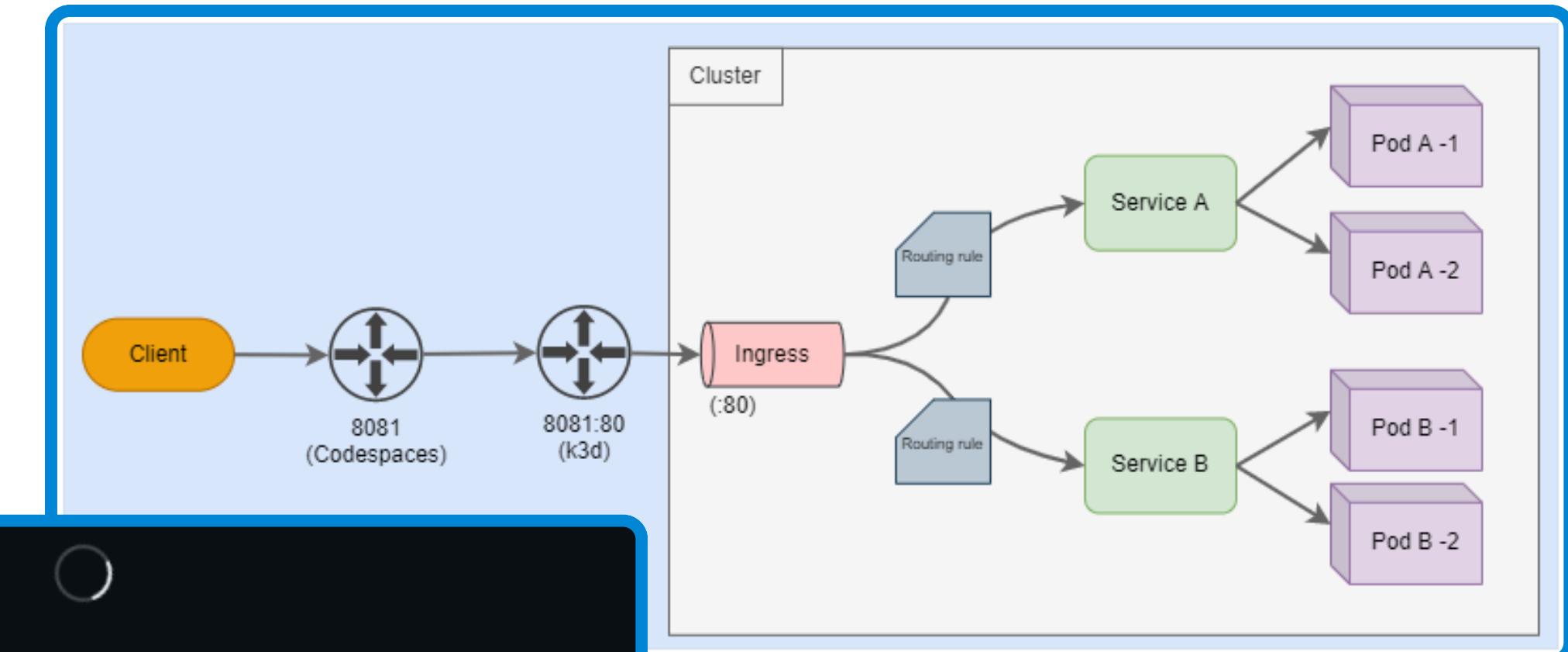
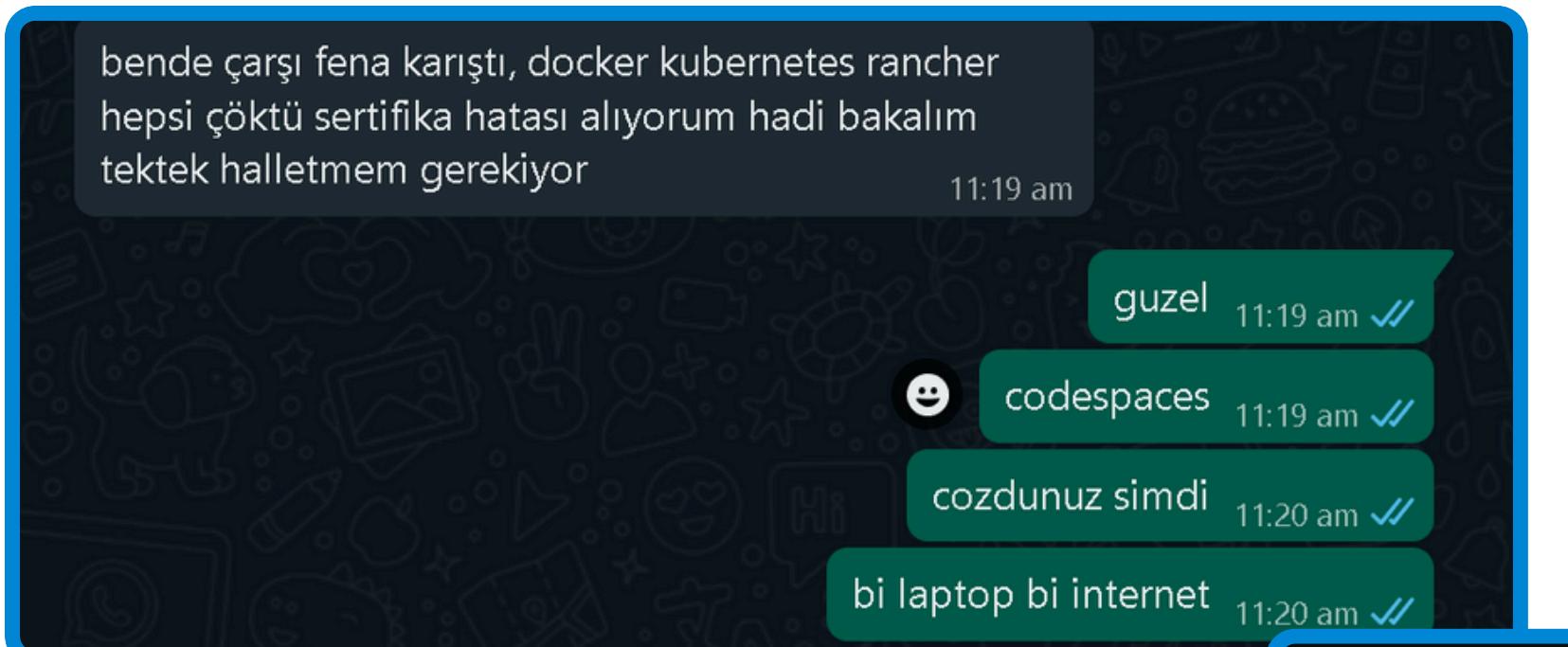


CODESPACES



FREE TIERS

WHITEBOARDS



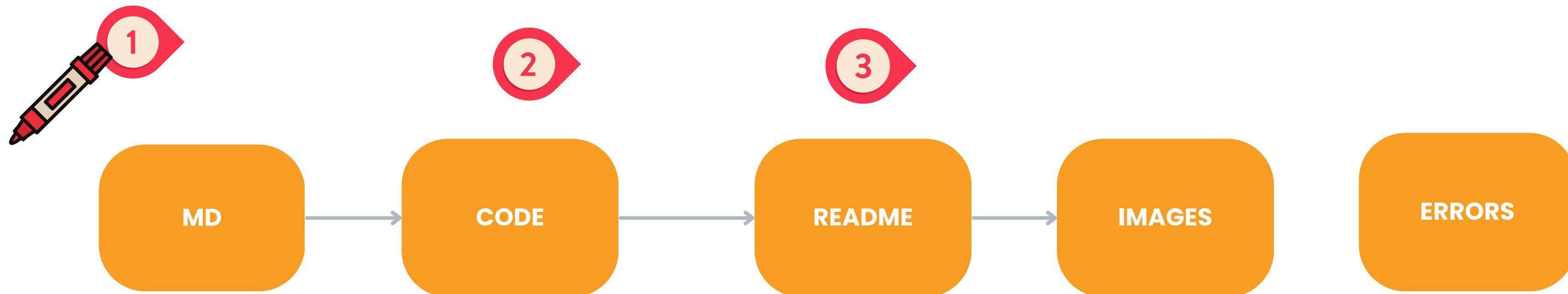
**GIT
hands on bash
/ powershell**

**YAML
MARKUP
TEST**

Upgrading your account to GitHub Pro

This may take a while.

GIT - FOLDERS



RANCHERONCODESPACES [CODESPACES: URBAN C...]

Markdown

commands.md

README.md

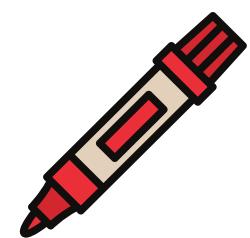
```
1 sudo apt-get update
2 sudo apt-get install -y docker.io
```

Markdown > commands.md > # Docker install

```
1 * Docker install
2 sudo apt-get update
3 sudo apt-get upgrade
4 sudo apt-get -f install
5 sudo apt-get install containerd
6 sudo apt-get install -y docker.io
```

PROMPT > HOW DO I USE [GIT] FOR MY CODESPACES ?

GIT - commit all the time!



The screenshot shows the GitHub Codespaces extension page in the Microsoft Store. It includes the extension's logo, name, rating, and a brief description: "GitHub Codespaces provides cloud-hosted development environments for any activity - whether it's a long-term project, or a short-term task like reviewing a pull request. You can connect to Codespaces from Visual Studio Code or a browser-based editor that's accessible anywhere." It also features a "Watch on YouTube" button and a "Getting Started" section.

LOCAL
EXTENSION

The screenshot shows the GitHub Codespaces interface within Visual Studio Code. The title bar reads "RancherOnCodeSpaces [Codespaces: urban capybara]". The left sidebar shows "SOURCE CONTROL" with a "docker install" entry and a green "Commit" button. The main area displays files: README.md, [Preview] README.md, commands.md, and error-docker-install.md. The "commands.md" file is open, showing Docker installation commands. A context menu is open over the "commands.md" file, with "Commit & Push" highlighted. The status bar at the bottom shows terminal output related to Docker installation.

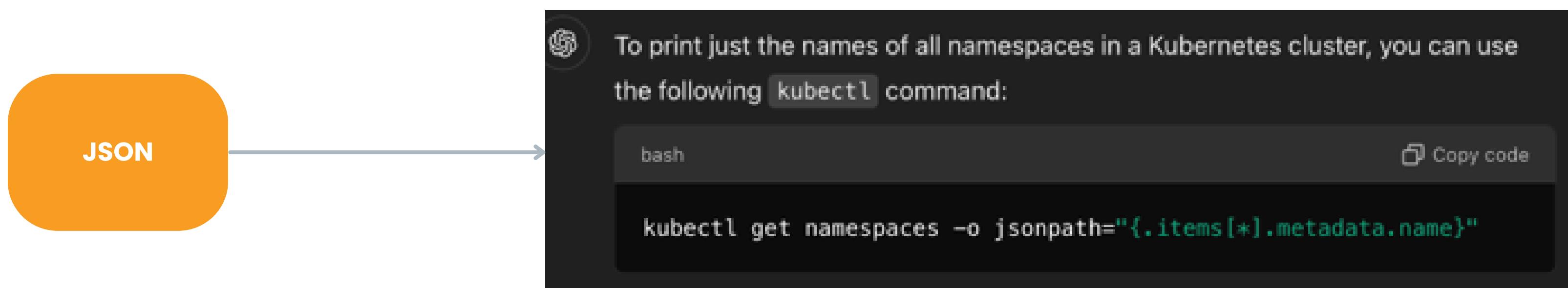
CORP VERSION

3

PROMPT > HOW DO I USE [GIT] FOR MY CODESPACES ?



```
apiVersion: v1
kind: Secret
metadata:
```





 Datalligence AI.



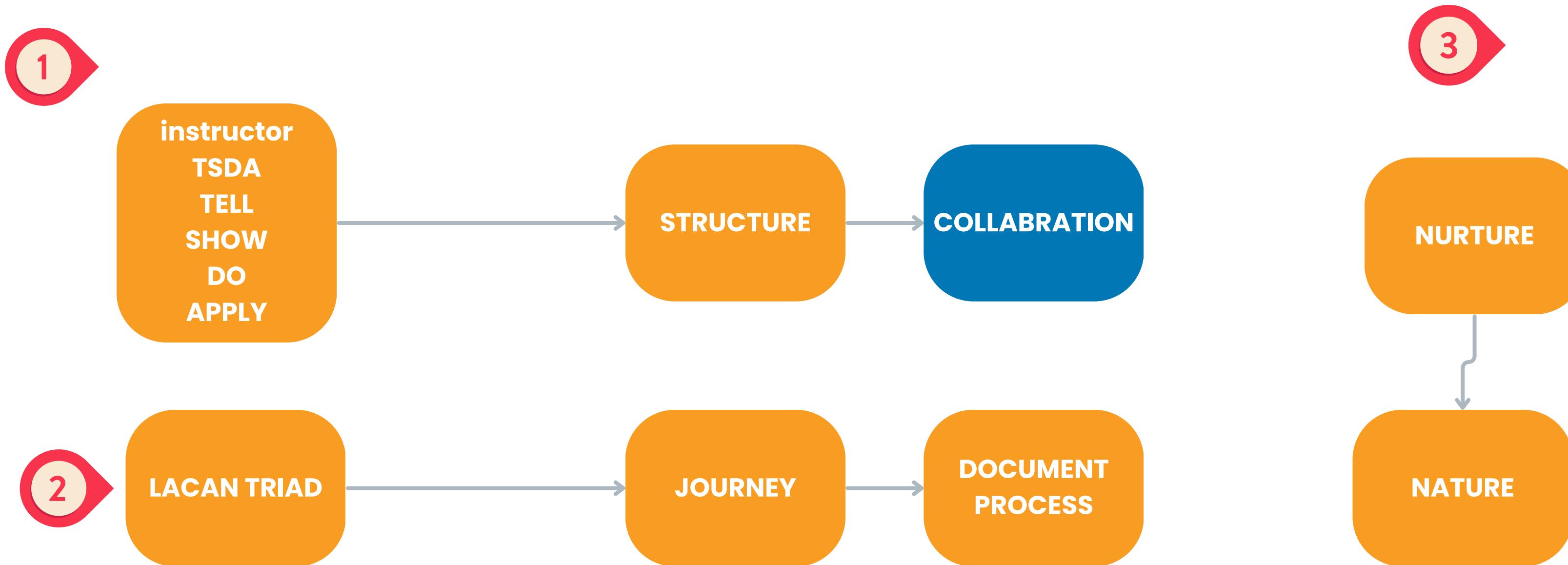
Measure
What
Matters

How Google, Bono, and the Gates Foundation Rock the World with OKRs

John Doerr

WITH A FOREWORD BY LARRY PAGE

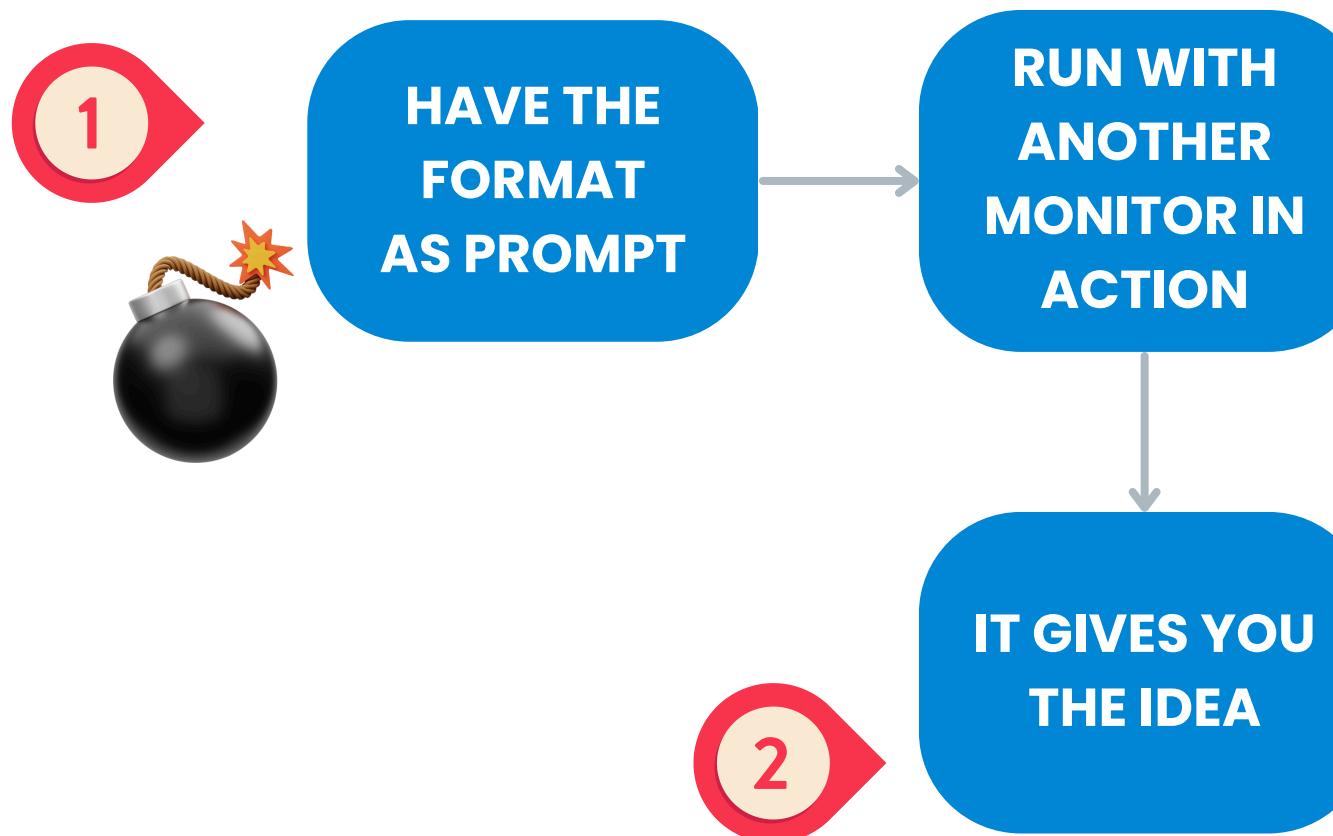
TRAINING



- Each day should start with a quick review of the previous day's concepts.
- Allocate time for Q&A sessions to address participants' queries.
- Encourage participants to work on mini-projects or exercises beyond the hands-on sessions to reinforce learning.

PROMPT > WHAT IS [X] HOW CAN I USE IT FOR MY SELFLEARNING ?

HOW DO I IMPROVE MY NATURE AND NURTURE ?



4. Apply

****Objective**:** Encourage learners to apply prompt engineering techniques in real-world contexts.

****Application Strategies**:**

- ****Real-World Projects**:**
 - Assign projects requiring the use of prompt engineering in real-world contexts, such as creating customer service bots, generating marketing

12

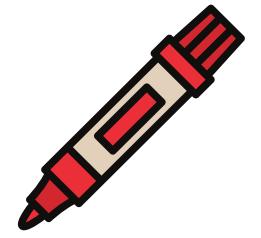
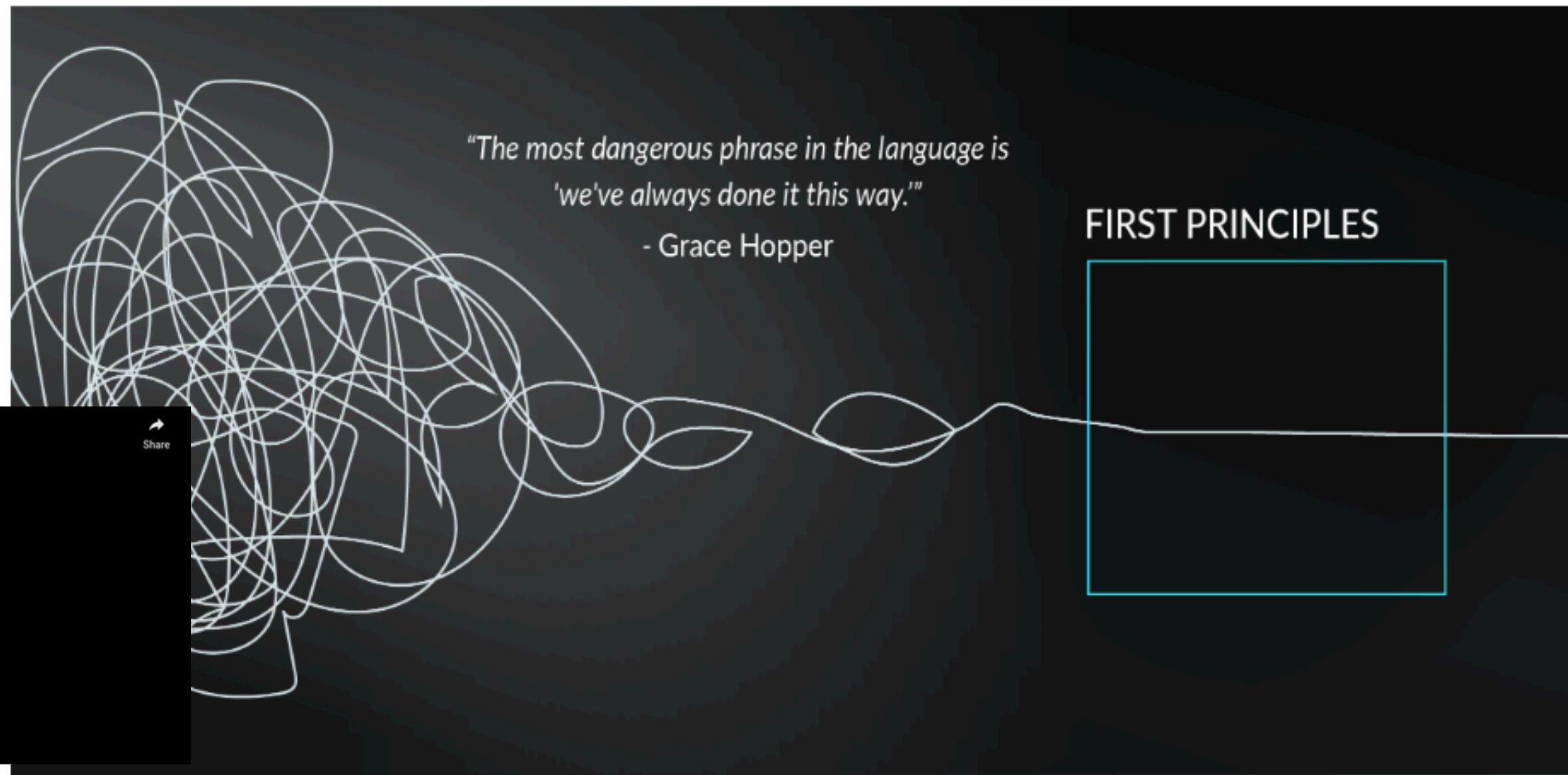
content, or developing educational tools.

- ****Continuous Improvement**:**
 - Encourage ongoing testing and refinement of prompts in personal or professional work. Provide resources for further learning and development.

3

FIRST PRINCIPLES

DIVERGE



CONVERGE

Elon Musk

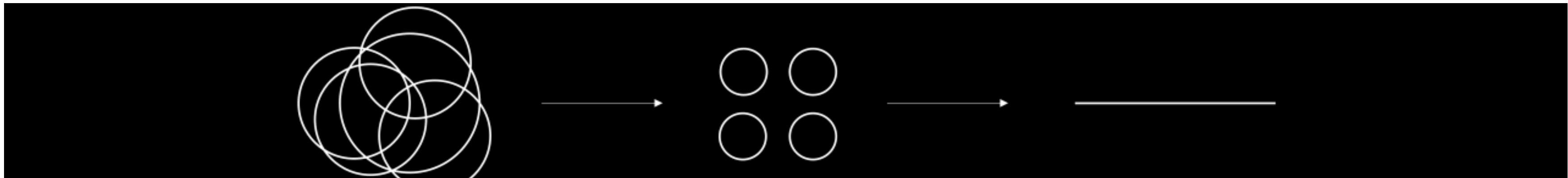
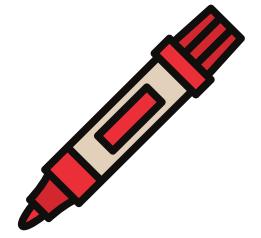
PROMPT > WHAT IS LACANS TIRAD ?

FIRST PRINCIPLES

$11 * 15$

$10 * 15 + 15$

1 6 5



DIVIDE

CONQUER

PROMPT > WHAT IS LACANS TIRAD ?

LACAN TRIAD

Jacques Lacan and the Imaginary-Symbolic-Real

! Video unavailable
Watch on YouTube

SEMBLANCE

OPSHIFT
RANCHER

Symbolic



11*15 > gpt

MODERN

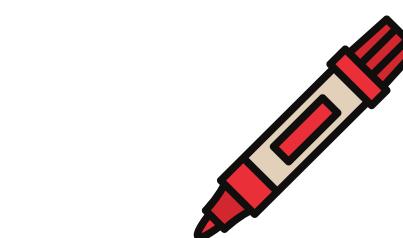
START

TRAINING

K8S

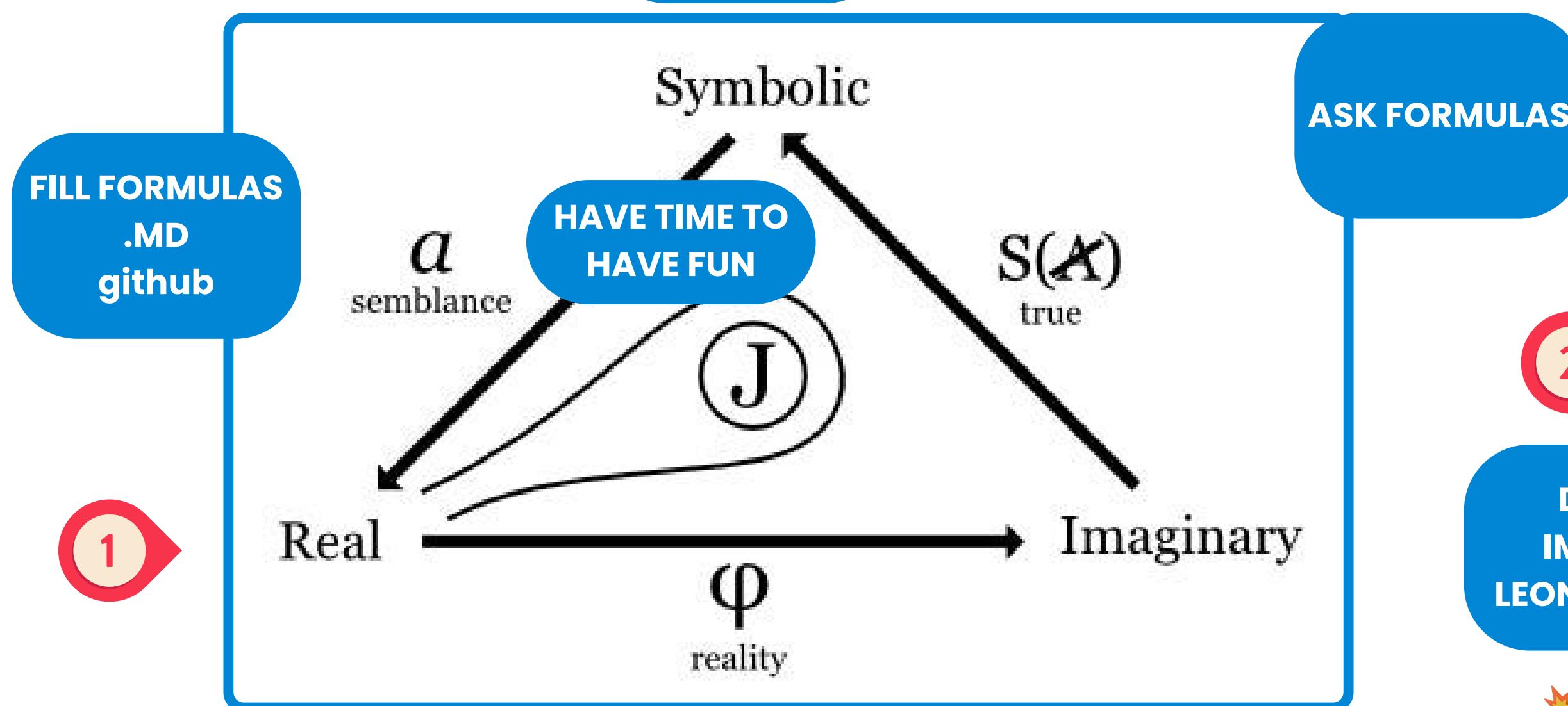
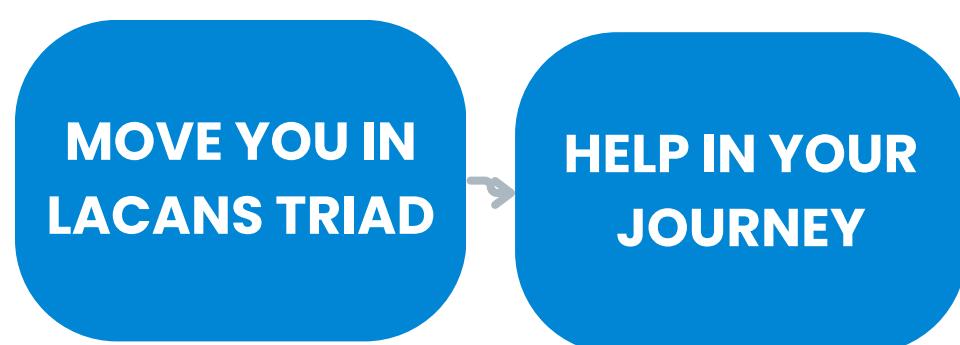
Real

φ
reality

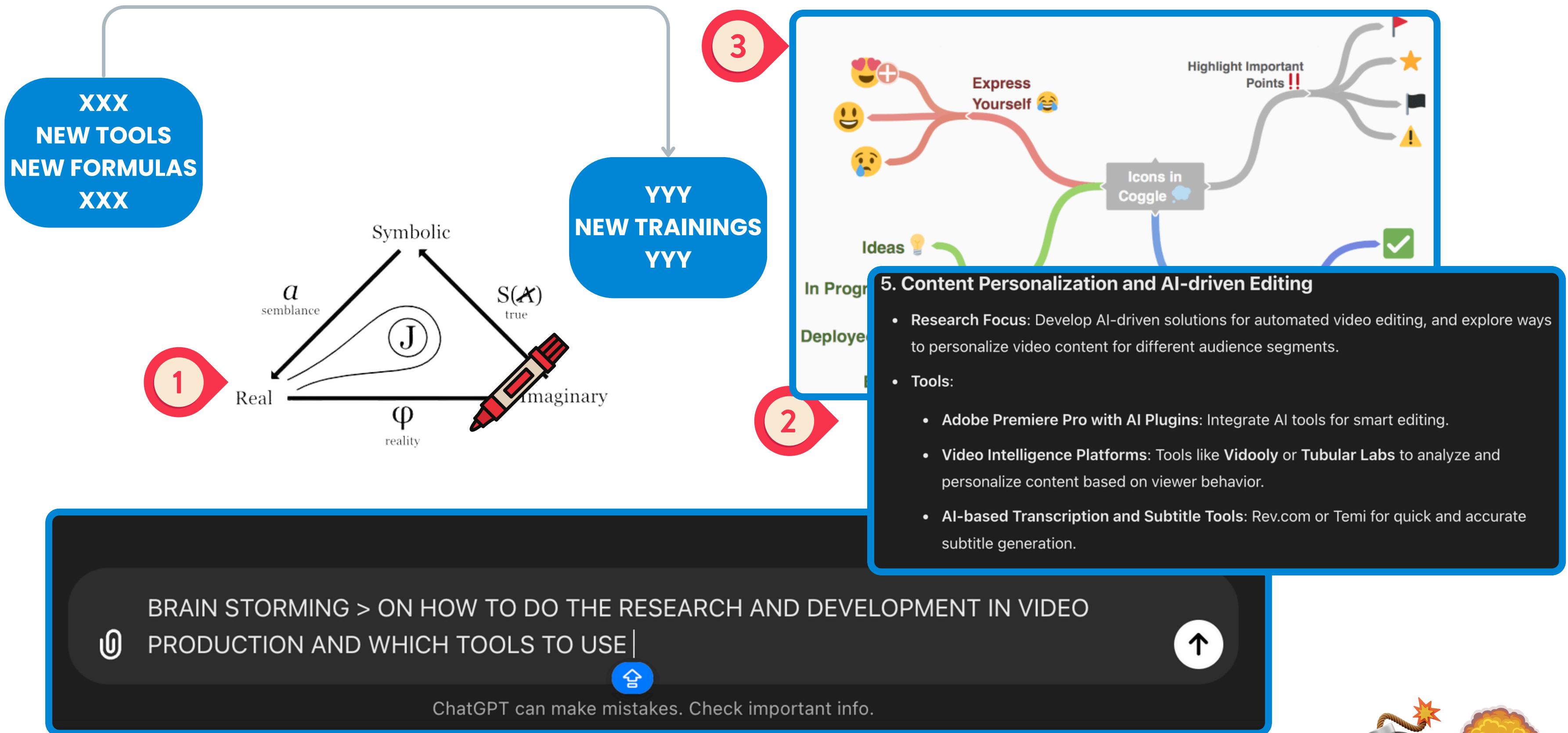


PROMPT > WHAT IS LACANS TIRAD ?

USEFULNESS



BRAIN STORMING WITH GPT



PROMPT > WHAT WHEN HOW WHY WHERE XXX ?



BLOOMS TAXONOMY MOVE ALONG

START SIMPLE

**GO TO A
COMPLX LEVEL
EVALUATE**

1

Combining parts to make a new whole

Create



2

Judging the value of information or ideas

Evaluate



3

Breaking down information into component parts

Analyze



Applying the facts, rules, concepts, and ideas

Apply



Understanding what the facts mean

Understand



Recognizing and recalling facts

Remember

To print "Hello, World!" in Python, you can use the following single line of code:

```
python  
print("Hello, World!")
```

This code will output the text "Hello, World!" when executed.



Python

Python is known for its simplicity and readability. The "Hello, World!" program in Python is straightforward:

```
python  
print("Hello, World!")
```

- Execution: This single line of code is all you need. Python is an interpreted language, so you can run this directly in a Python interpreter or script.
- Simplicity: Python emphasizes simplicity and minimalism, which is why the syntax is very clean.

Go (Golang)

Go is a statically typed, compiled language designed for simplicity and efficiency. Here's how you write "Hello, World!" in Go:

```
go  
package main  
  
import "fmt"  
  
func main() {  
    fmt.Println("Hello, World!")  
}
```

Setup. You need to define a `main` package and import the `fmt` package.

Go emphasizes clarity with explicit package imports and a simple syntax.

Python - The 🐍 of Simplicity:

```
python  
print("Hello, World!")
```

- Tip: Think of Python 🐍 as a simple snake that just spits out the message directly—quick and easy! 🐍 ➡️ 🎉

```
using System;  
  
class Program  
{  
    static void Main()  
    {  
        Console.WriteLine("Hello, World!");  
    }  
}
```

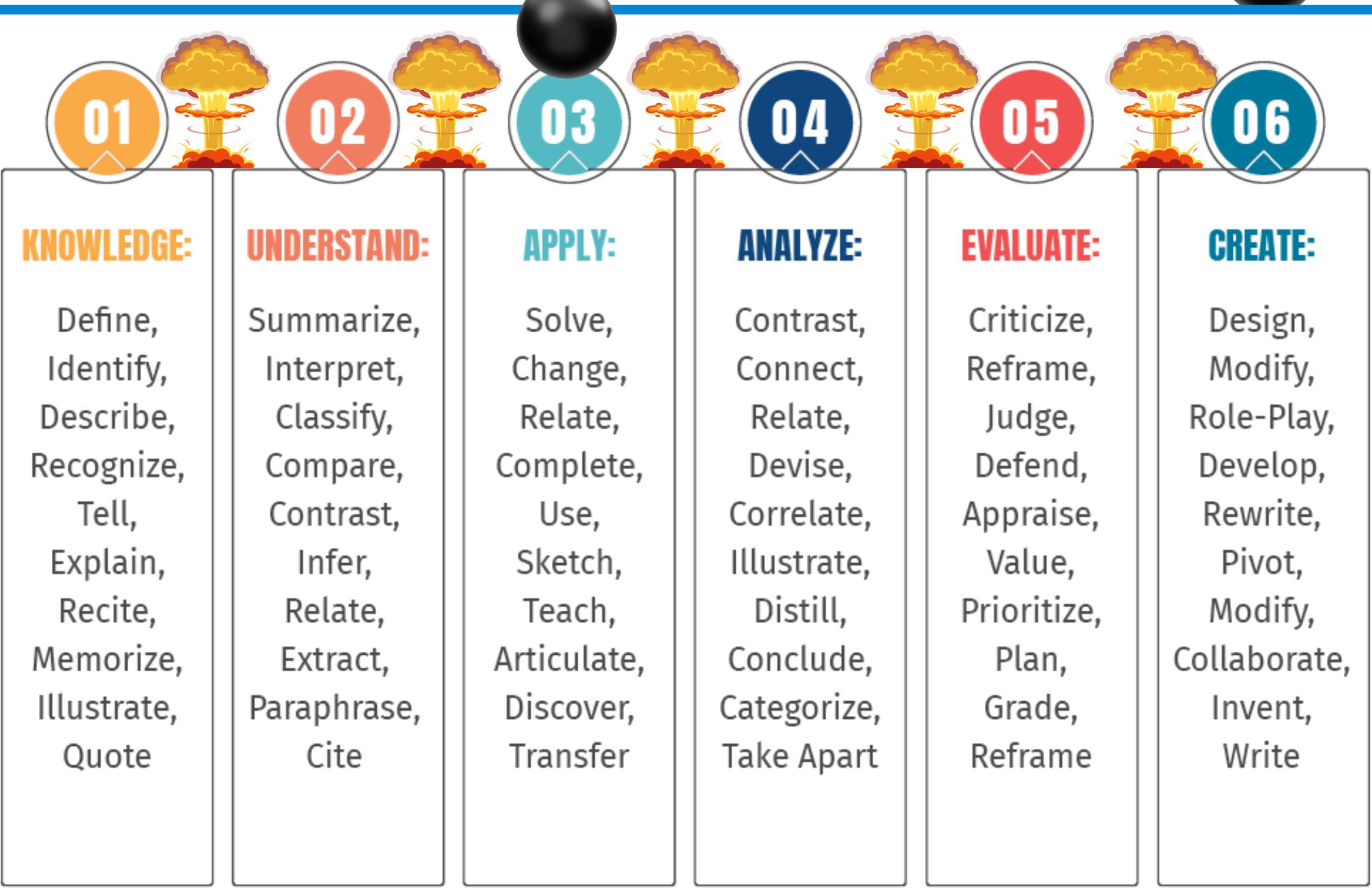
Execution: C# also requires more structure, with a class and a `Main` method, which serves as the entry point of the program.

Structure: Like Go, C# is more verbose than Python, but this verbosity supports its strong type system and object-oriented features.

MULTI STAGES

PARAMETERS AND TOKENS

1

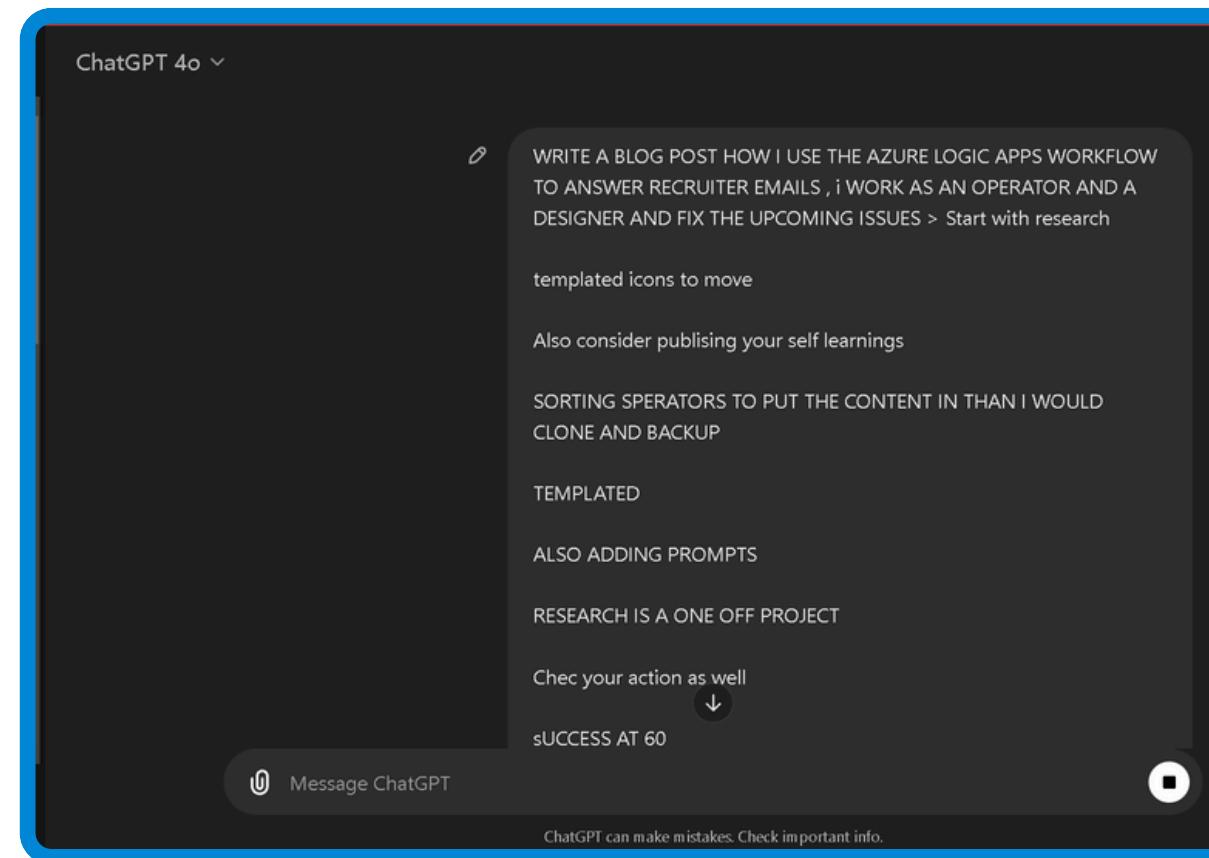


2

PROMPT > HOW DOES GPT EFFECT IN OUR LIFE DIFFERENT LEVELS OF BLOOMS TAXONOMY OF SELF LEARNING ?

1

QUESTIONS AS
A STARTING
POINT



TRY TO HELP
ONE PERSON >

USE
MARKDOWN
FOLDER
STRUCTURE

HAVE THE
STORY READY

2

GO TO THE TOOL

How I Use Azure Logic Apps Workflow to Automate Recruiter Email Responses

As someone who juggles multiple roles as an **operator** and **designer**, my daily routine often involves handling upcoming issues, troubleshooting, and making sure that everything runs smoothly. Recently, I've started using Azure Logic Apps to streamline one of the more repetitive tasks I face—answering recruiter emails. While this might seem like a simple task, it can be time-consuming and prone to errors, especially when managing multiple opportunities at once. Here's how I went about automating this process, the lessons I learned, and how I made it work efficiently for my specific needs.

Before: The Manual Process

3

FIX IT MAKE IT
USEFUL



1

How to Set Up Rancher on GitHub CodeSpaces: A Step-by-Step Guide

If you're exploring ways to efficiently manage Kubernetes clusters, Rancher is a powerful solution. But setting it up can sometimes be a bit tricky. In this guide, we'll walk through the process of setting up Rancher within GitHub CodeSpaces, enabling you to spin up and manage Kubernetes clusters seamlessly!

What You'll Need:

- A GitHub Account with CodeSpaces enabled.
- Basic knowledge of Kubernetes and Docker.
- A Rancher image (We'll pull the latest one).

Step 1: Create a New GitHub Repository

- Go to your GitHub Dashboard.
- Click on New Repository and name it something relevant like rancher-on-codespaces.
- Choose the repository settings as per your preference and initialize it with a README file.

learn to write
the story

2

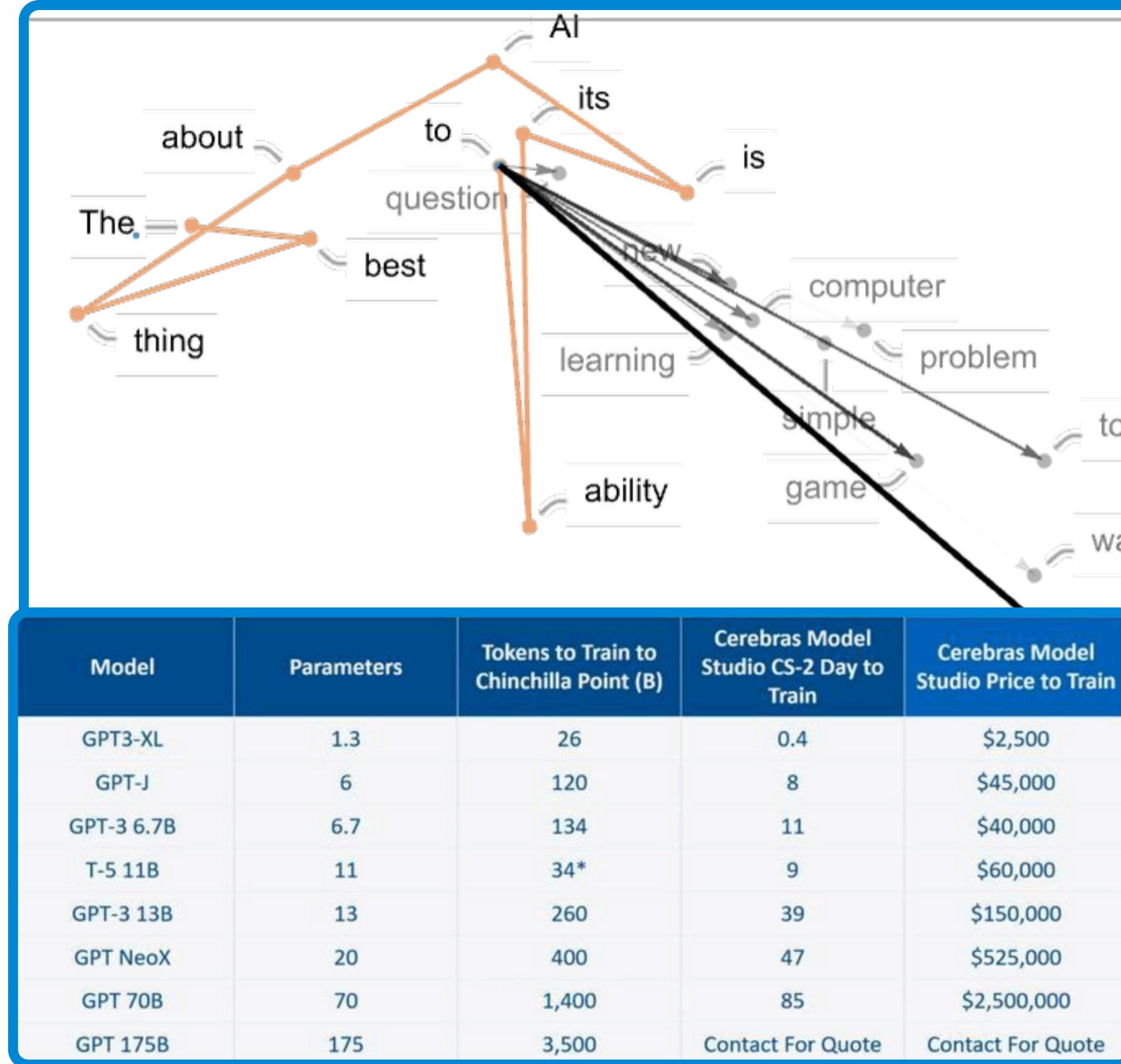
GO TO THE TOOL



3

FIX IT MAKE IT
USEFUL

1



2

Prompt Engineering Steps

- 1 Understand the task
- 2 Write the prompt
- 3 Test and evaluate the prompt
- 4 Refine the prompt
- 5 Iterate

llmnanban.akmmusai.pro

MD

BIG CORPS TO CREATE THEM

3

MARKDOWN
MAKE IT READY

GO TO THE TOOL

SIGNUP PROCESS

1

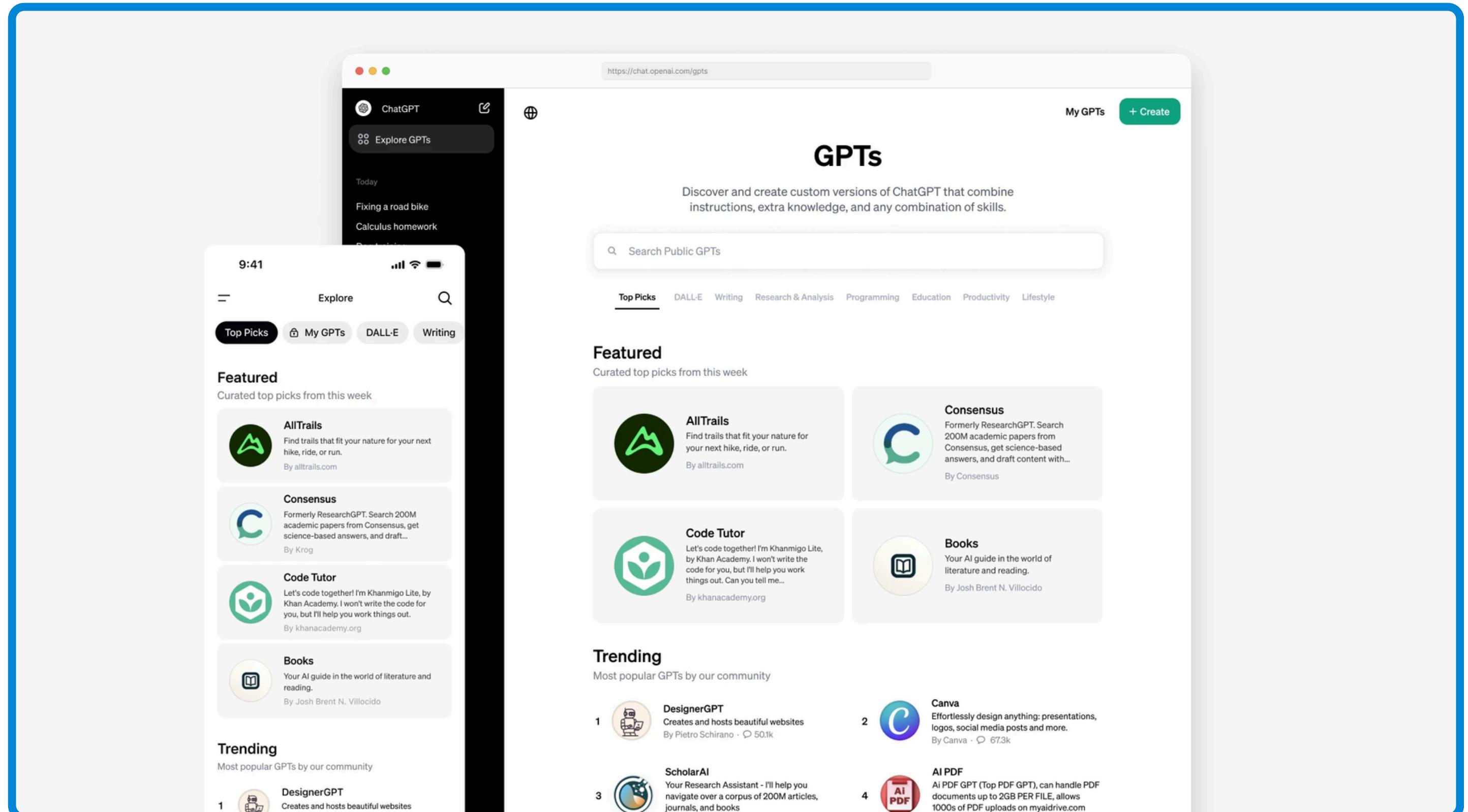
Visit [OpenAI ChatGPT] (<https://chat.openai.com>).

2

PROMPT
HELPERS TO BE
USED

3

free accounts
to be used



The screenshot shows the 'GPTs' interface on the OpenAI website. At the top, there's a mobile device mockup showing the ChatGPT app with a conversation history. Below it, the main page has a header 'GPTs' and a sub-header 'Discover and create custom versions of ChatGPT that combine instructions, extra knowledge, and any combination of skills.' A search bar 'Search Public GPTs' is present. The 'Top Picks' tab is selected, showing cards for various GPTs like AllTrails, Consensus, Code Tutor, and Books. Below this, sections for 'Featured' (curated top picks) and 'Trending' (most popular GPTs by community) are shown, each with four cards. The 'Featured' section includes AllTrails, Consensus, Code Tutor, and Books. The 'Trending' section includes DesignerGPT, Canva, ScholarAI, and AI PDF.

ChatGPT

Explore GPTs

Today

Fixing a road bike

Calculus homework

Books

9:41

Explore

Top Picks My GPTs DALL-E Writing

Featured

Curated top picks from this week

AllTrails Find trails that fit your nature for your next hike, ride, or run. By alltrails.com

Consensus Formerly ResearchGPT. Search 200M academic papers from Consensus, get science-based answers, and draft content with... By Krog

Code Tutor Let's code together! I'm Khanmigo Lite, by Khan Academy. I won't write the code for you, but I'll help you work things out. By khanacademy.org

Books Your AI guide in the world of literature and reading. By Josh Brent N. Vilicido

Trending

Most popular GPTs by our community

1 DesignerGPT Creates and hosts beautiful websites By Pietro Schirano · 50.1k

2 Canva Effortlessly design anything: presentations, logos, social media posts and more. By Canva · 67.3k

3 ScholarAI Your Research Assistant - I'll help you navigate over a corpus of 200M articles, journals, and books

4 AI PDF Ai PDF GPT (Top PDF GPT), can handle PDF documents up to 2GB PER FILE, allows 1000s of PDF uploads on myaidrive.com

My GPTs + Create

GPTs

Discover and create custom versions of ChatGPT that combine instructions, extra knowledge, and any combination of skills.

Search Public GPTs

Top Picks DALL-E Writing Research & Analysis Programming Education Productivity Lifestyle

Featured

Curated top picks from this week

AllTrails Find trails that fit your nature for your next hike, ride, or run. By alltrails.com

Consensus Formerly ResearchGPT. Search 200M academic papers from Consensus, get science-based answers, and draft content with... By Consensus

Code Tutor Let's code together! I'm Khanmigo Lite, by Khan Academy. I won't write the code for you, but I'll help you work things out. Can you tell me... By khanacademy.org

Books Your AI guide in the world of literature and reading. By Josh Brent N. Vilicido

Trending

Most popular GPTs by our community

1 DesignerGPT Creates and hosts beautiful websites By Pietro Schirano · 50.1k

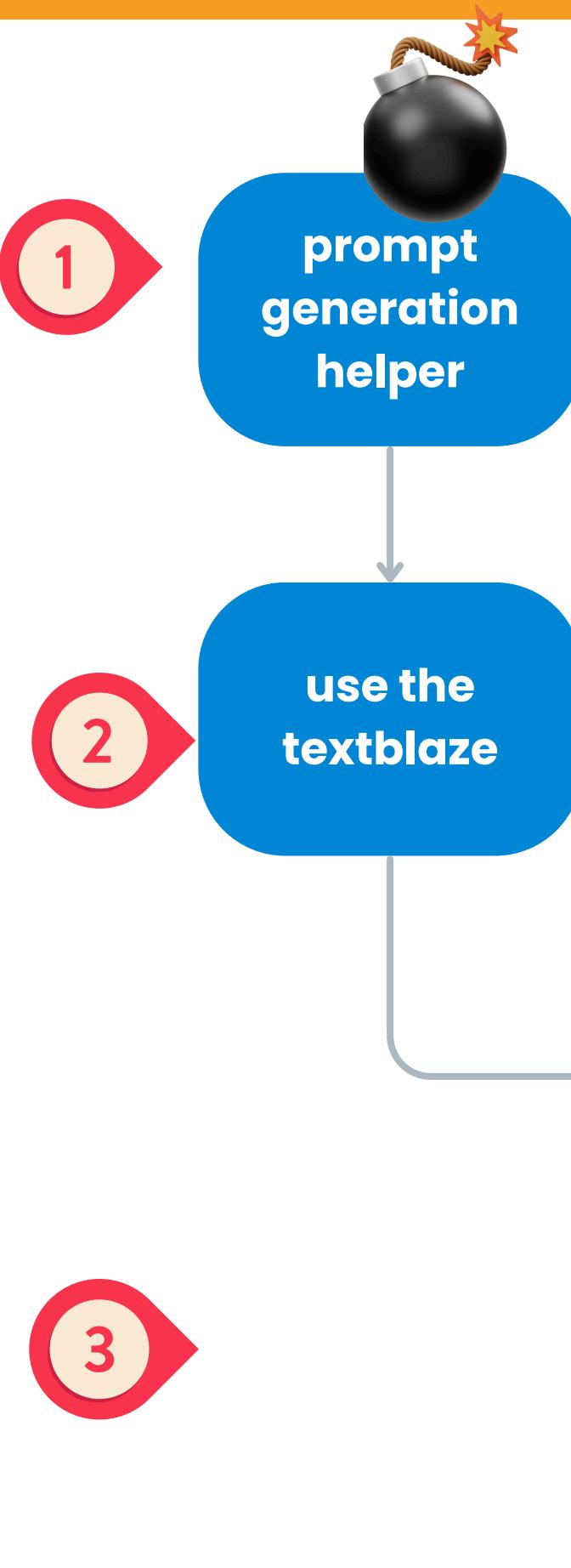
2 Canva Effortlessly design anything: presentations, logos, social media posts and more. By Canva · 67.3k

3 ScholarAI Your Research Assistant - I'll help you navigate over a corpus of 200M articles, journals, and books

4 AI PDF Ai PDF GPT (Top PDF GPT), can handle PDF documents up to 2GB PER FILE, allows 1000s of PDF uploads on myaidrive.com



HELPER PROMPTS



Here's a prompt you can use to generate the image:

Prompt:

"Create a detailed image of a DevOps SRE engineer at work, where the central focus is the engineer sitting at a computer, surrounded by a symbolic representation of their job's various aspects. The image is divided into four sections:

1. Top Left (Job): Show an organized and clean environment with an icon of a contract or document representing the responsibilities of the job. This area is structured and professional, symbolizing the tasks the engineer must handle.
2. Top Right (Pain): Depict a chaotic scene filled with a complex web of code, multiple warning symbols like exclamation marks, question marks, and red crosses. This area should feel cluttered and stressful, representing the challenges the engineer faces in remembering and performing required tasks.
3. Bottom Left (Gain): Illustrate a brighter, more positive environment where the engineer is finding the missing steps. Surround this area with symbols like light bulbs, checkmarks, and upward arrows to signify success and achievement after overcoming challenges.
4. Bottom Right (Implementation): Show the engineer in a methodical and productive setting, implementing new symbols and linting co ↓ This section should include visuals like gears turning,



LINTING COLORS

1



COLORS ARE
METADATA

2



GIVE TIME
MORE EMOTION
READ

3

REMEMBER AND
UNDERSTAND STAGE

ChatGPT 4o ▾

```
patchesStrategicMerge:  
  - patch-deployment.yaml
```

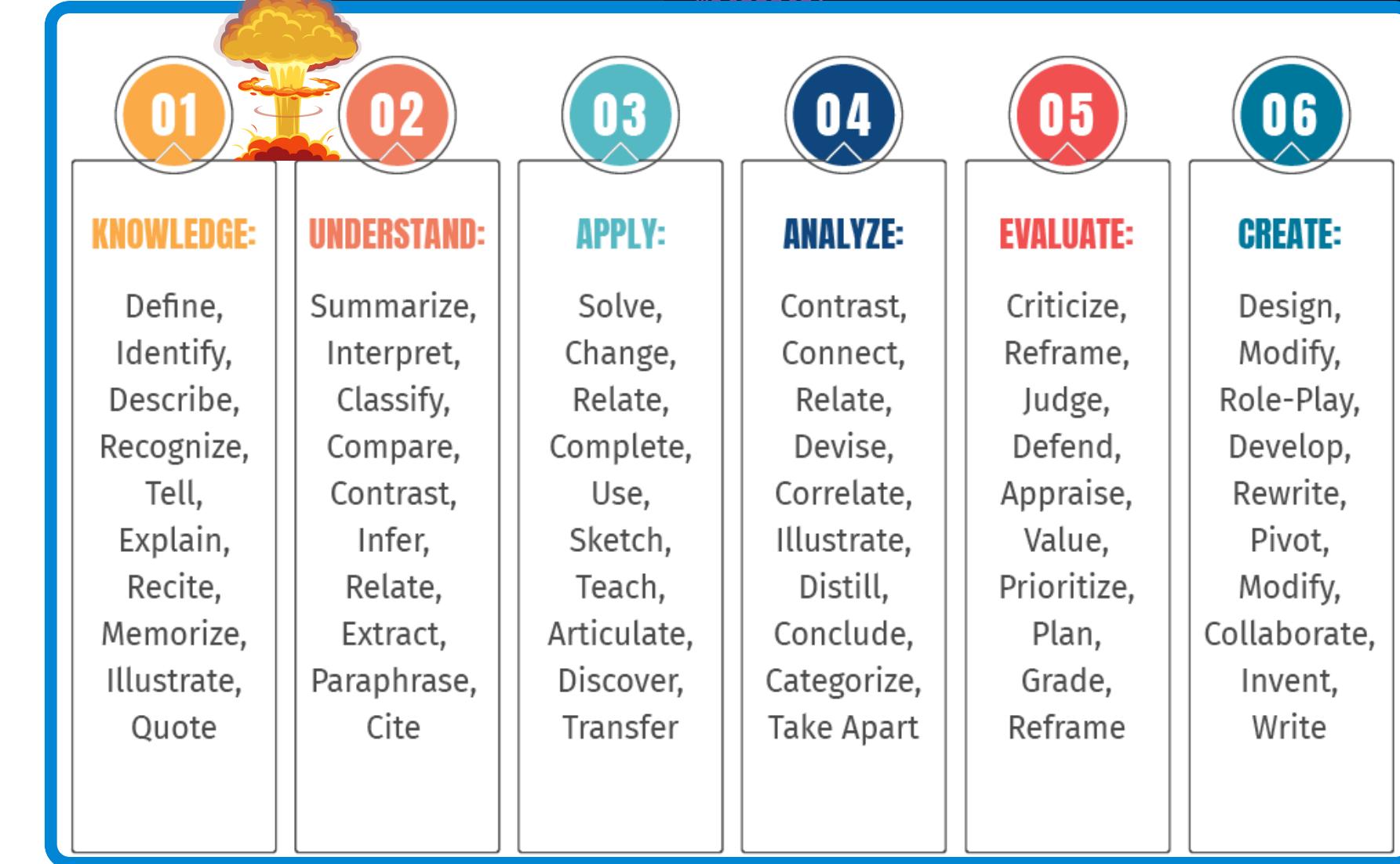
`overlays/dev/patch-deployment.yaml`

This file can override specific settings for the `dev` environment.

yaml

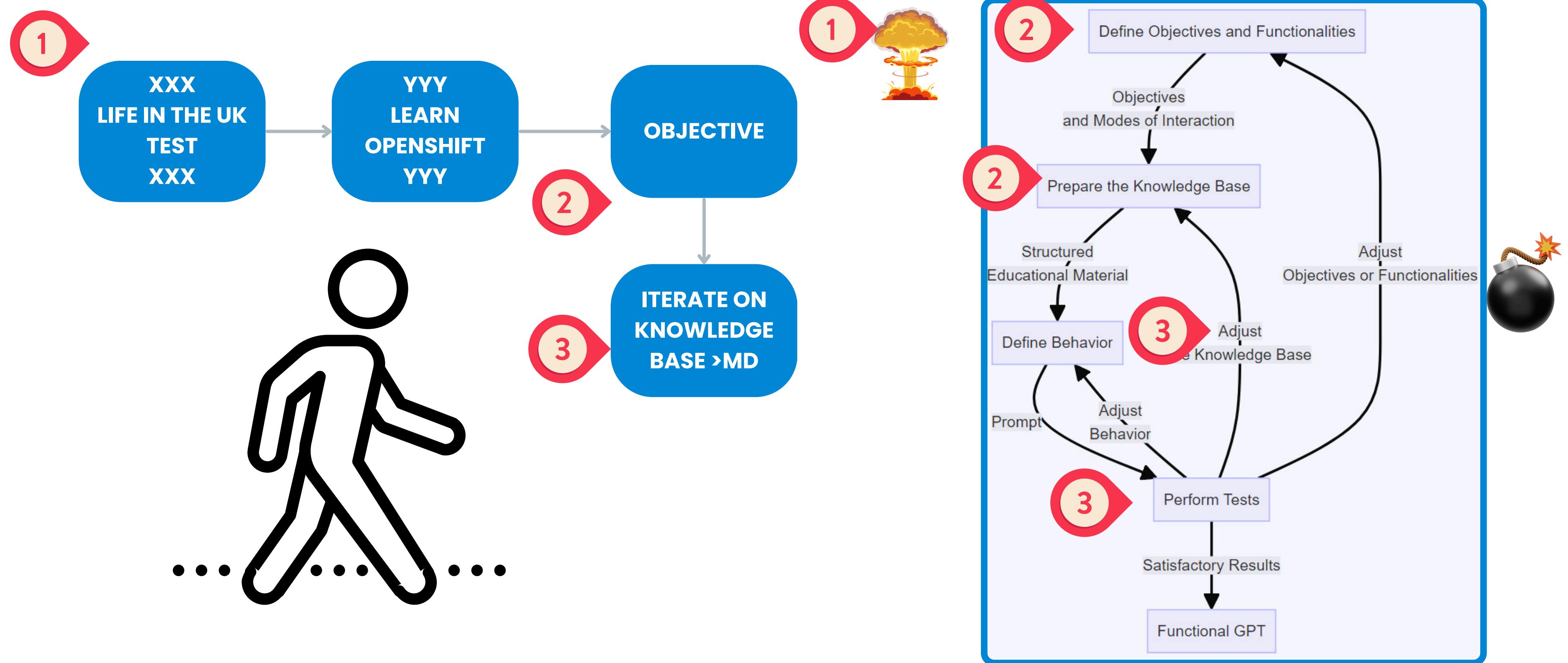
Copy code

```
apiVersion: apps.openshift.io/v1  
kind: DeploymentConfig  
metadata:
```



PROMPT ➤ WHEN WOULD LLM HIT THE LIMITS AND THERE IS NO VALUE IN TRAINING THEM ?

INTERACTION WITH GPT



PROMPT > WHAT SHOULD I KNOW ABOUT OPENSHIFT CLUSTER LETS PLAY A GAME AN GIVE ME CLUES / VISUAL

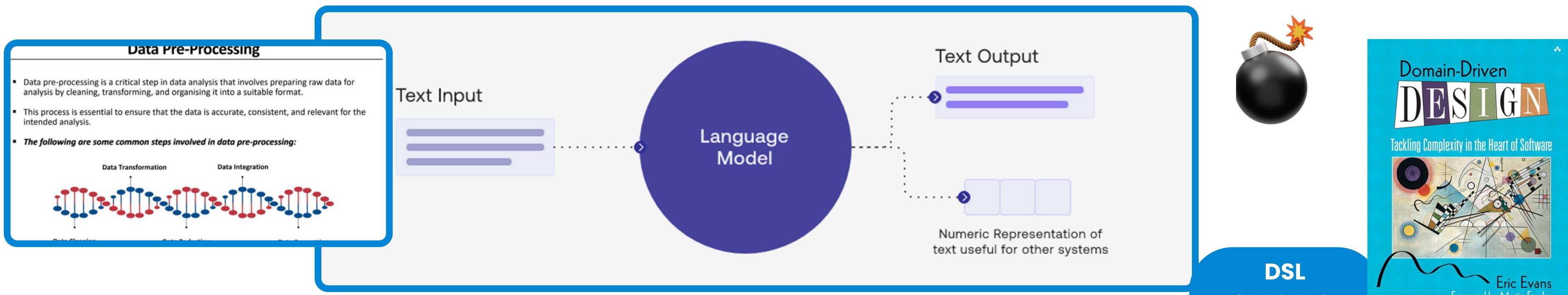
HOW LARGE LANGUAGE MODELS

1

XXX
NECESSARY
ASISTANT
XXX

YYY
HELP US IN
LACANS TRIAD
YYY

m shaped



2

XXX
googles key
value system
to real time
XXX

faster
iterations
needed to
increase tech
lower
everyones
skills gaps



TEXT BLAZE COMPLEX PROMPT

better prompts

1

you need more
to express what
you need

2



3

lacan images
at the start

>Create a digital color comic book style image, inspired by modern American comics, that illustrates the progression of human civilization toward the stars.

The scene should depict a futuristic human journey into space, with a focus on the advancement of skills and technology as civilization progresses.

The background should feature a detailed, imaginative world, lightly sketched with fine lines, and enhanced with shading to add depth and a 3D effect.

Use a color palette incorporating #0086D4 and #F89D21 to highlight key elements and create a dynamic visual contrast.

Dimensions: WIDTH:1420 HEIGHT:260



Label (describes the snippet)

CREATEIMAGE

Shortcut (typed to insert)

/createimage

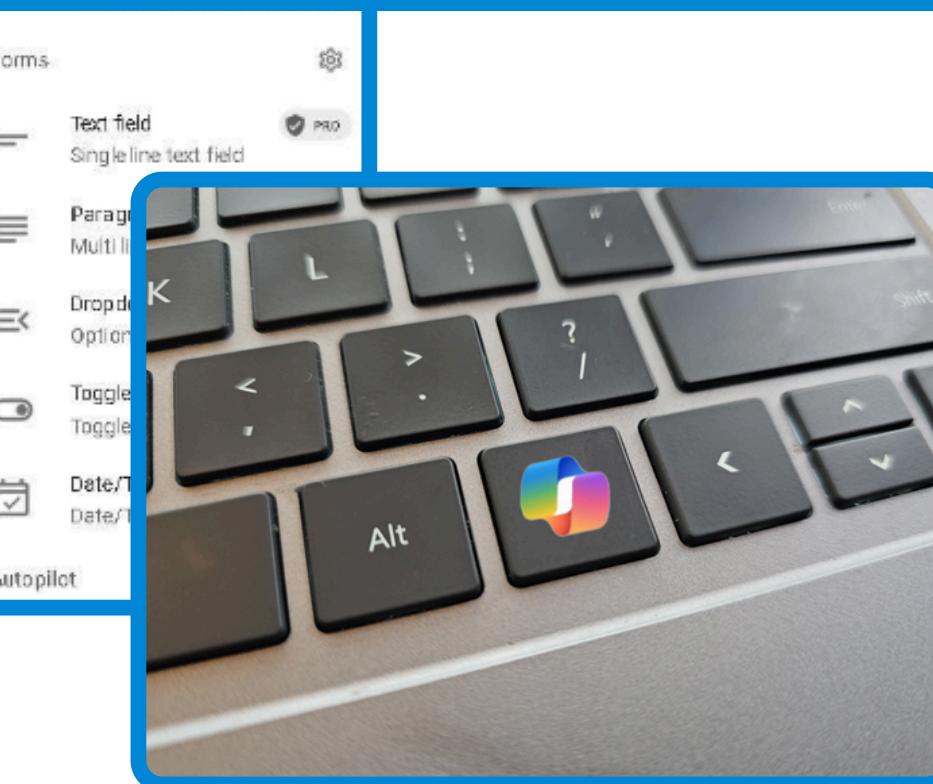
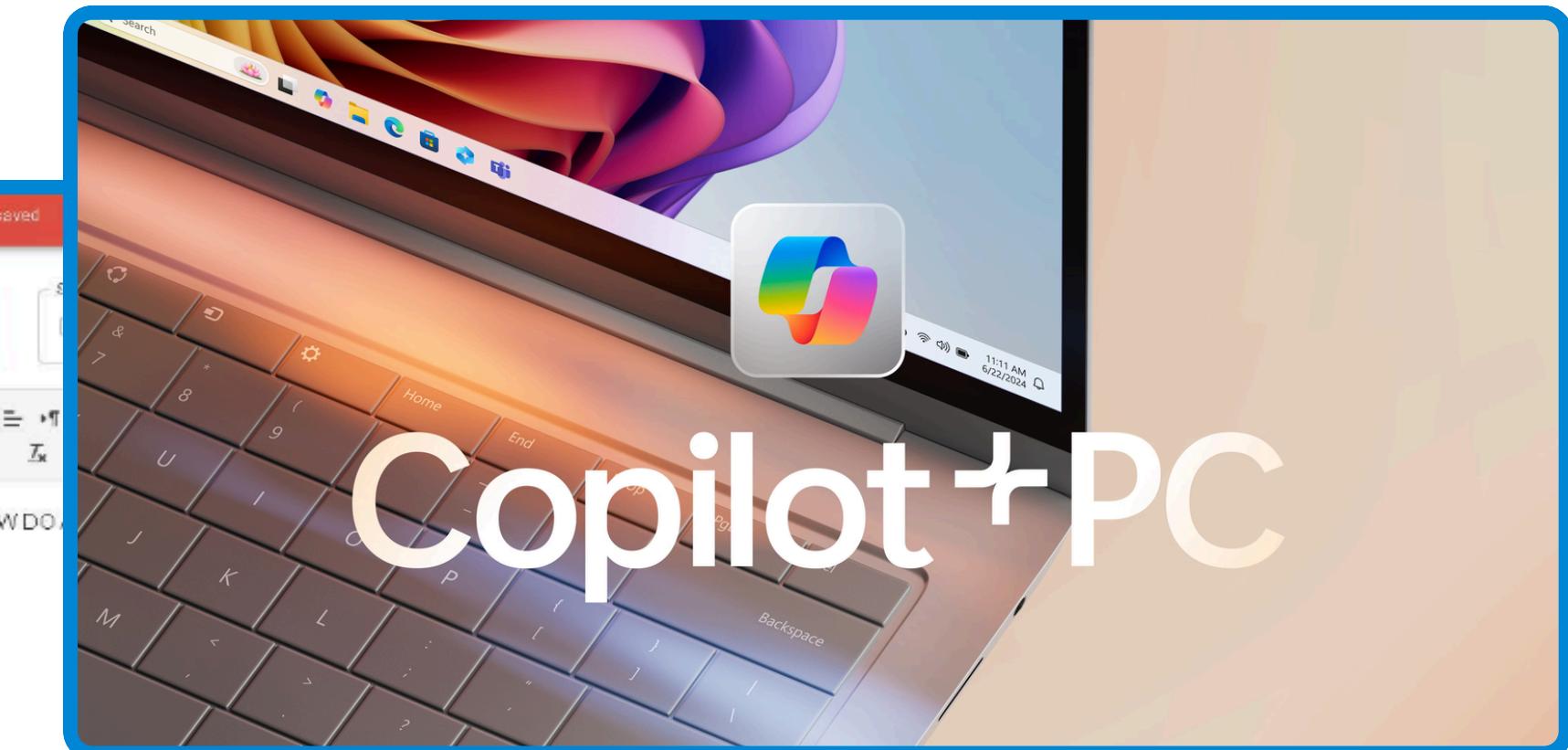
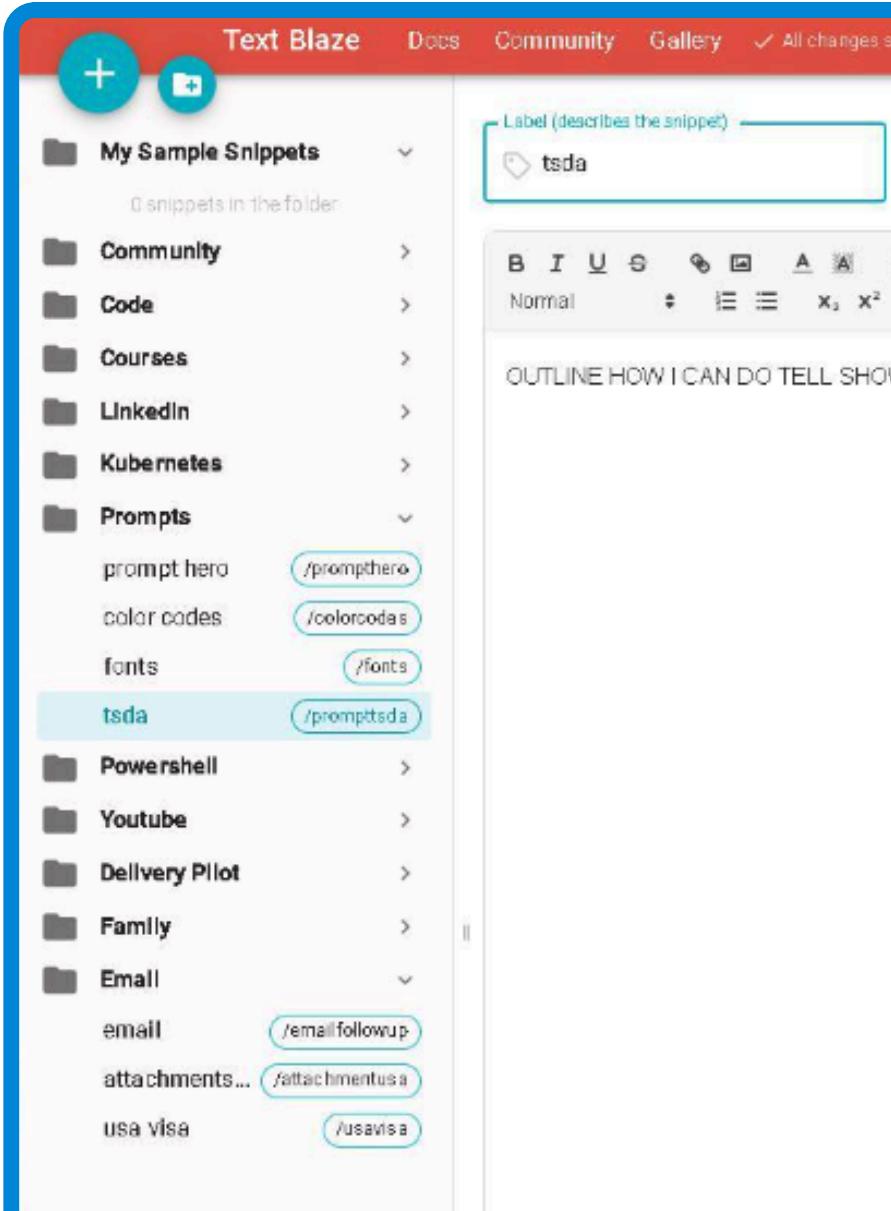
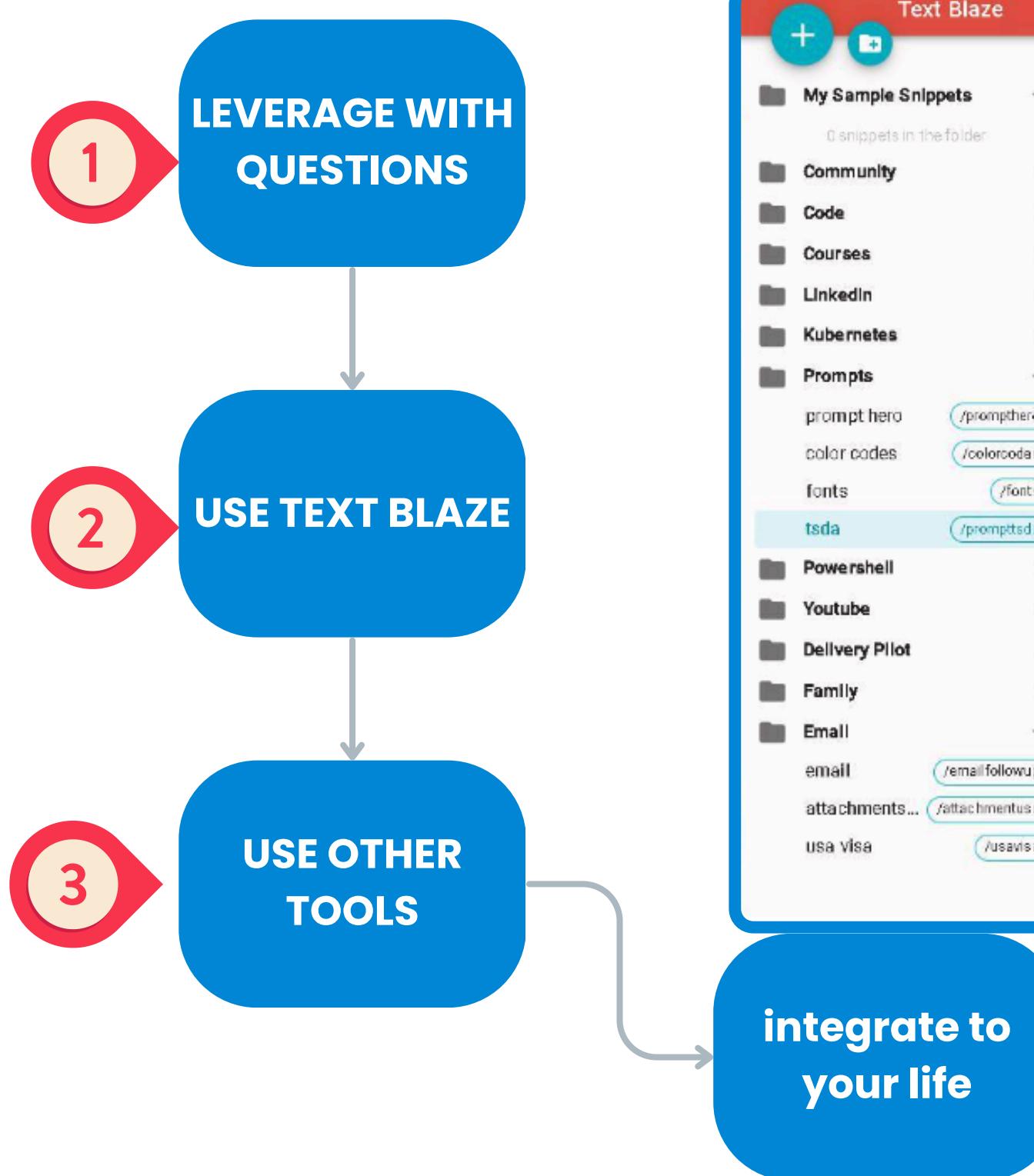
Try it out

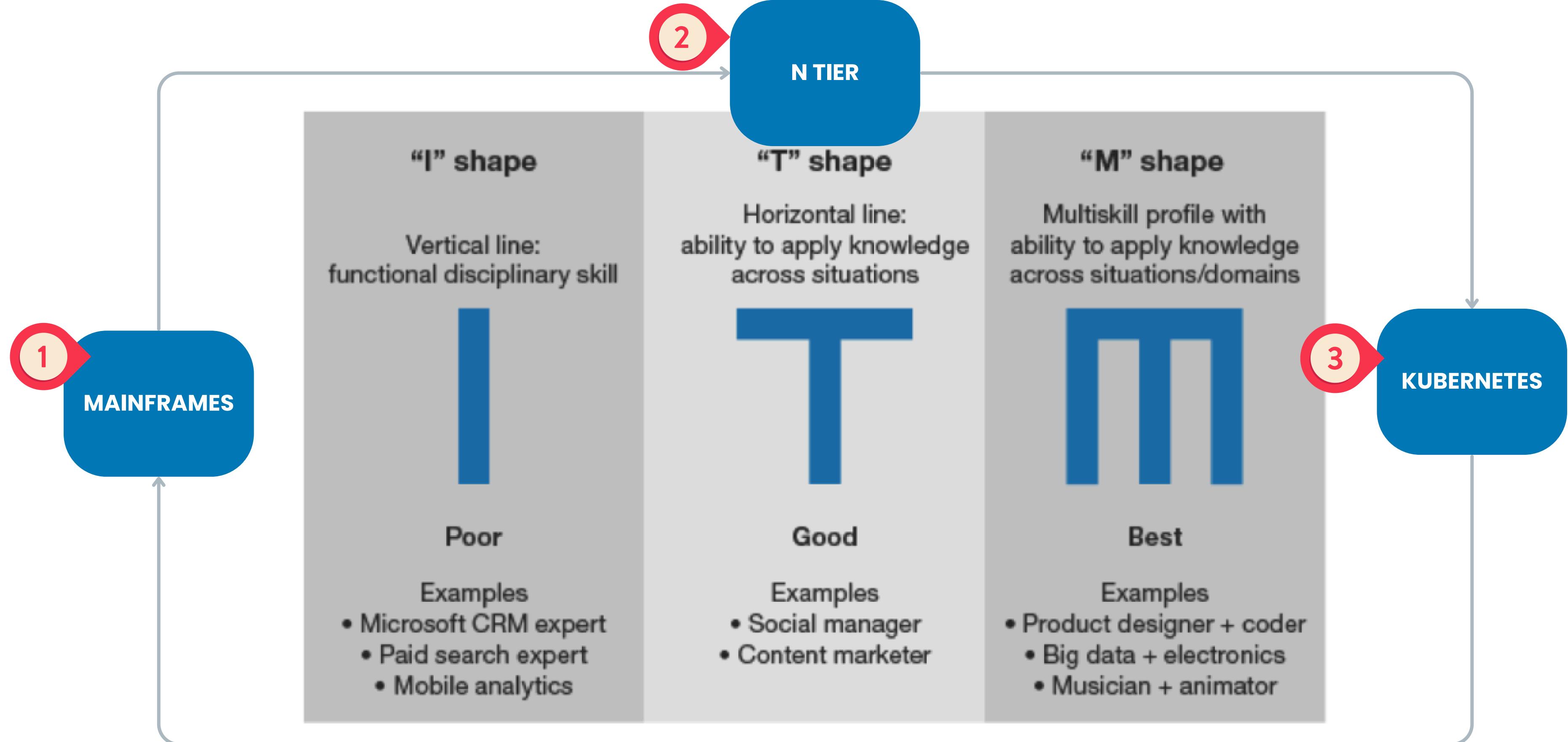
B I U S A Default

AI Write

Normal x_2 x^2 T_x

Create a digital color comic book style image,
Dimensions: WIDTH:1420 HEIGHT:260
inspired by modern American comics, that illustrates the progression of human civilization toward the stars.
The scene should depict a futuristic human journey into space, with a focus on the advancement of skills and technology as civilization progresses.
The background should feature a detailed, imaginative world, lightly sketched with fine lines, and enhanced with shading to add depth and a 3D effect.
Use a color palette incorporating #0086D4 and #F89D21 to highlight key elements and create a dynamic visual contrast.





PROMPT > WHAT IS M SHAPED AND HOW CAN I LEVERAGE IT ?

M SHAPED

CODE OPERATE

I-SHAPED PROFILES

DEEP KNOWLEDGE IN
ONE AREA



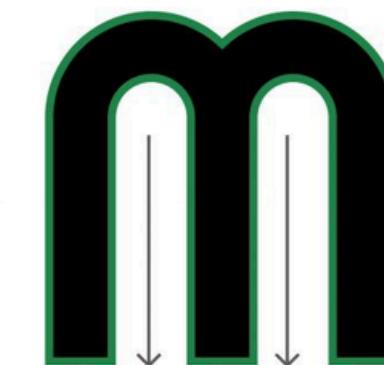
T-SHAPED PROFILES

SHALLOW KNOWLEDGE IN A
BROAD RANGE OF AREAS



M-SHAPED PROFILES

SHALLOW KNOWLEDGE IN A
BROAD RANGE OF AREAS



time changes

1



9 to 5

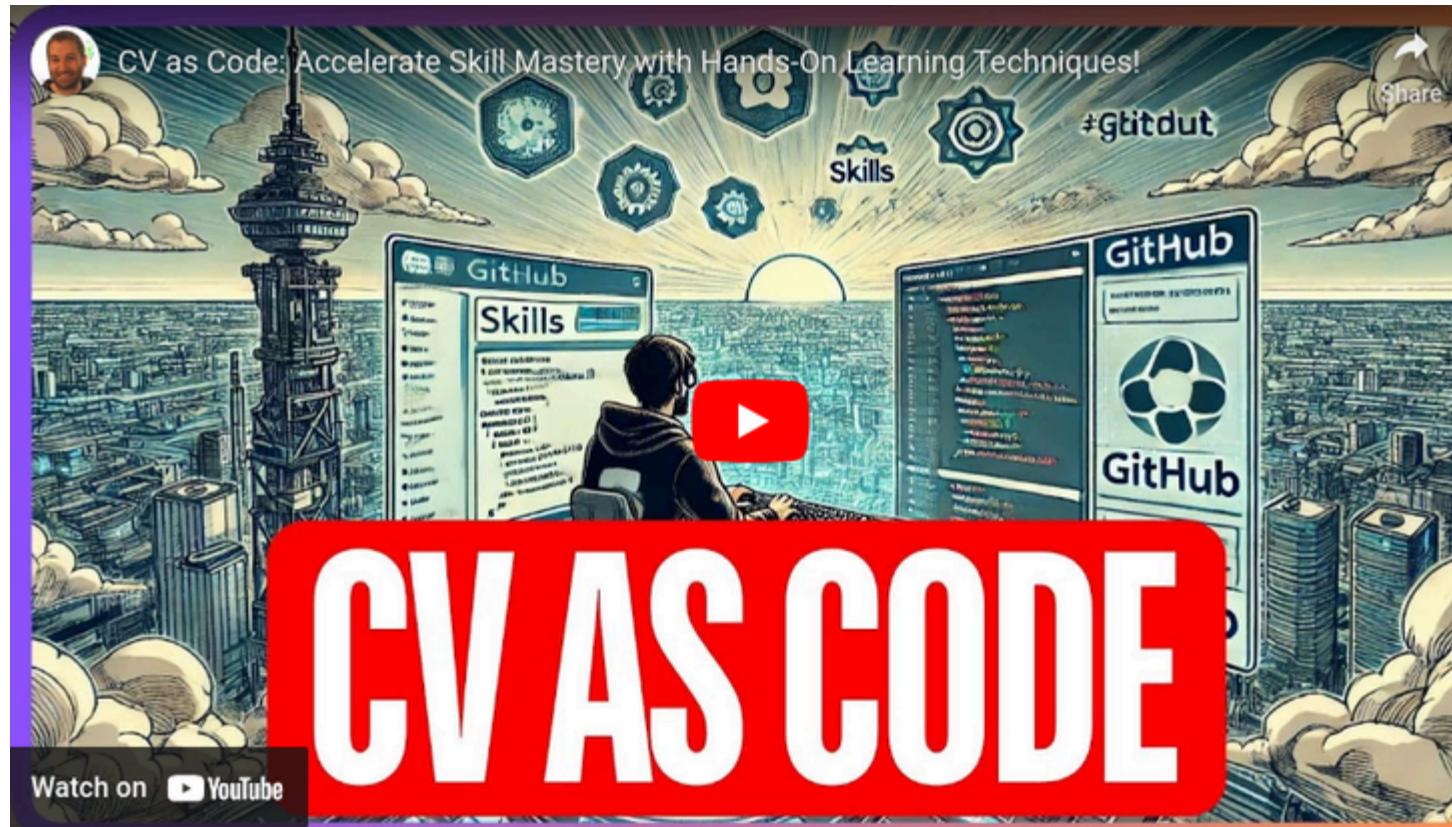
2

AT LEAST IT IS
NOT DOMINOS
PIZZA

3



PROMPT > how can we close the skills gap with the ai revolution in year 2024 should i be i shape m shaped or t shaped ?



TURN THEM
INTO THE
FORMAT YOU
WANT

minikubeoncodespaces (Public)

main · 1 Branch · 0 Tags

rifaterdemsa hin local implementation 8c86cc9 · 1 hour ago 40 Commits

.vscode updates 10 hours ago

Code local implementation 1 hour ago

Errors everyone can see theirs 8 hours ago

Markdown local implementation 1 hour ago

Resources local implementation 1 hour ago

README.md last updates 9 hours ago

output.md port forward 8 hours ago

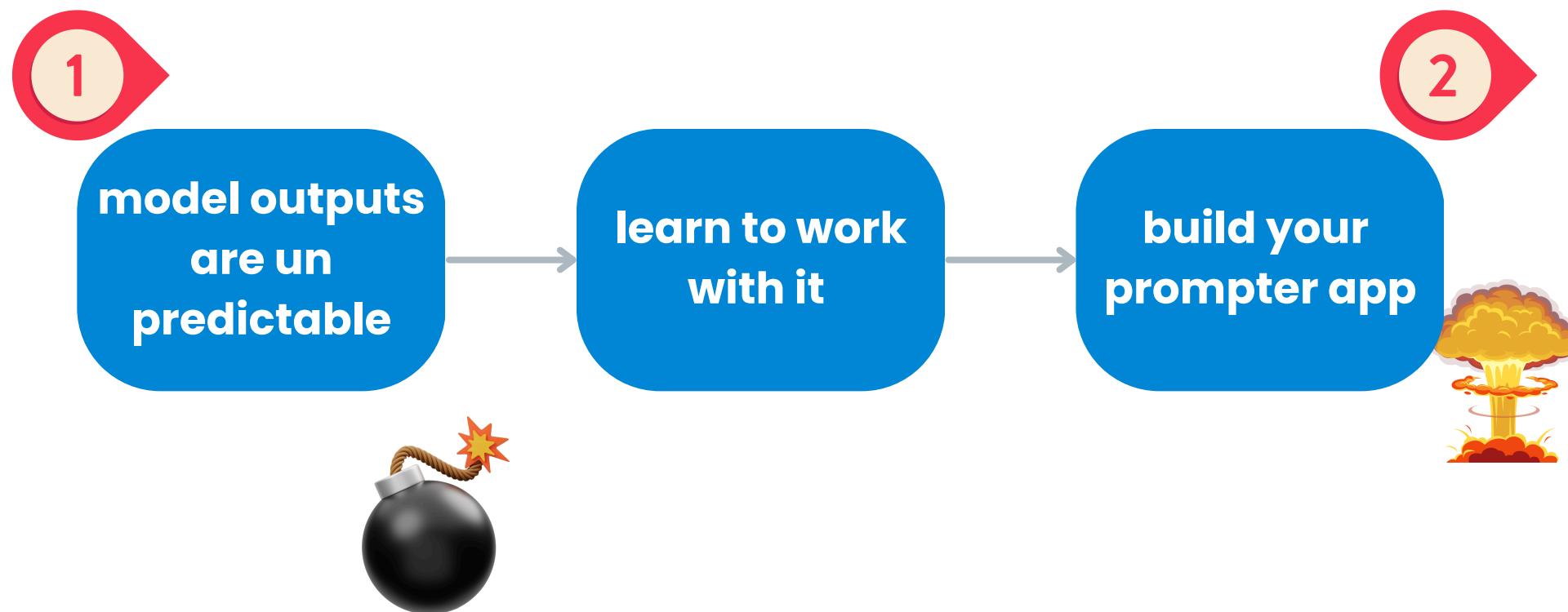
2

world of open
source

SOLID
S

STORY

<https://github.com/rifaterdemsa hin>



Prompter Helper App

Template:

Task:

Context: Suppose year is 2400 with near galaxy

Format: 3 paragraphs, 300 words, 250 max characters

Persona:

Style: Descriptive

Tone: Friendly

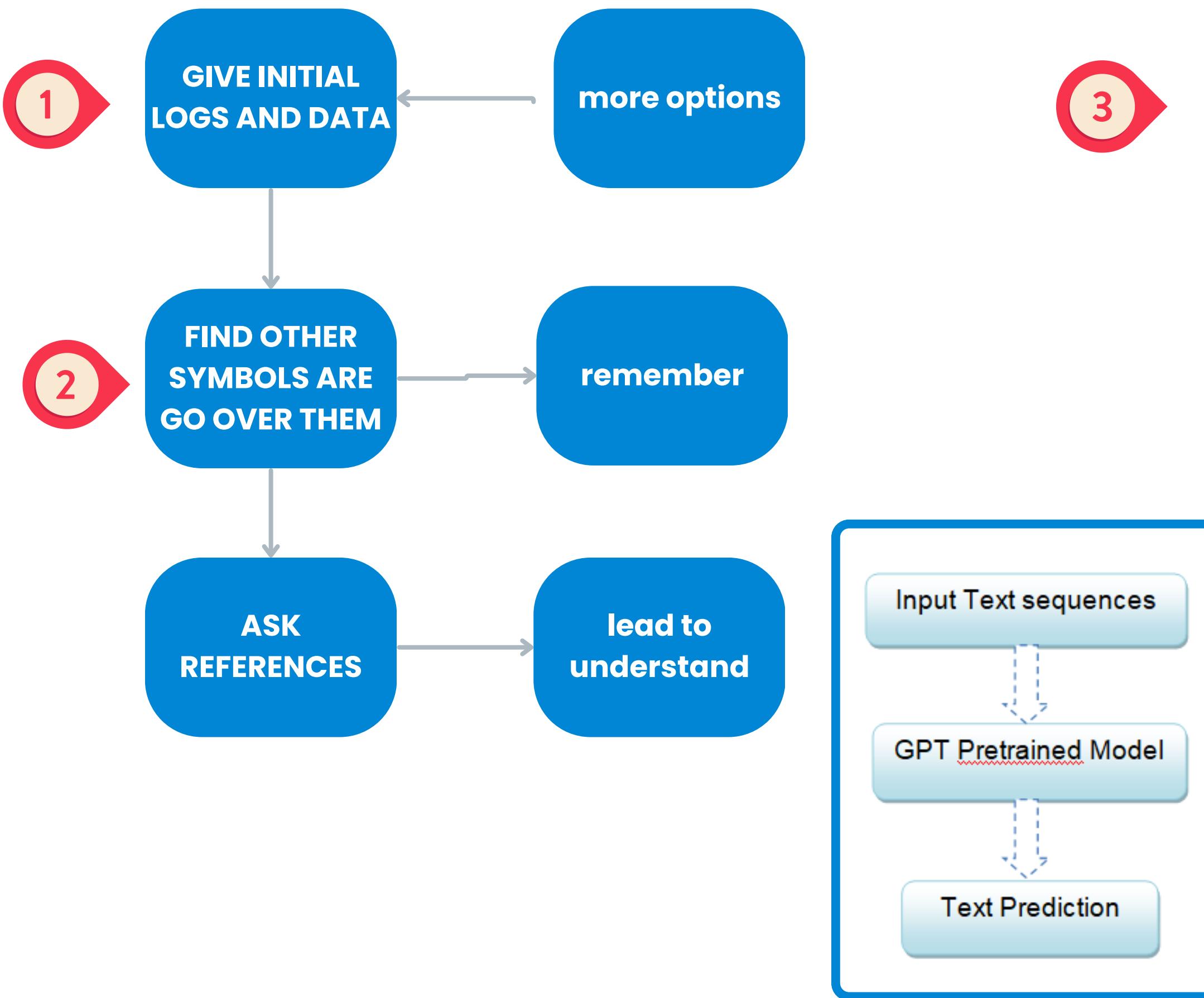
Dramatic Structure: Plain

Exemplar: Once there was a boy

Note: Click on a line to remove it.

[Template: Branding Guide Template]
[Task: Develop a branding guide]
[Context: Providing steps and tips for businesses]
[Format: Guide]
[Persona: Brand strategist or business consultant]
[Style:]
[Tone:]
[Structure:]
[Exemplar: Branding guides from websites like Canva or 99designs]
[Questions to improve the prompt.]
1. What is the main objective?
2. Who is the target audience?
3. What is the desired outcome?
4. Are there any constraints?
5. What is the deadline?

3



FIVE ME 5 WAYS TO OPERATE OPENSHIFT

Here are five ways to operate OpenShift, a Kubernetes-based platform that helps developers build, deploy, and manage containerized applications:

1. Web Console

- Overview: The OpenShift Web Console is a user-friendly interface that provides access to a wide range of management and monitoring features. It allows users to manage applications, view logs, monitor resources, and manage cluster components visually.
- Use Cases: Ideal for users who prefer graphical interfaces or are managing smaller clusters where ease of use and visual feedback are crucial.

2. Command-Line Interface (CLI)

- Overview: The `oc` command-line tool allows users to interact with OpenShift clusters programmatically. It supports operations like creating and managing projects, deploying applications, scaling, and rolling updates.
- Use Cases: Suitable for advanced users who prefer scripting and automation. It's essential for CI/CD pipelines and large-scale operations where repetitive tasks need to be automated.

3. OpenShift API

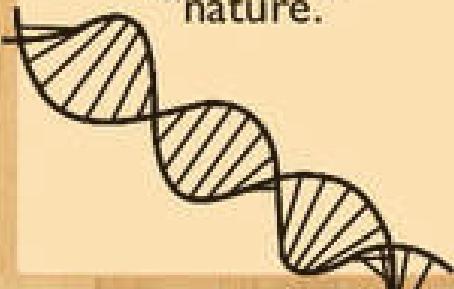
- Overview: OpenShift exposes a RESTful API that allows programmatic access to the cluster. Developers can write custom scripts or integrate OpenShift operations into existing tools or workflows using API calls.
- Use Cases: Perfect for developers and system integrators who need to embed OpenShift functionality into custom applications or automate complex workflows.



CHEATSHEET

Nature:

Our genetics determine our behavior. Our personality traits and abilities are in our "nature."



Nurture:

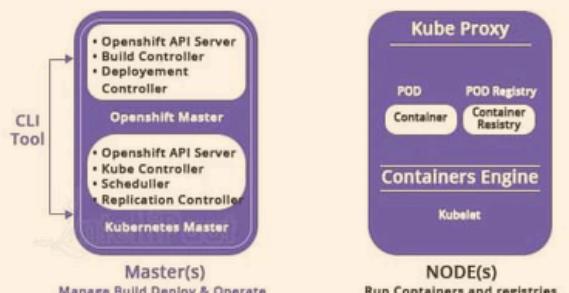
Our environment, upbringing, and life experiences determine our behavior. We are "nurtured" to behave in certain ways.



KUBERNETES CHEAT SHEET

KUBERNETES

- It is an open source platform for automating deployment and scaling of containers across clusters of hosts providing container centric infrastructure.
- It is a container orchestrator and can run Linux containers:
- Launch container.
- Maintain and monitor container site.
- Performs container-oriented networking



Key Concepts

Now let's discuss the key points of this architecture.

- Pod:** These are the group of containers.
- Labels:** These are used to identify the pods.
- Kubelet:** They are container agents, responsible for maintaining the set of pods.
- Proxy:** They are the Load balancer for pods, helping in distributing tasks across the pods.
- ETCD:** A Metadata service.

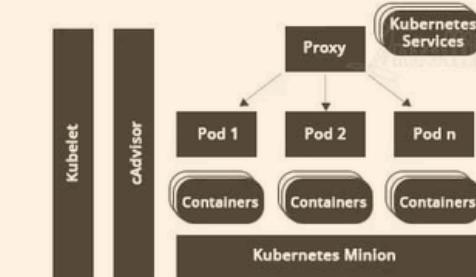
- cAdvisor:** For resource usage and performance stats.
- Replication controller:** It manages pod replication.
- Scheduler:** Used for pod scheduling in worker nodes.
- API server:** Kubernetes API server.

Now let's understand the role Master and Node play in the Kubernetes Architecture.

Master

- It is responsible for maintaining the desired state for the cluster you are working on.
- "Master" indicates a set of processes that are used to manage the cluster.
- Contains info, API, scheduler, replication controllers, and master.

- Kubelet Info Service:**
- Kubelet:** Run Containers and registries
- Kube Proxy:** API, Schedular, Replication Controller
- Kubernetes Master:**
- Worker Nodes / Minions:**
 - Also called as a minion. It contains the services necessary to run the pods that are managed by the master.
 - Some services include: container runtime, Kubelet, kube-proxy.
 - Contains: Kubelet, cAdvisor, services, pods and containers.



Features

- Automated scheduling:** provides an advanced scheduler that helps launch container on cluster nodes
- Self healing:** reschedule, replace and restart dead containers.
- Automated rollouts and rollbacks:** supports rollback for systems incase of a failure. Enables rollout and rollback for the desired state.
- Horizontal scaling:** can scale up and down the app as per required. Can also be automated wrt CPU usage.
- Service discovery and load balancing:** uses unique ip and dns name to containers. This helps identify them across different containers.

Pods and Container Introspection

COMMANDS	FUNCTION
Kubectl get pods	Lists all current pods
Kubectl describe pod<name>	Describes the pod names
Kubectl get rc	List all replication controllers
Kubectl get rc --namespace="namespace"	Lists all current pods
Kubectl describe rc <name>	Shows the replication controller name
Kubectl get svc	Lists the services
Kubectl describe svc <name>	Shows the service name
Kubectl delete pod <name>	Deletes the pod
Kubectl get nodes -w	Watch nodes continuously

Debugging

COMMANDS	FUNCTION
Kubectl exec<service><commands>[-c <\$container>]	Execute command on service by selecting container.
Kubectl logs -f<name>>[-c <\$container>]	Get logs from service for a container
Kubectl top node	Watch -n 2 cat/var/log/kubelet.log
Kubectl top pod	Show metrics for pods

Objects

All	Clusterrolebindings	FUNCTION
cm= configmaps c	controllerrevisions	crd=custom resource definition
Cronjobs	cs=component status	csr=certificate signing requests
Deploy=deployments	ds=daemon sets	ep=end points
ev= events	hpa=autoscaling	ing= ingress
Jobs	limits=limit ranges	Netpol=network policies
No = nodes	ns=namespaces	pdb=pod
po= pods	Pod preset	Pod templates
Psp= pod security policies	Pv= persistent volumes	pvc= persistent volume claims
quota= resource quotas	rc=replication controllers	Role bindings
roles	rs=replica sets	sa=service account
sc= storage classes	secrets	sts=stateful sets

Cluster Introspection

COMMANDS	FUNCTION
Get version information	Kubectl version
Get cluster information	Kubectl cluster-info
Get the configuration	Kubectl config g view
Output info about a node	Kubectl describe node<node>

Other Quick Commands

Launch a pod with a name on an image : Kubectl run<name> --image=<image-name>
Create a service in <manifest.yaml> : Kubectl create -f <manifest.yaml>
Scale replication counter to count the number of instances : Kubectl scale --replicas=<count>
Map external port to internal replication port : Expose rc<name> -port=<external>--target-port=<internal>
To stop all pod in <n> : Kubectl drain<n>--delete-local-data--force--ignore-daemonset
Allow master nodes to run pods : Kubectl taintnodes --all-noderole. kubernetes.io/master-

COMPARE

Nature:
Our genetics determine our behavior. Our personality traits and abilities are in our "nature."

Nurture:
Our environment, upbringing, and life experiences determine our behavior. We are "nurtured" to behave in certain ways.

The chart features a DNA helix icon on the left and a mother holding a baby icon on the right.

Concept	IIS (.NET)	Kubernetes (Services, Ingress, CNI)
Hosting and Web Server	IIS is a traditional web server that hosts web applications directly, primarily for .NET-based applications.	Kubernetes doesn't host applications directly; instead, it manages containers where web applications (including .NET) run.
Platform	Runs on Windows servers and is tightly integrated with the .NET Framework/Core.	Kubernetes is platform-agnostic and can run containers on any OS, allowing for greater flexibility.
Service Management	IIS handles services through application pools, worker processes, and direct HTTP requests.	Kubernetes uses Services to expose applications running in Pods, allowing communication between containers.
Load Balancing	Load balancing is handled by IIS internally or through external load balancers (e.g., Azure, AWS).	Kubernetes uses Services (type LoadBalancer or NodePort) for distributing traffic across Pods, and Ingress provides external access.
Service Discovery	No native service discovery; relies on external tools or DNS entries.	Kubernetes has built-in service discovery using DNS for Pods and Services.
Routing	Managed through HTTP modules, handlers, and URL rewriting in IIS.	Kubernetes uses Ingress resources to define rules for routing external traffic to services running inside the cluster.

DAY 1

TOPIC INTRO

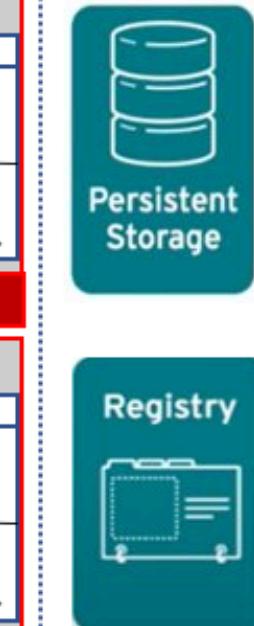
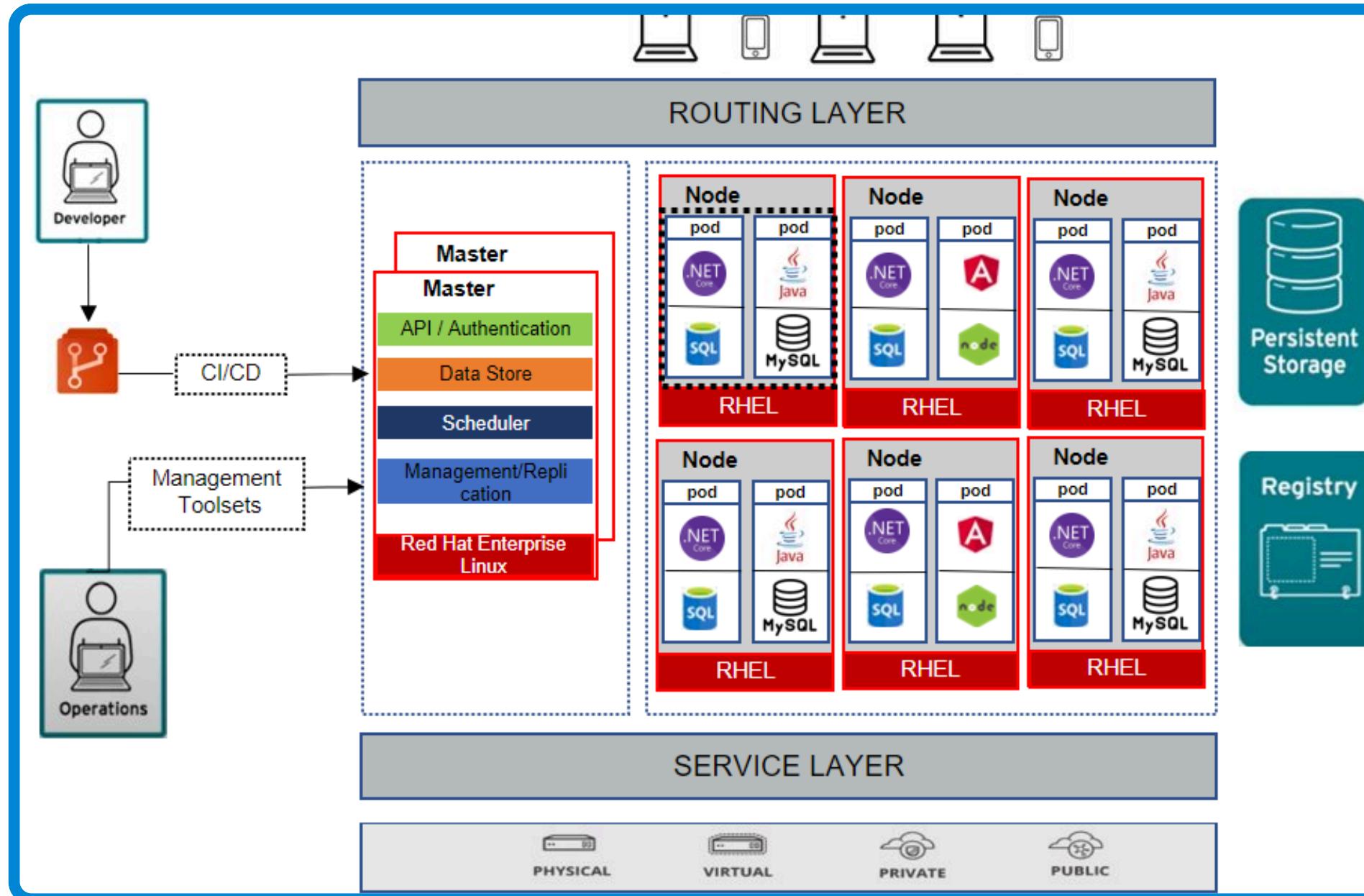
- Overview of Containerization and Kubernetes
- Key Concepts: Pods, Nodes, Clusters, Services, Namespaces
- Kubernetes Architecture

WHY ? SHOULD YOU USE IT ?

1
ON MY END I GOT TO SOLVE A TECH STACK AND SUPPORT IT



2



COMPLEXITY RISES INCREASE YOUR PRODUCTIVITY WITH GPT

3

PROMPT > HOW CAN I USE THE GPT AT MY WORK WORKING AS AN sre IN OPENSHIFT CLUSTERS

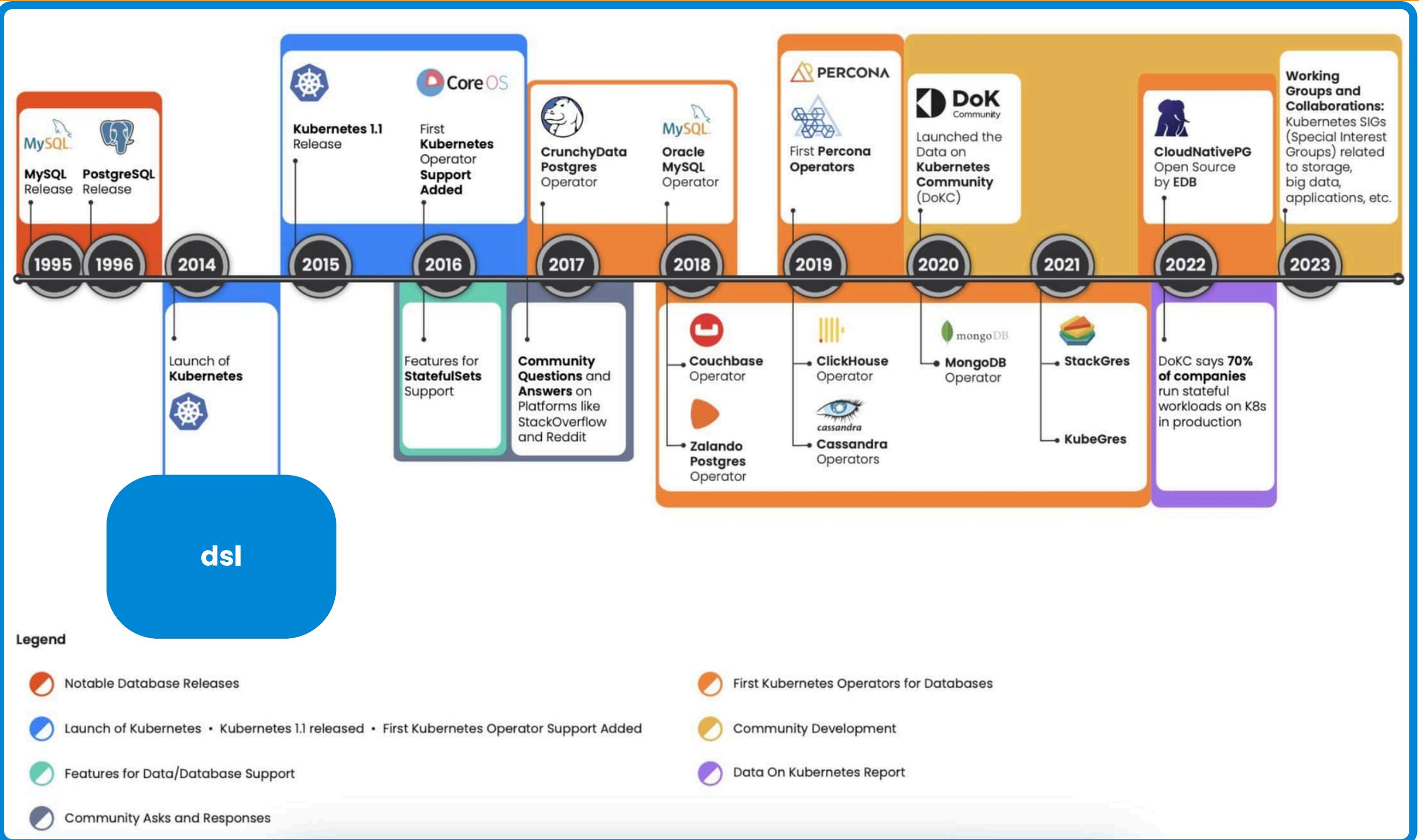
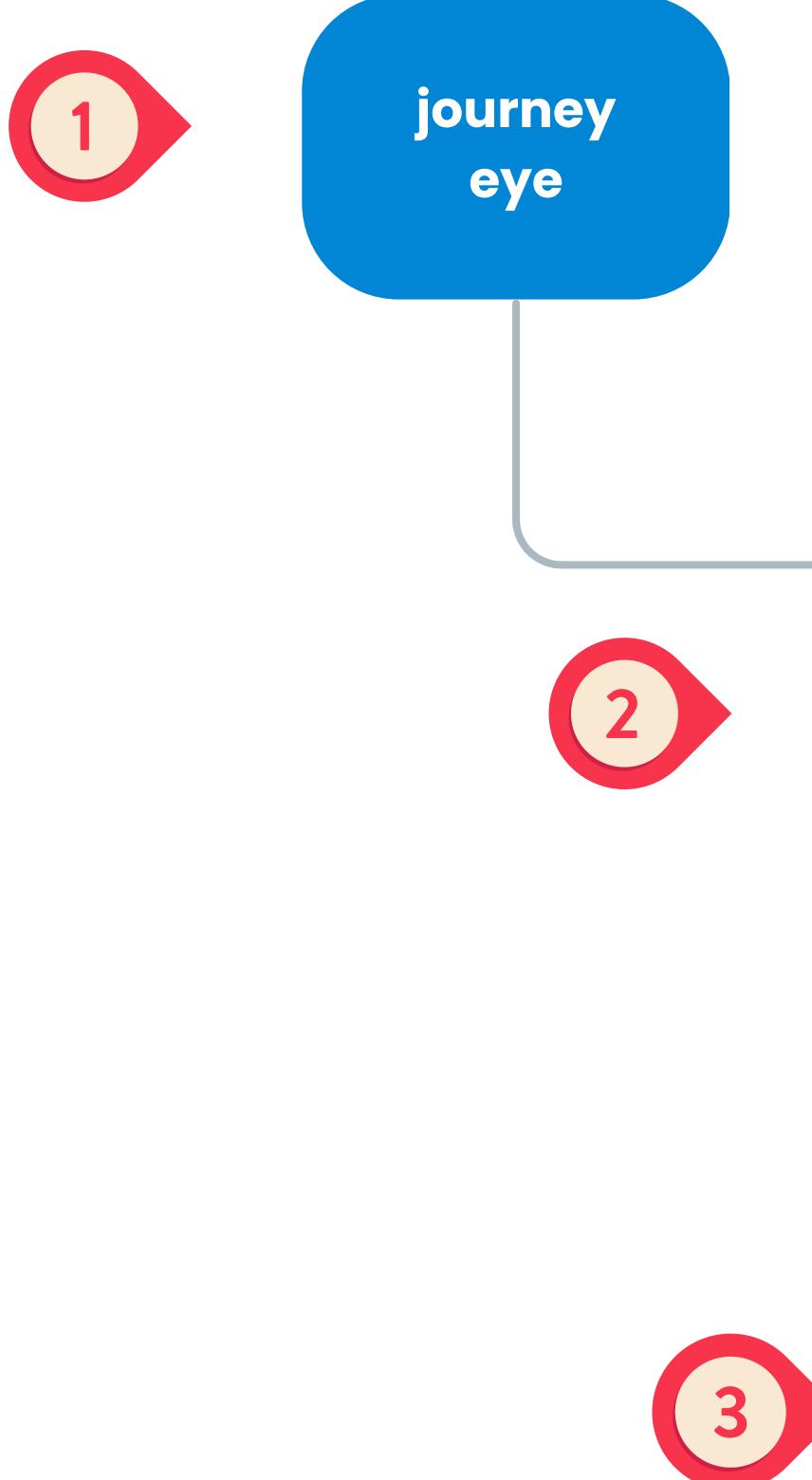
ChatGPT can

Brother Software Update Notification



PROMPT > HOW CAN I USE THE GPT AT MY WORK xxx

KUBERNETES EVOLUTION



PROMPT > WHAT IS THE TIMELINE FOR THE KUBERNETES DEVELOPMENT



1

journey

Monolithic Application

Recruitment Website
Job Applicants
Job Vacancies
Recruiters

Transition to Microservices

Recruitment Website
Recruiters
Job Applicants
Job Vacancies

Docker

Create containers for your application



Kubernetes

Launch your containerised application in K8s

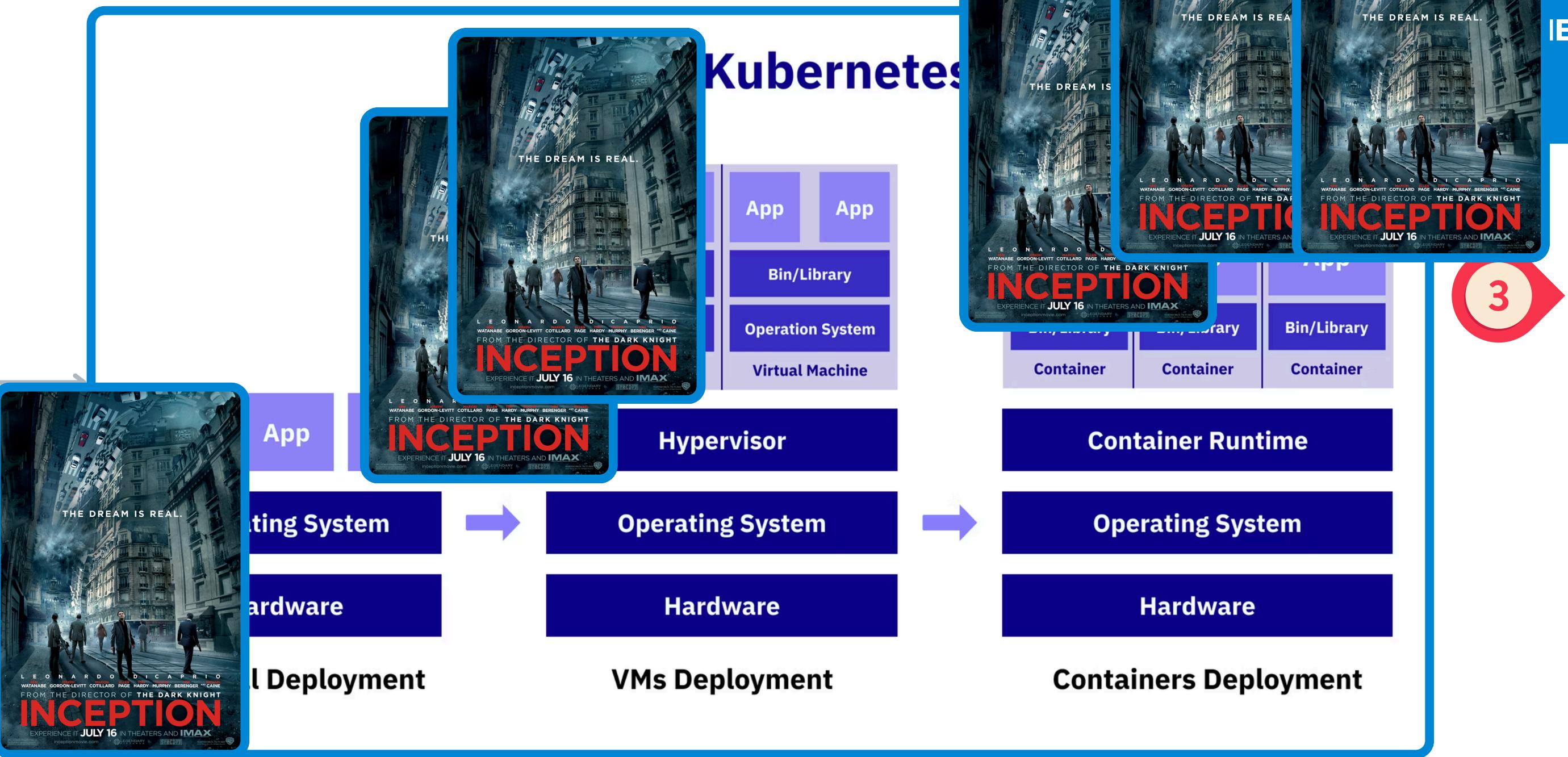
2

FIRST PRINCIPLES

3

KUBERNETES WHY ?

journey



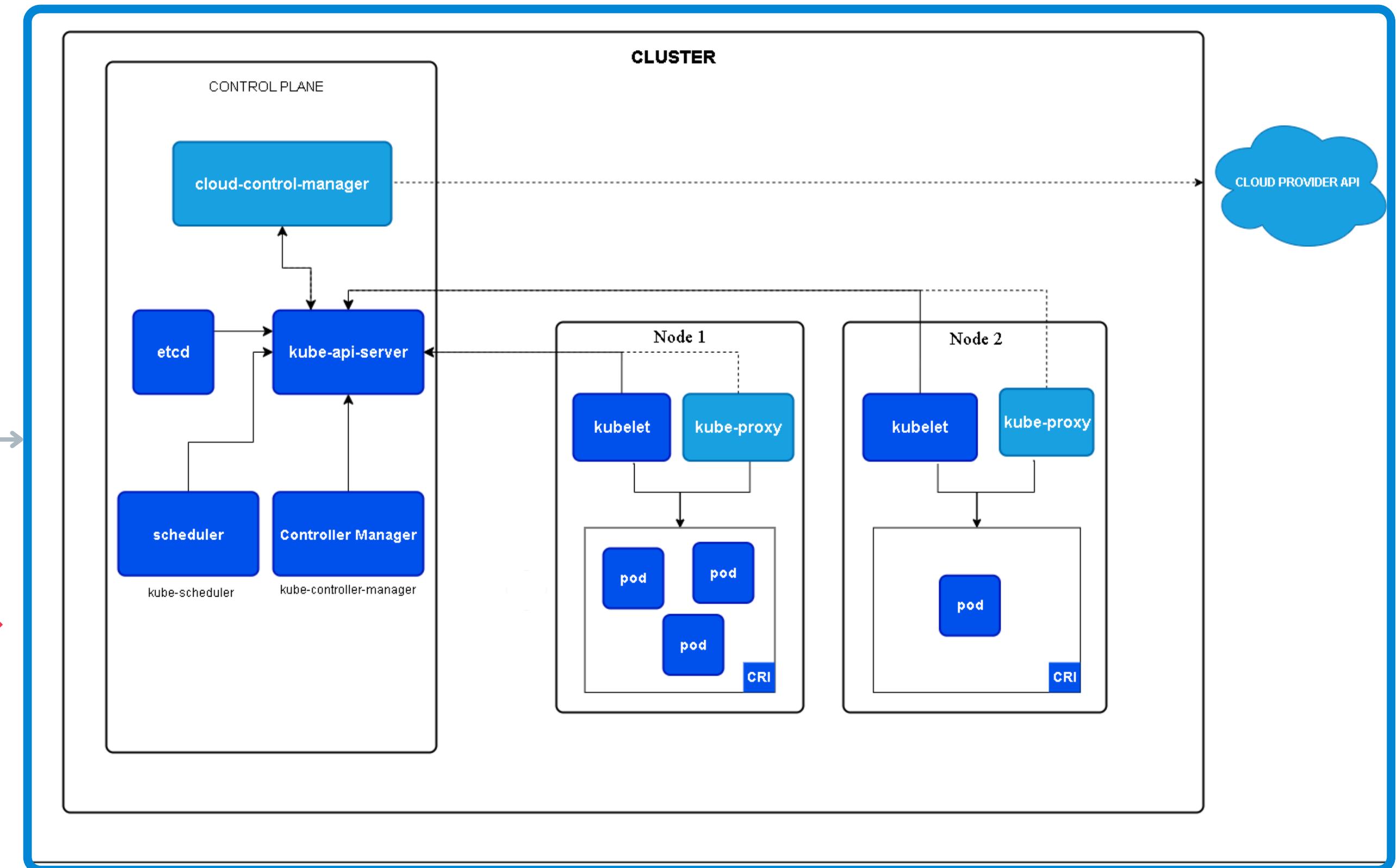
PROMPT > WHAT IS THE DIFFERENCE [x]?

KUBERNETES ARCHITECTURE ?

1

journey

3



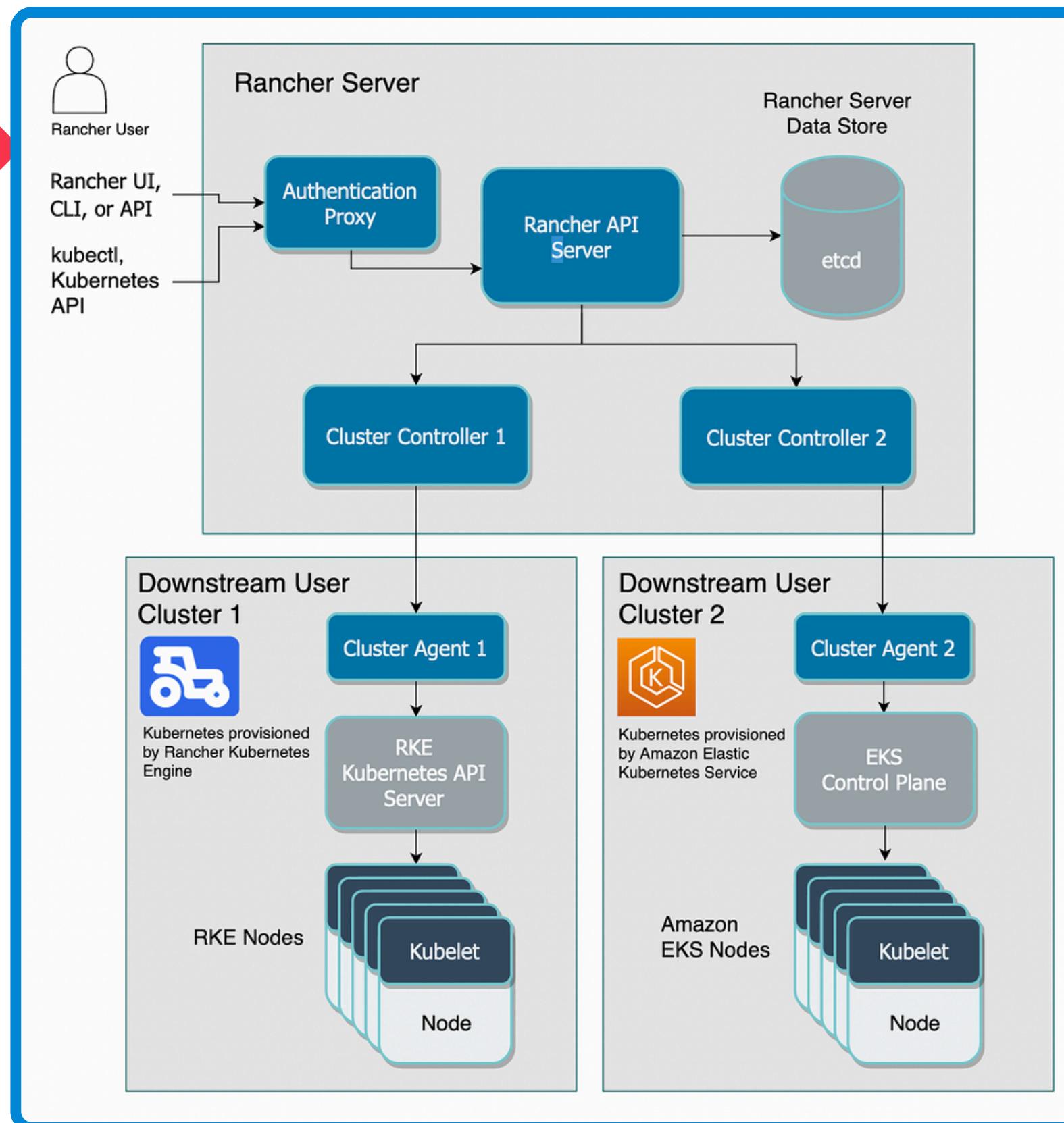
PROMPT > WHAT IS THE DIFFERENCE [X]?

KUBERNETES ARCHITECTURE ?

1

journey

2



A Day in the Life of a Rancher

- ✓ Feed cows
- ✓ Fix fence
- ✓ Check cows
- ✓ Repeat

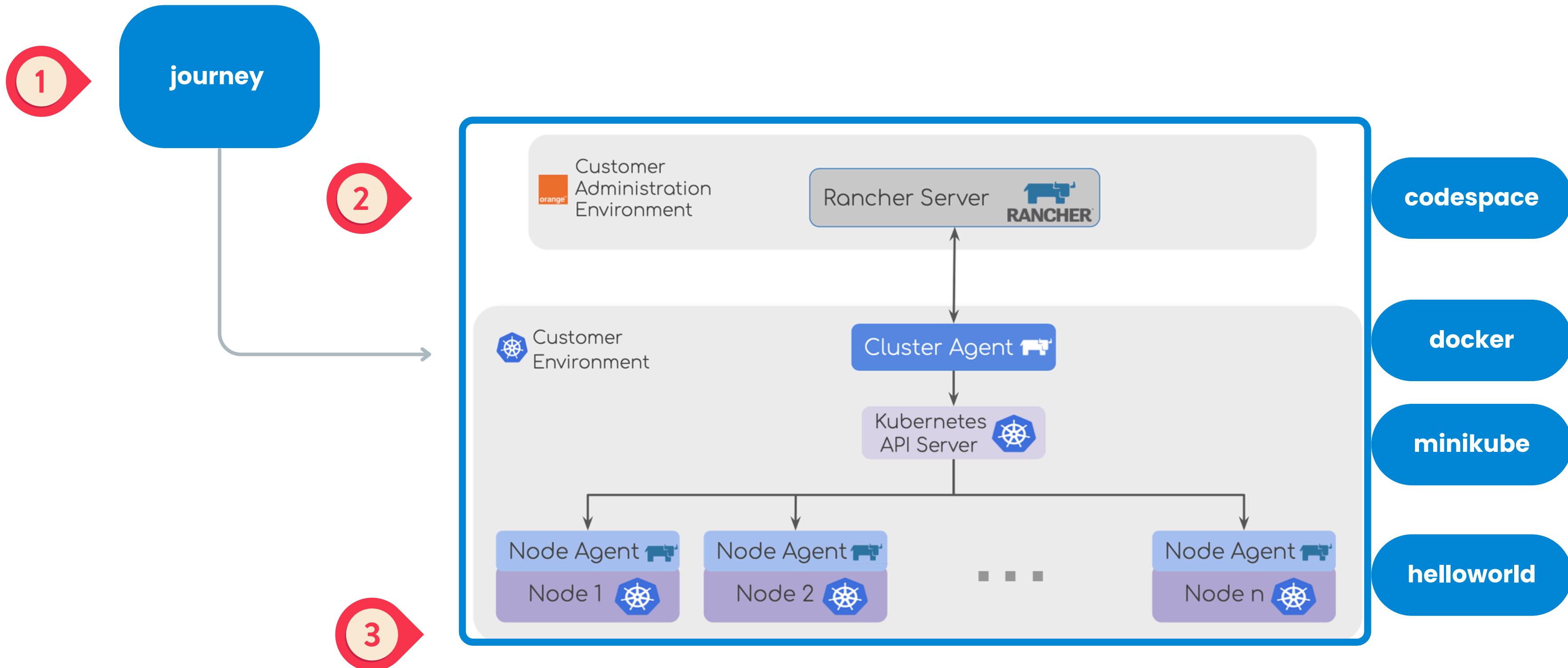
- ✓ Fix equipment
- ✓ Check cows
- ✓ Repeat



TEXASFARMBUREAU.ORG

PROMPT > WHAT IS THE DIFFERENCE [X]?

KUBERNETES ARCHITECTURE ?



PROMPT > WHAT IS THE DIFFERENCE [X]?

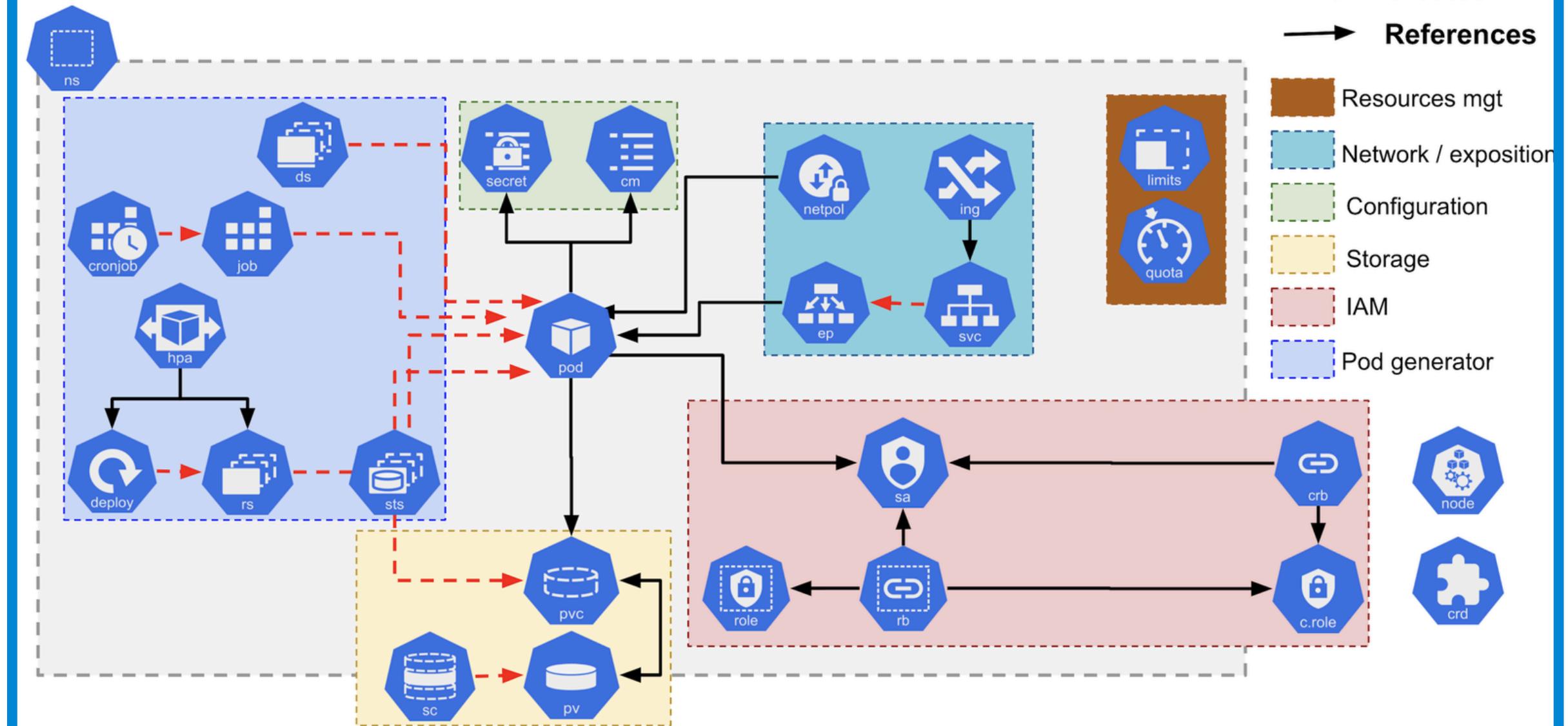
journey
DIRECTION

1

2

3

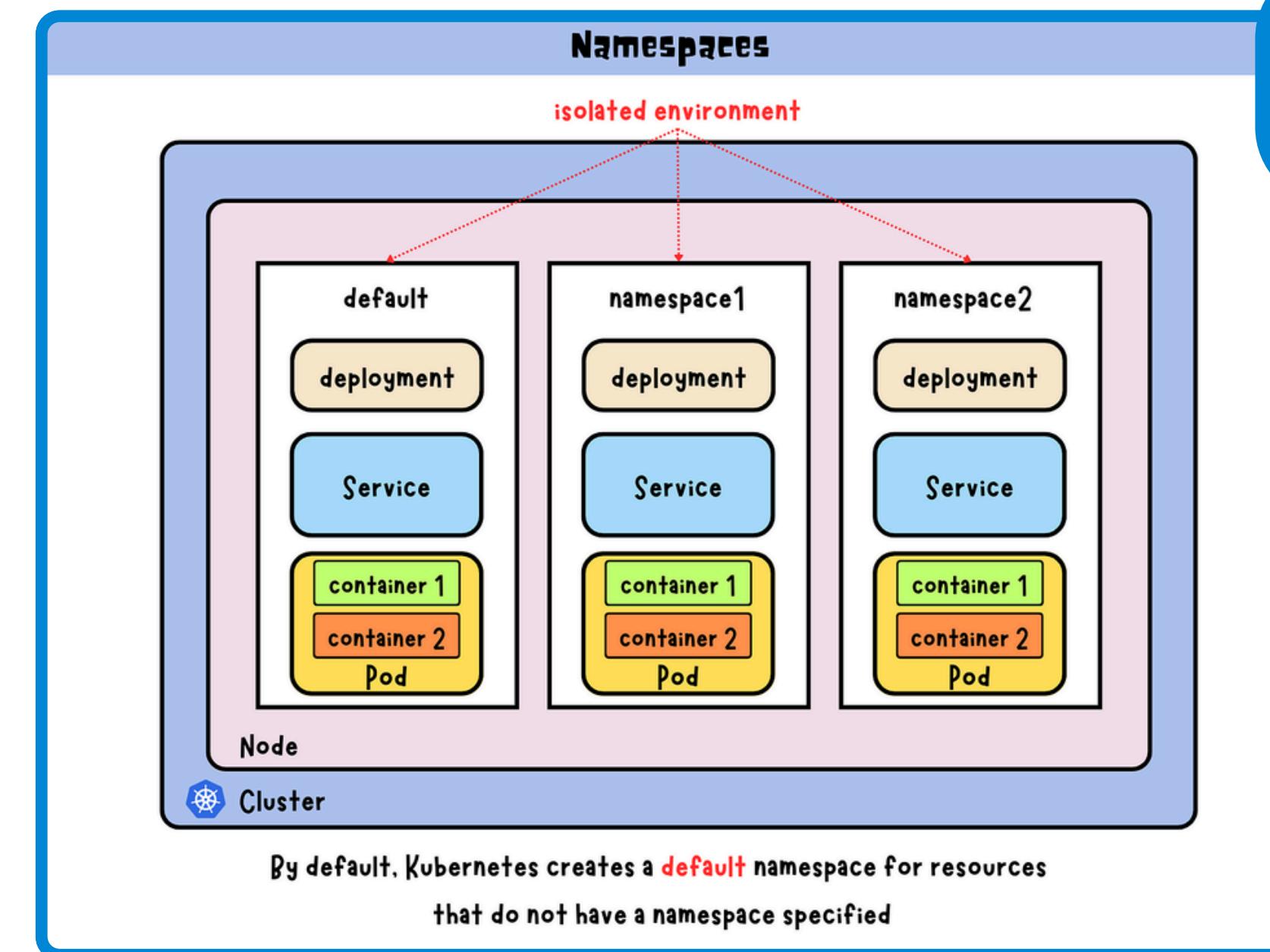
Kubernetes Resources Map



KUBERNETES RESOURCES ?

1
**BASE PRACTICE
DO NOT WORK
IN DEFAULT!**

2



3
**BASE PRACTICE
DO NOT WORK
IN DEFAULT!**

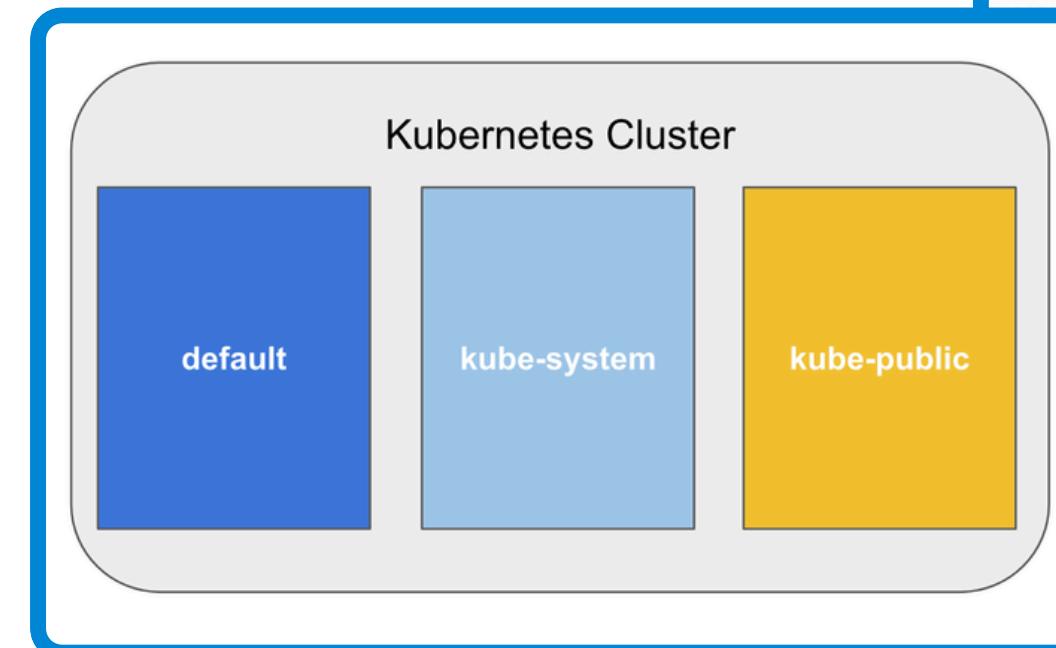
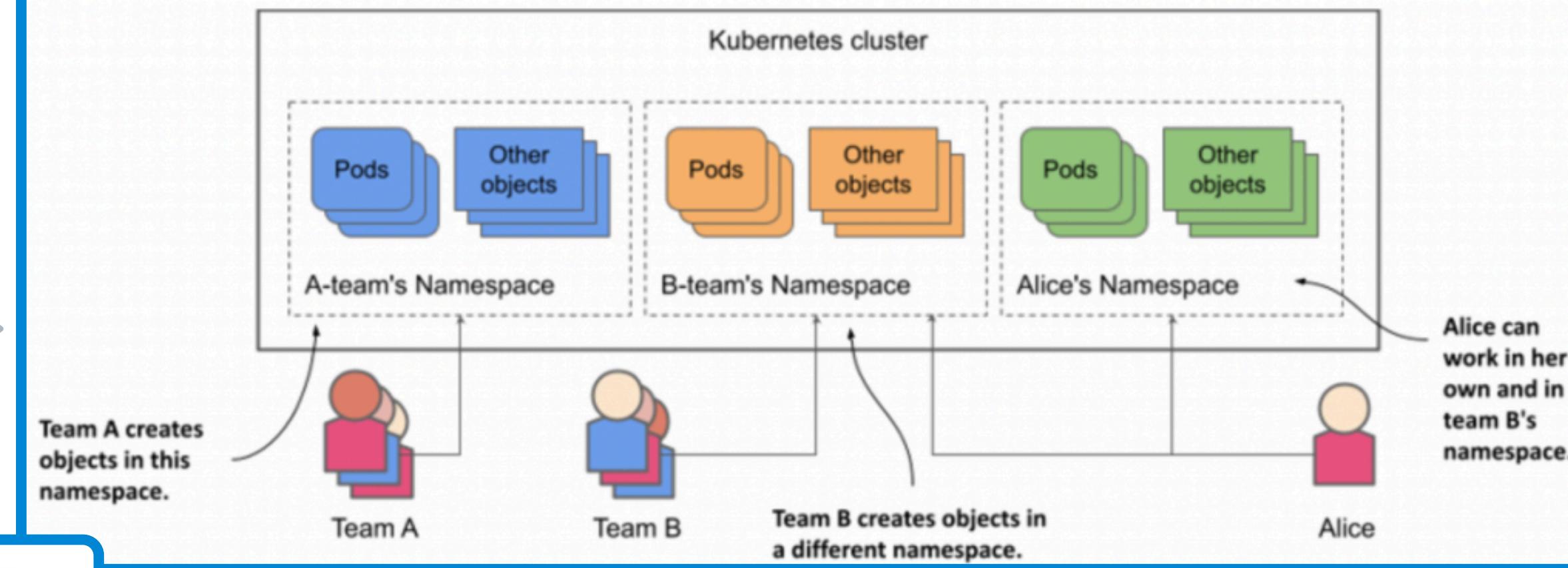
**BASE PRACTICE
DO NOT WORK
IN DEFAULT!**

1

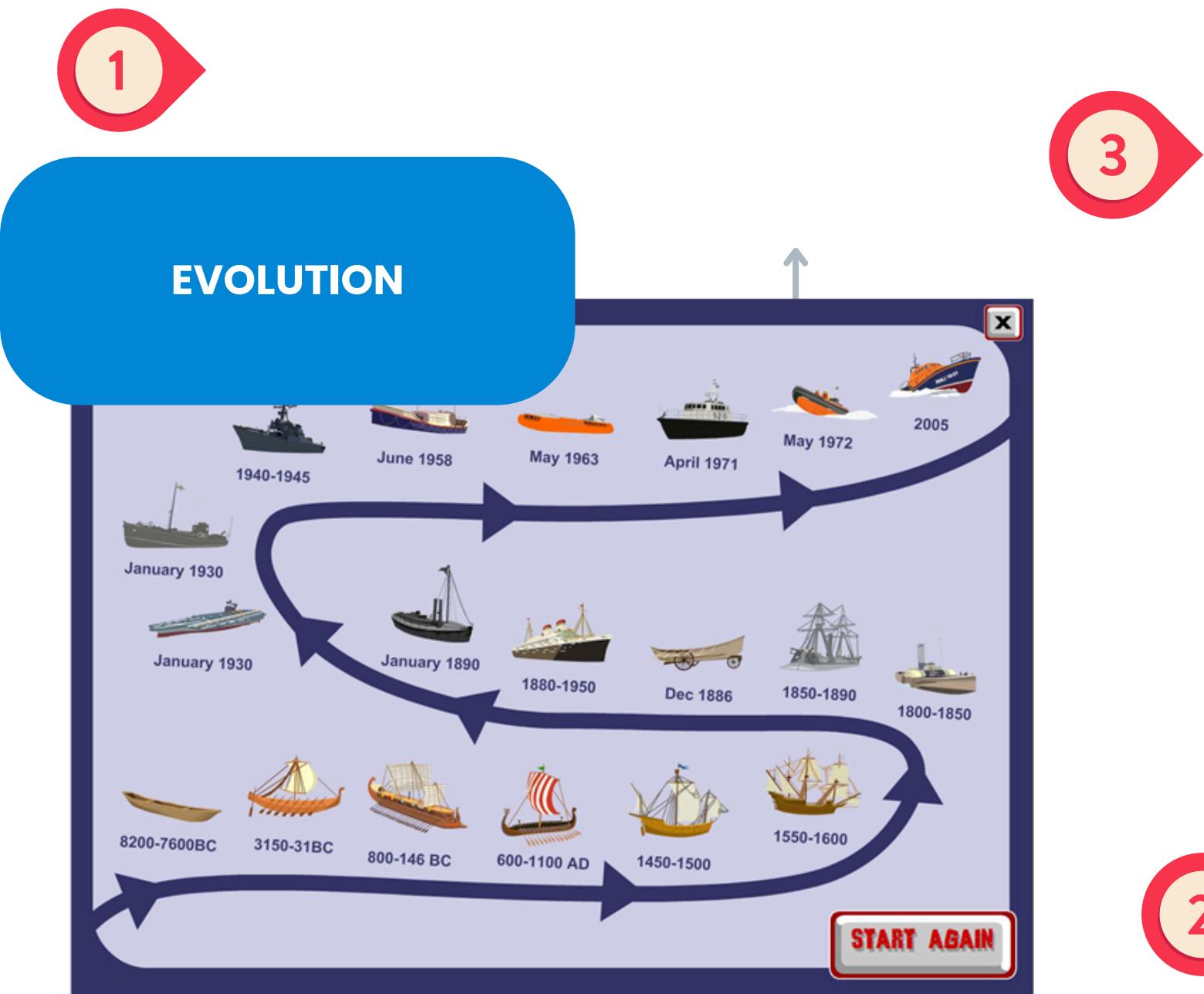
SEPERATE

2

Figure 10.1 Splitting a physical cluster into several virtual clusters by utilizing Kubernetes Namespaces



3



DEVOPS

SRE

HEALTH

CREATE

**PULL REQUEST
ENV**

MONITOR

PROMPT > WHAT IS THE DIFFERENCE [X]?

KUBERNETES REAL LIFE

DEV

1



2

CREATE



manage



3

prod



PROMPT > WHAT IS THE DIFFERENCE [X]?

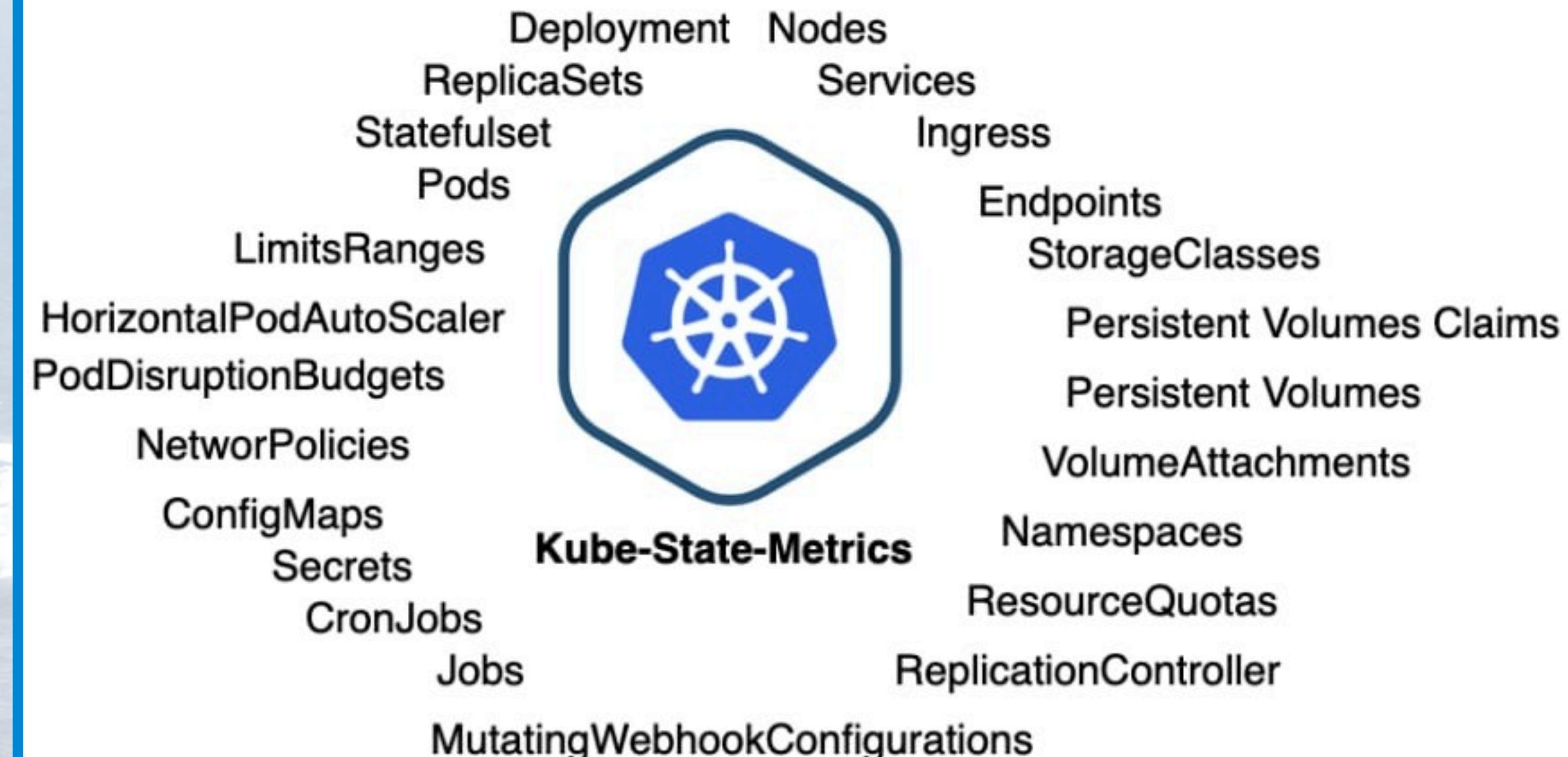
KUBERNETES OBJECTS

1

2

CREATE

3



KUBERNETES OBJECTS

1

3

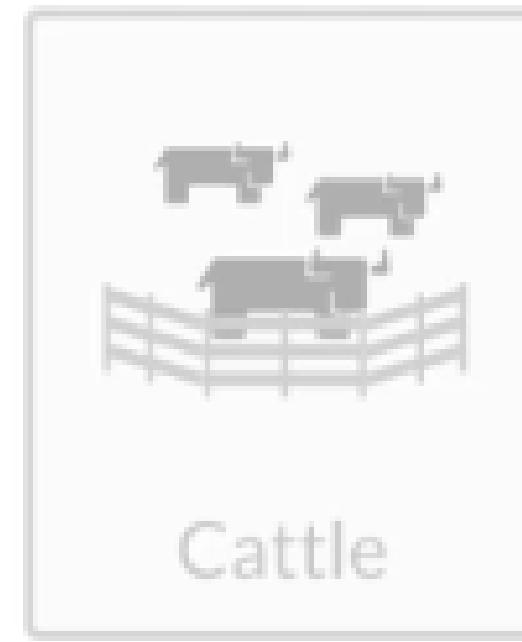
2

CREATE



PROMPT > WHAT IS THE DIFFERENCE [X]?

1



Cattle



Kubernetes



Mesos

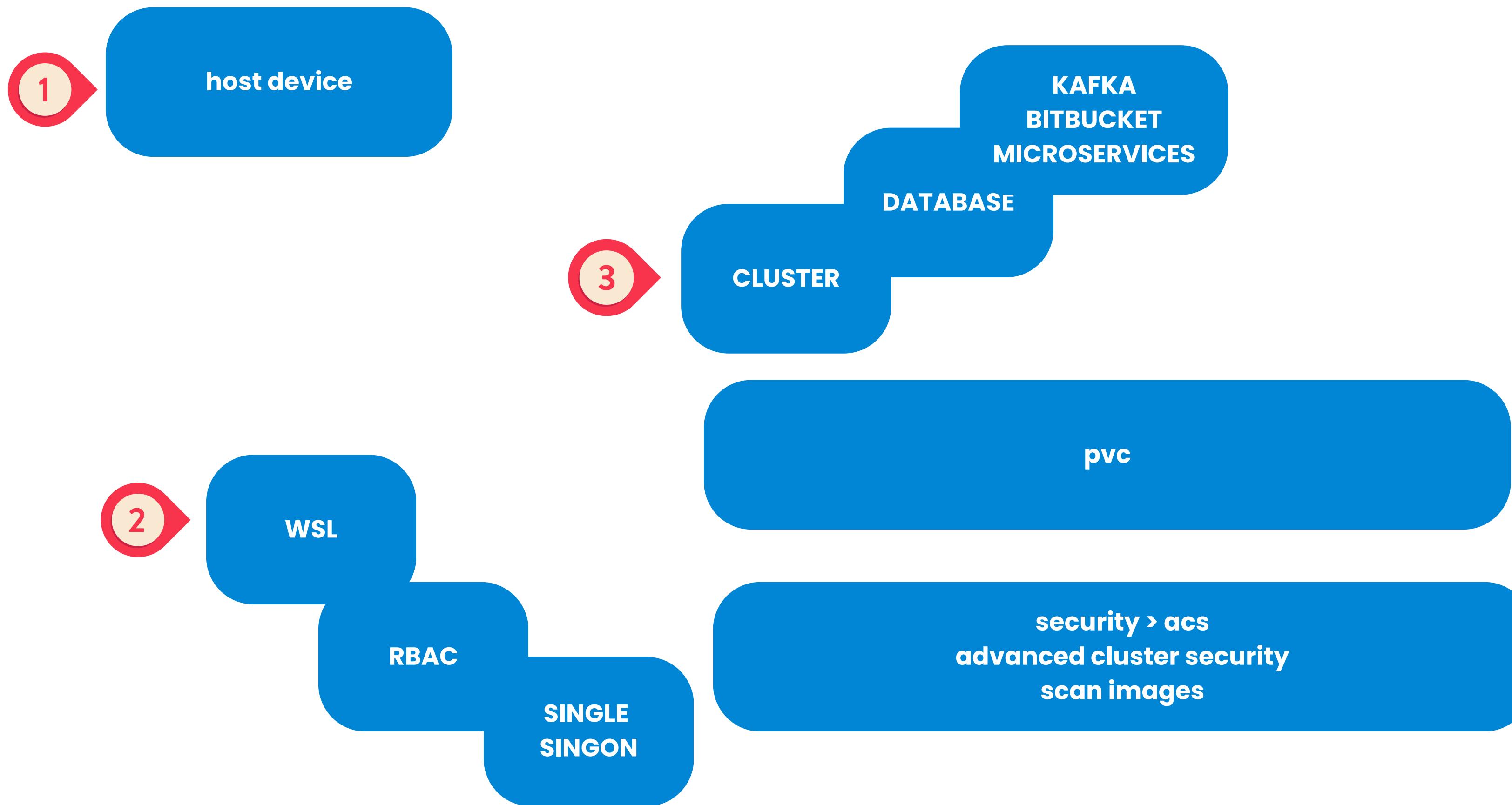


Swarm

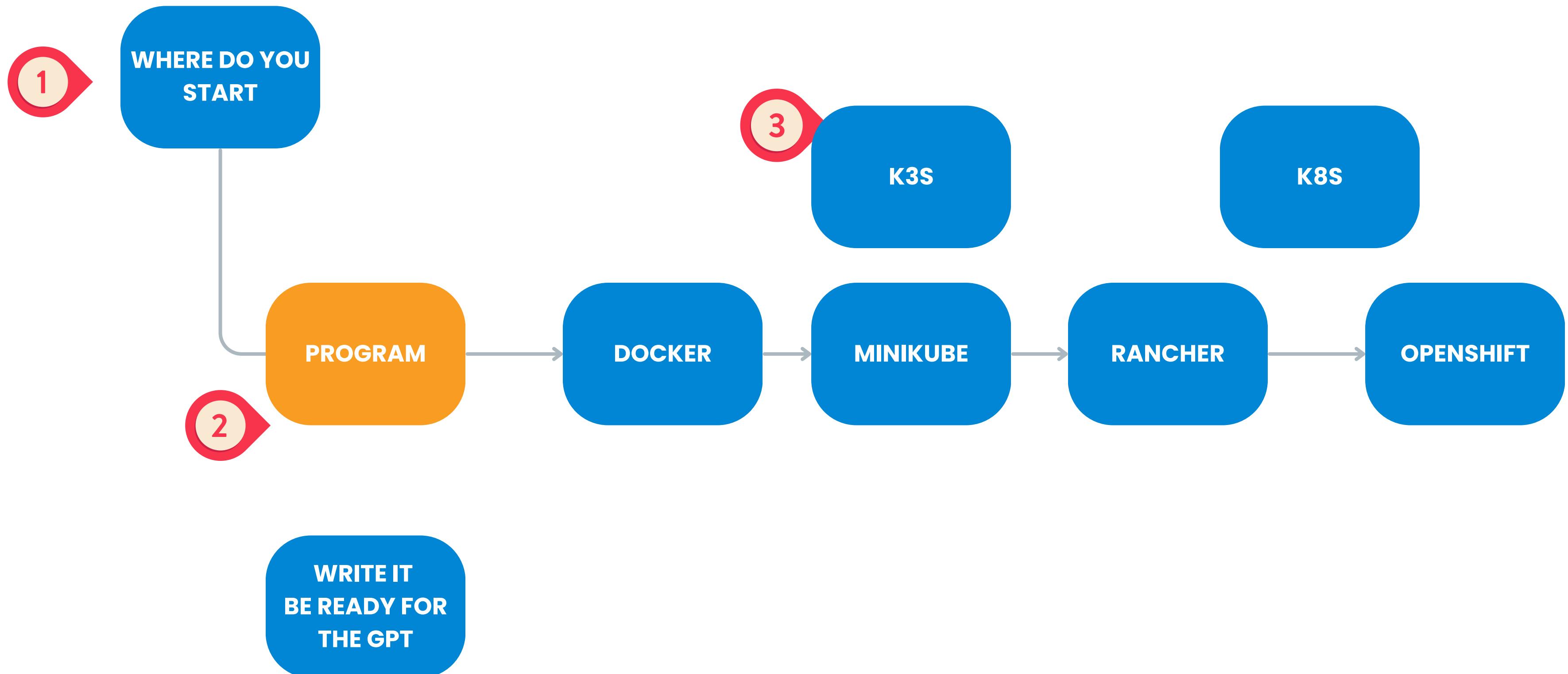


EXPERIMENTAL
Windows

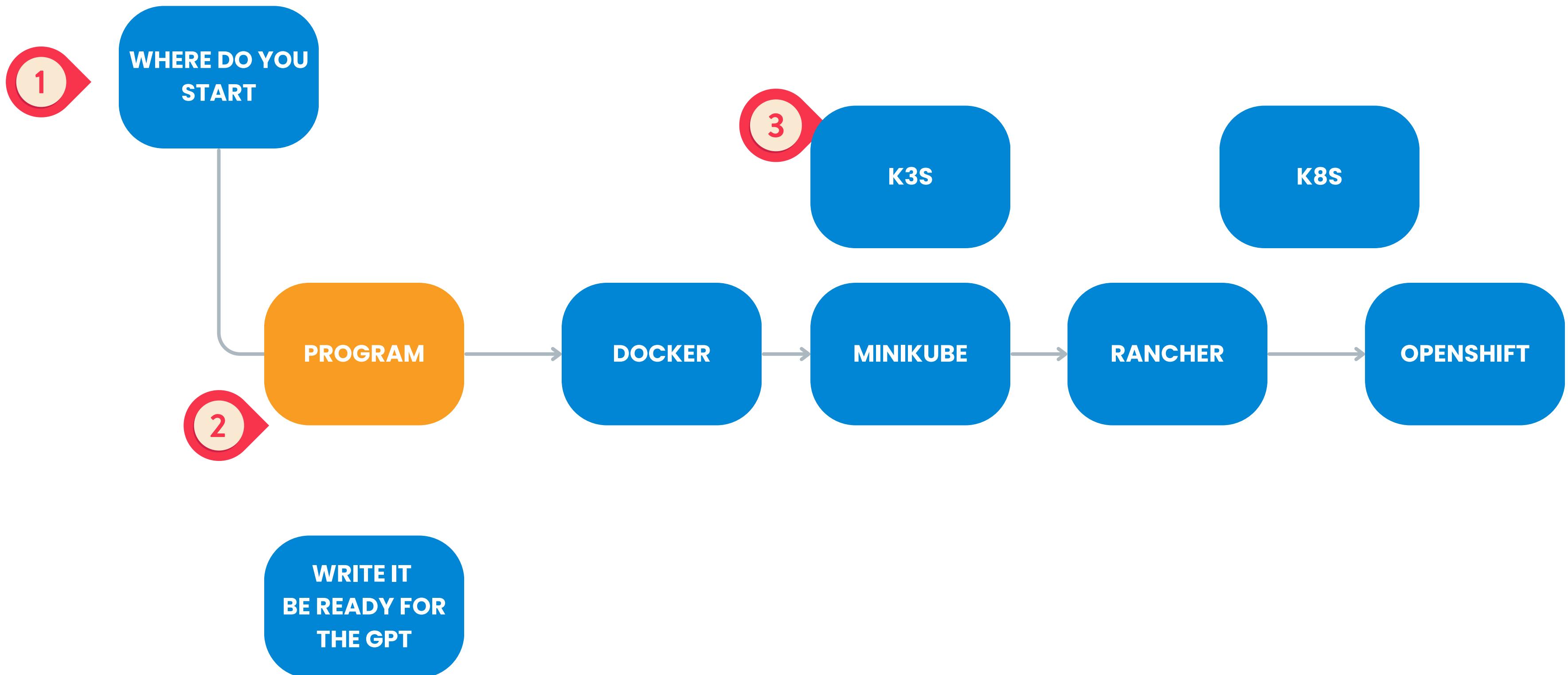
2



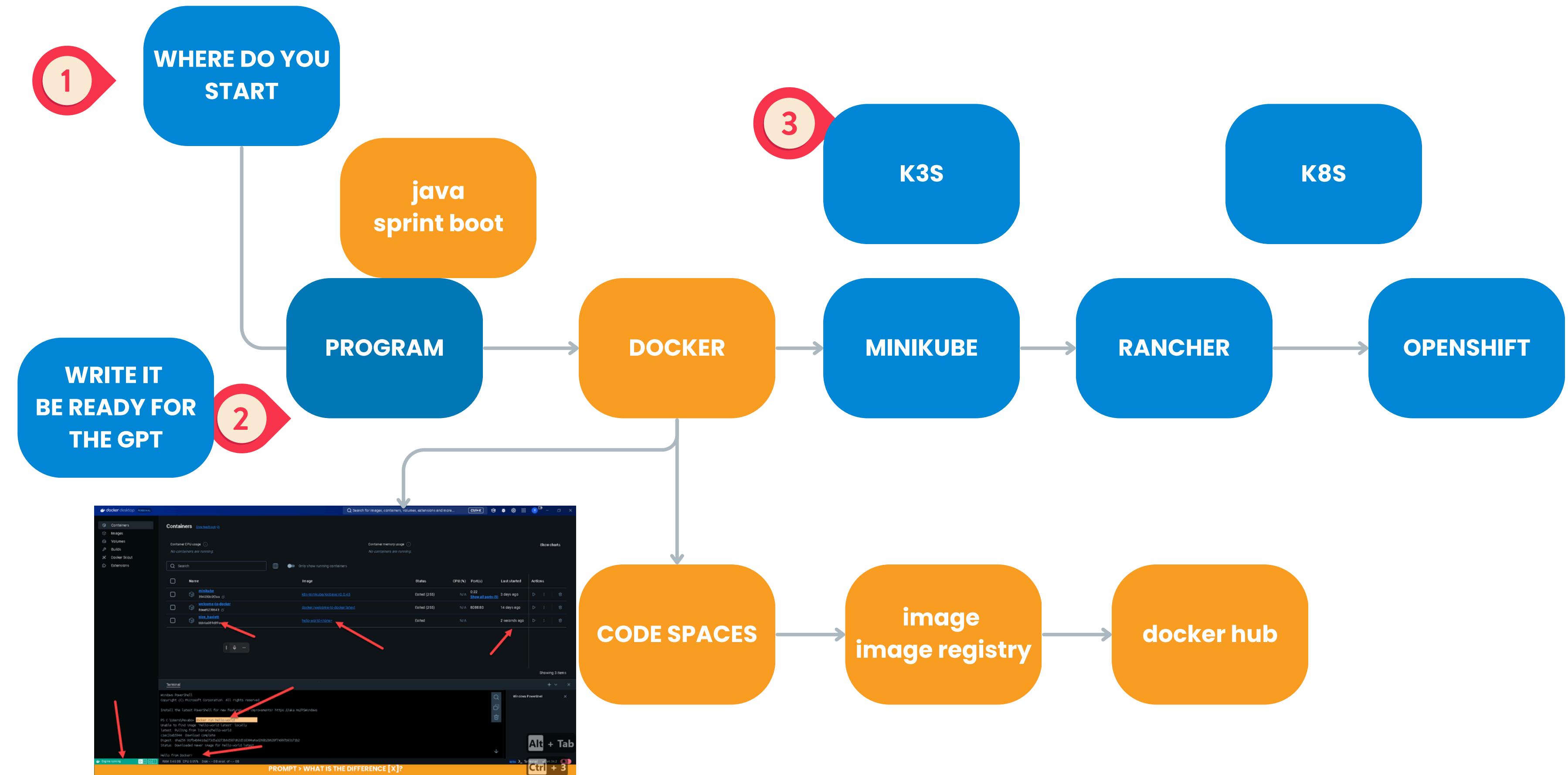
KUBERNETES TELL SHOW DO APPLY



SETUP A HELLO WORLD

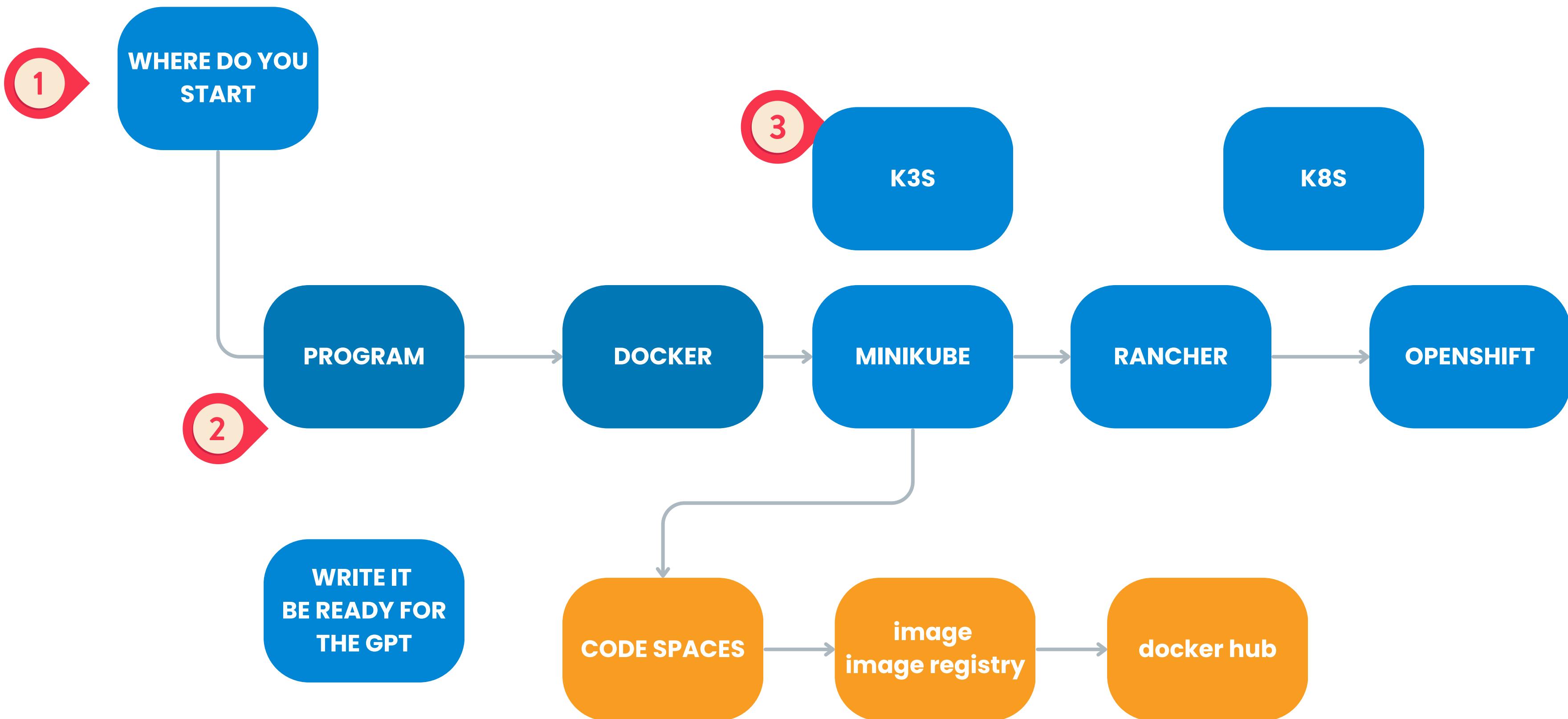


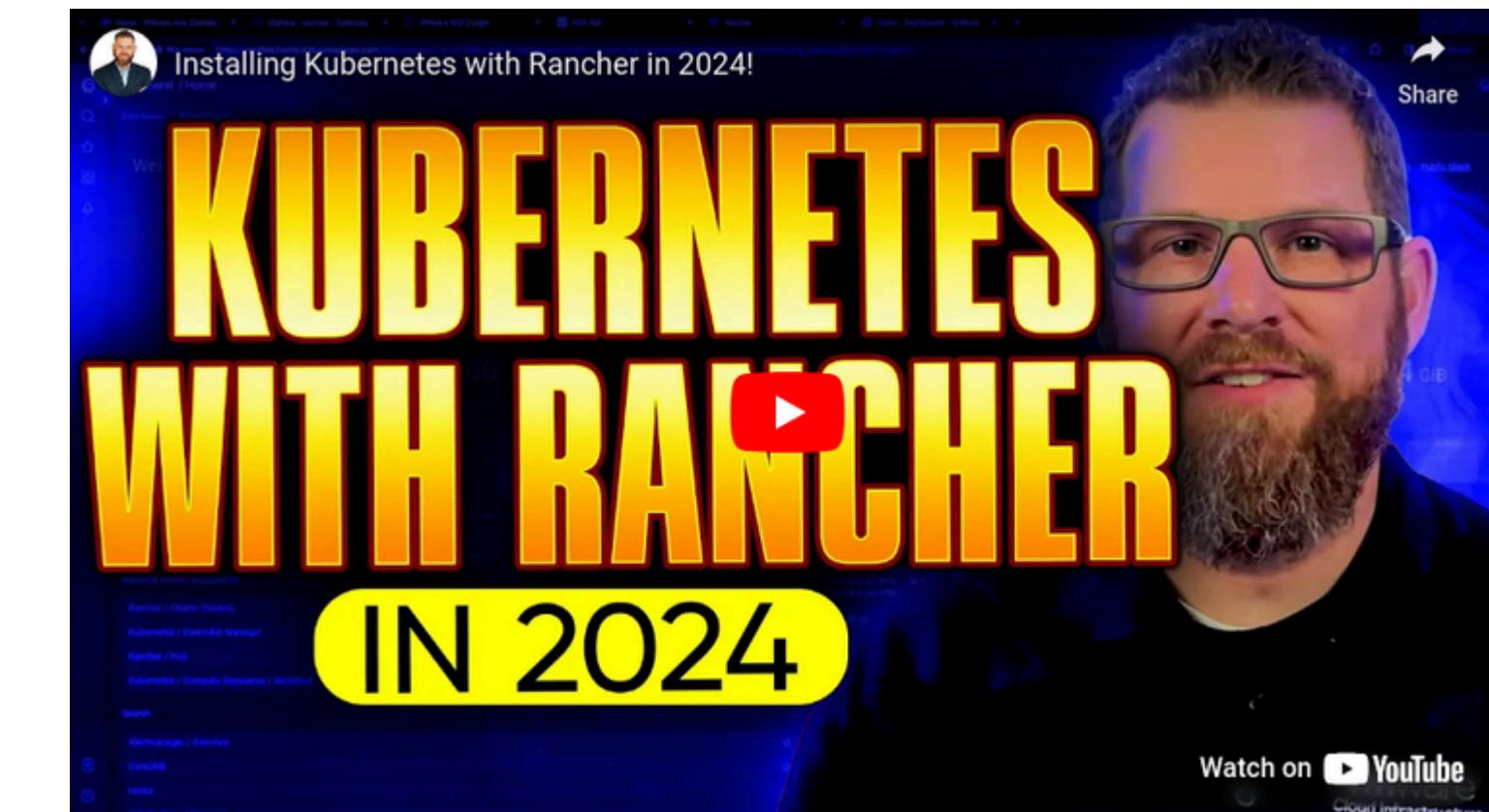
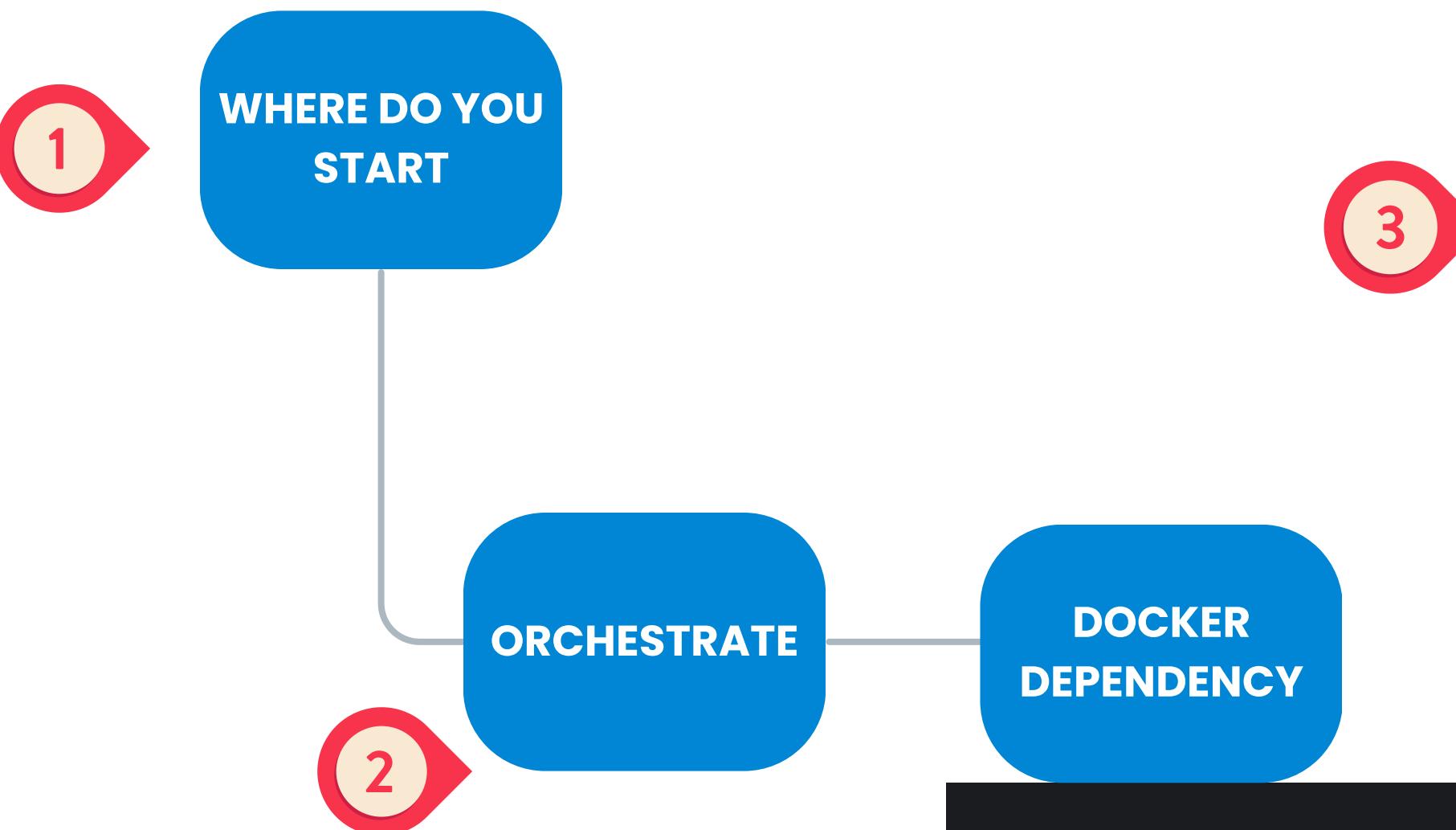
DOCKER



PROMPT > WHAT IS THE DIFFERENCE [X]?

MINIKUE





Howdy!
Welcome to Rancher

It looks like this is your first time visiting Rancher; if you pre-set your own bootstrap password, enter it here. Otherwise a random one has been generated for you. To find it:

For a "docker run" installation:

- Find your container ID with `docker ps`, then run:
- `docker logs container-id 2>&1 | grep "Bootstrap Password:"`

For a Helm installation, run:

```
kubectl get secret --namespace cattle-system bootstrap-secret -o go-template='{{.data.bootstrapPassword|base64decode}}\n{{"\n"}}'
```

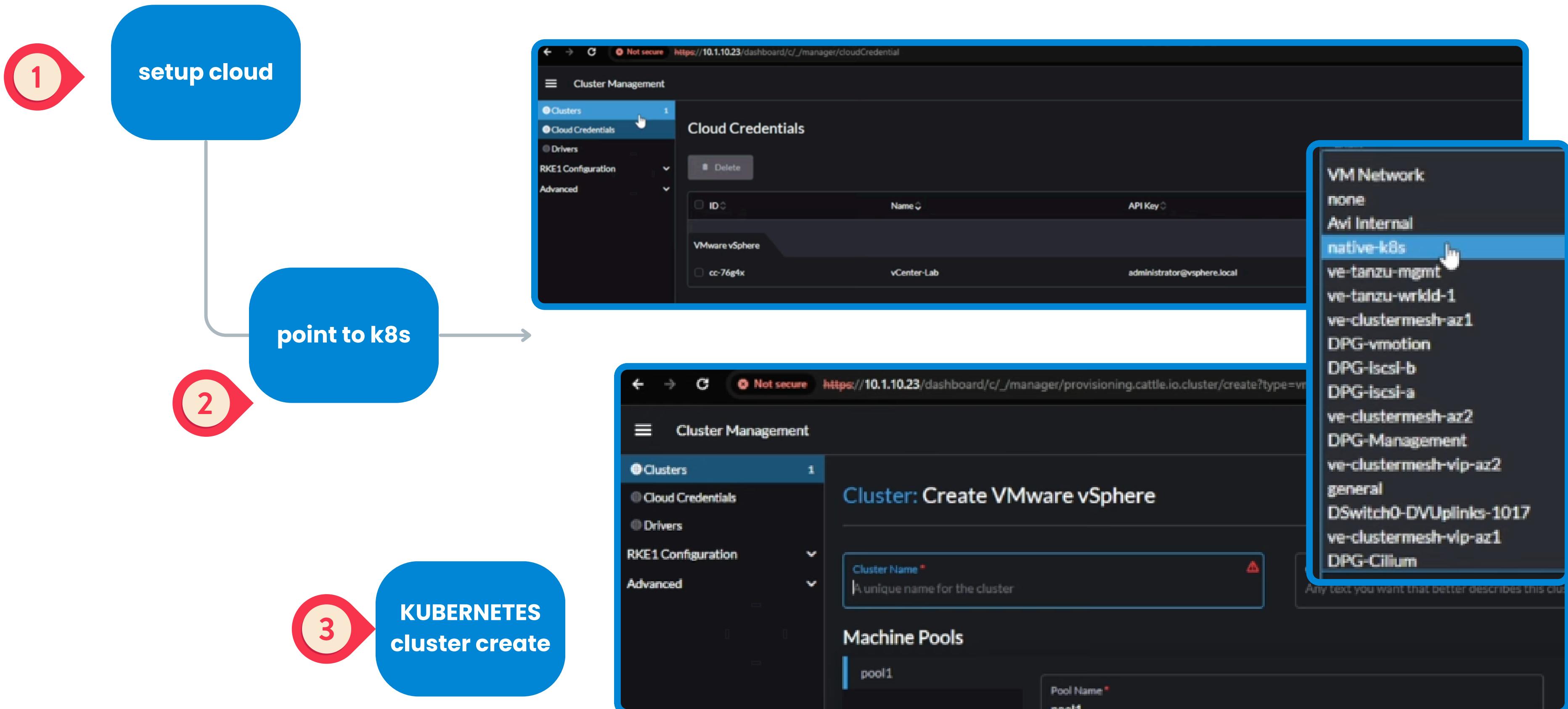
Demo: Intro to Rancher container management



Rancher by SUSE
21.7K subscribers

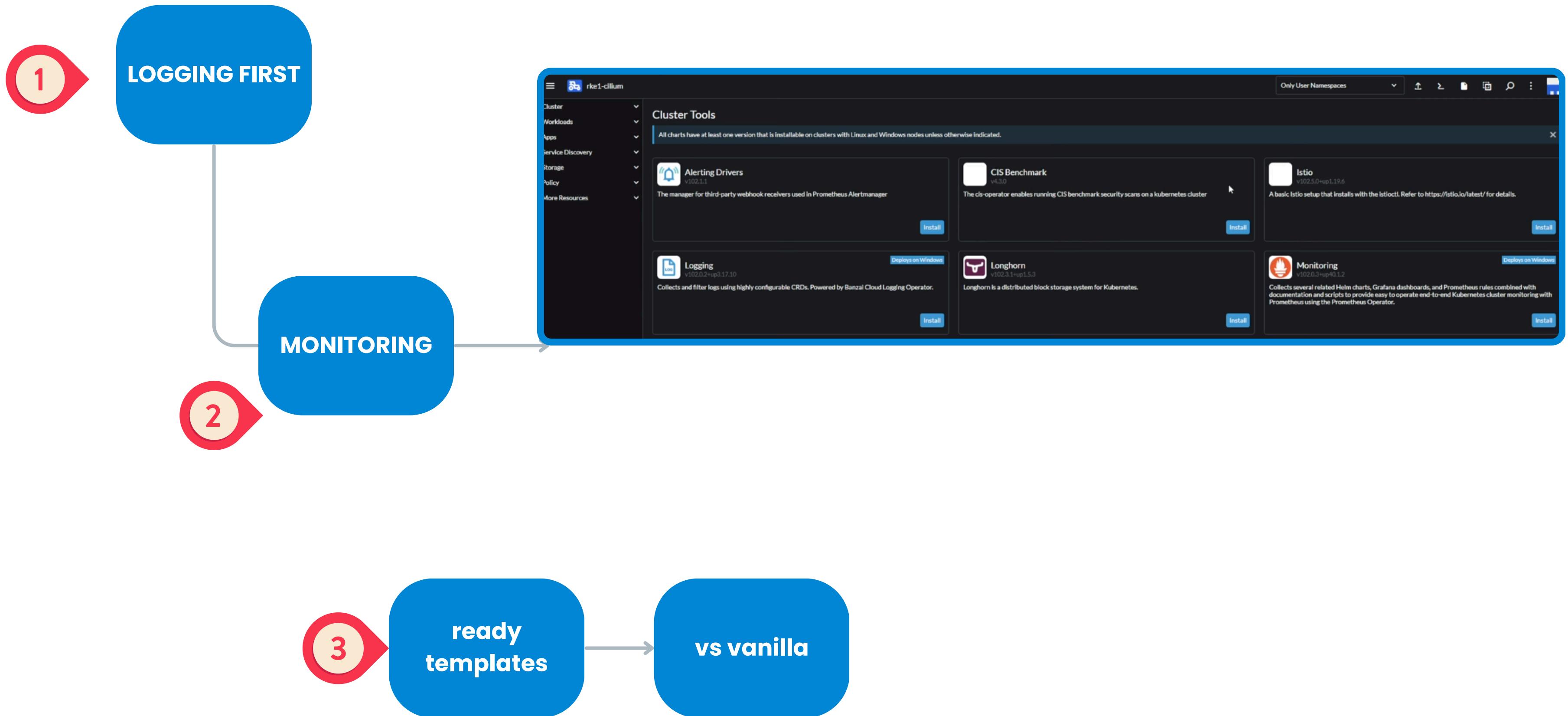
Subscribed

RANCHER DOCKER IMAGE



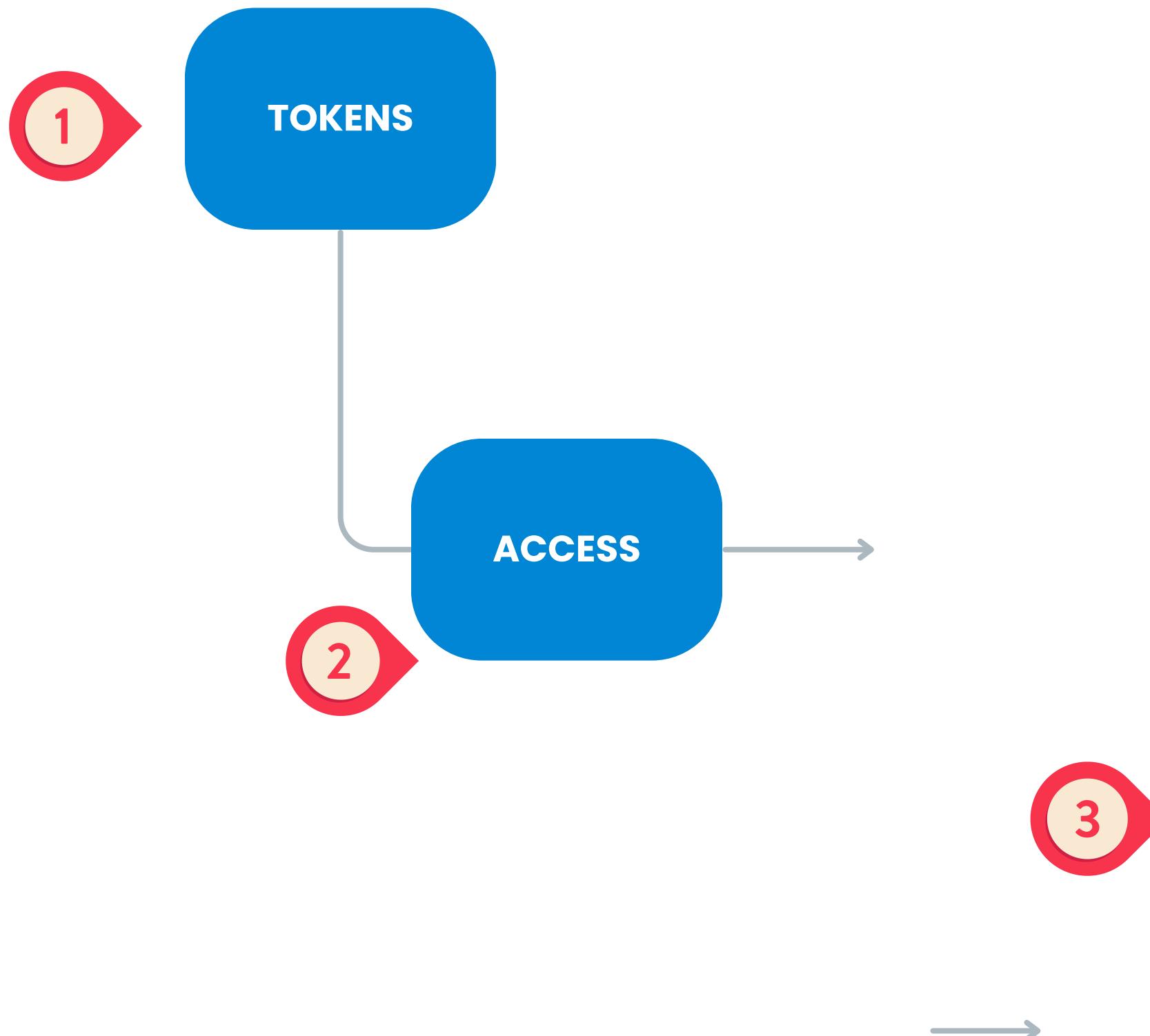
PROMPT > WHAT IS THE DIFFERENCE [X]?

RANCHER DOCKER IMAGE



PROMPT > WHAT IS THE DIFFERENCE [X]?

RANCHER CLIE



```
jdobyns ... | netobjex | sites | es.ops.netobjex.com rancher stacks
ID      NAME          STATE   CATALOG  SERVICES  SYSTEM  DETAIL
1st147 auth-netobjex-com healthy 1         false
jdobyns ... | netobjex | sites | es.ops.netobjex.com rancher up -d
[0000] Creating stack es-ops-netobjex-com
[0000] [elasticsearch]: Creating
[0000] Creating service elasticsearch
[0000] [elasticsearch]: Created
[0000] [elasticsearch-data]: Creating
[0000] [elasticsearch-data]: Created
[0000] [elasticsearch]: Starting
[0011] [elasticsearch]: Started
[0011] [elasticsearch-data]: Starting
[0011] [elasticsearch-data]: Started
jdobyns ... | netobjex | sites | es.ops.netobjex.com rancher stacks
ID      NAME          STATE   CATALOG  SERVICES  SYSTEM  DETAIL
1st147 auth-netobjex-com healthy 1         false
1st178 es-ops-netobjex-com healthy 1         false
jdobyns ... | netobjex | sites | es.ops.netobjex.com rancher rm es-ops-netobjex-com
1st178
jdobyns ... | netobjex | sites | es.ops.netobjex.com rancher stacks
ID      NAME          STATE   CATALOG  SERVICES  SYSTEM  DETAIL
1st147 auth-netobjex-com healthy 1         false
1st179 Default        healthy 0         false
jdobyns ... | netobjex | sites | es.ops.netobjex.com ??
```

PROMPT > WHAT IS THE DIFFERENCE [X]?

TOPIC

ENVIRONMENT

- Setting up a Kubernetes Environment
 - Installing Minikube
 - Setting up kubectl
- Hands-on: Deploying a simple application

TOPIC CORE COMPONENTS

- Deep Dive into Pods and Nodes
- Understanding ReplicaSets and Deployments

TOPIC CORE COMPONENTS

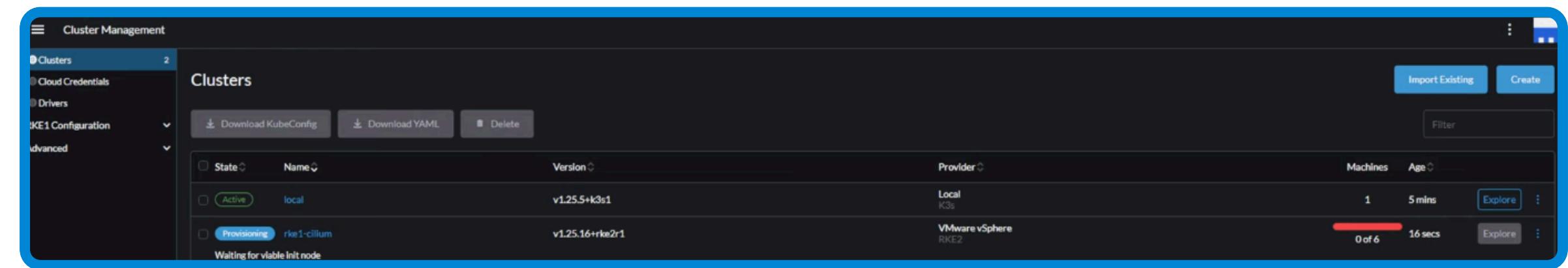
- Hands-on: Creating and managing Pods
- Working with ReplicaSets and Deployments

TOPIC

NETWORKING

- Kubernetes Networking Basics
- Services: ClusterIP, NodePort, LoadBalancer

1

setup**DIFFERENT TYPES**

2

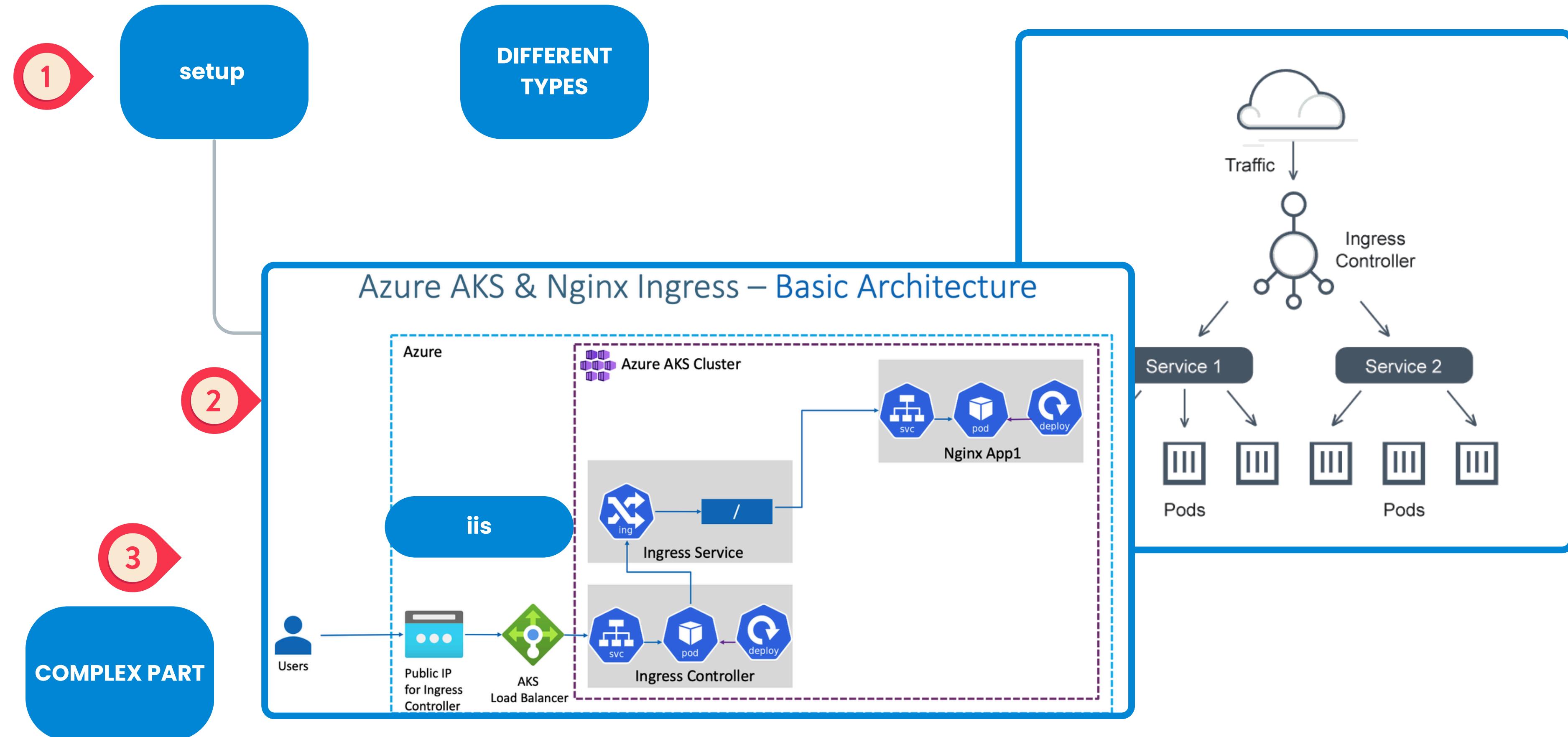
**Copilot**

CNI in Kubernetes stands for **Container Network Interface**. It is a standardized interface between container runtimes and networking plugins, providing a consistent and pluggable networking model for containerized environments [1](#).

3

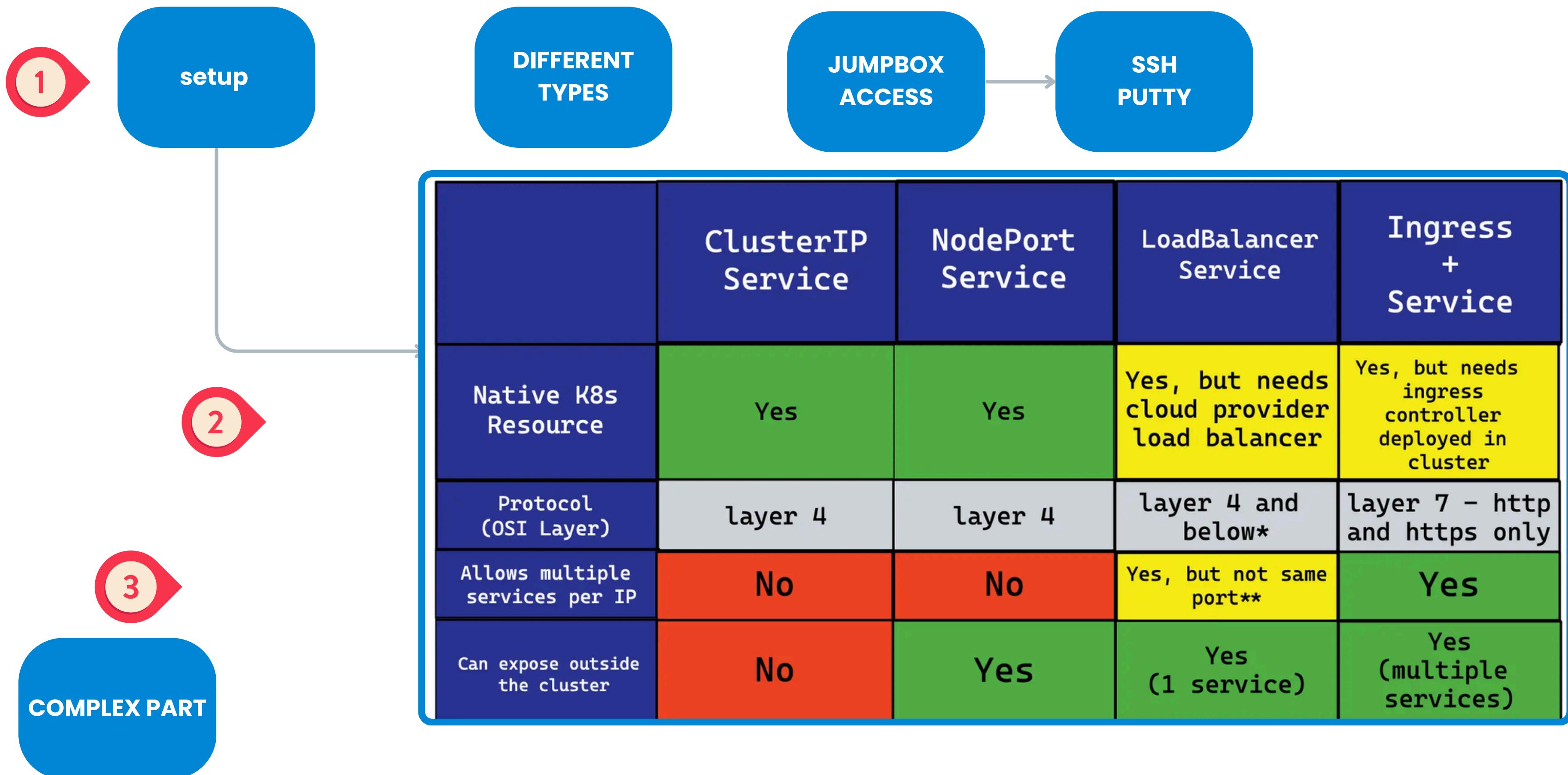
COMPLEX PART

INGRESS



PROMPT > WHAT IS THE DIFFERENCE [X]?

INGRESS



PROMPT > WHAT IS THE DIFFERENCE [X]?

TOPIC SERVICES

- Hands-on: Creating and configuring Services
- Introduction to Ingress Controllers

TOPIC STORAGE

- Storage Concepts: Volumes, Persistent Volumes, Persistent Volume Claims
- Storage Classes and Dynamic Provisioning

TOPIC STORAGE

- Hands-on: Configuring Persistent Storage
- Working with different storage types (e.g., local, cloud-based)

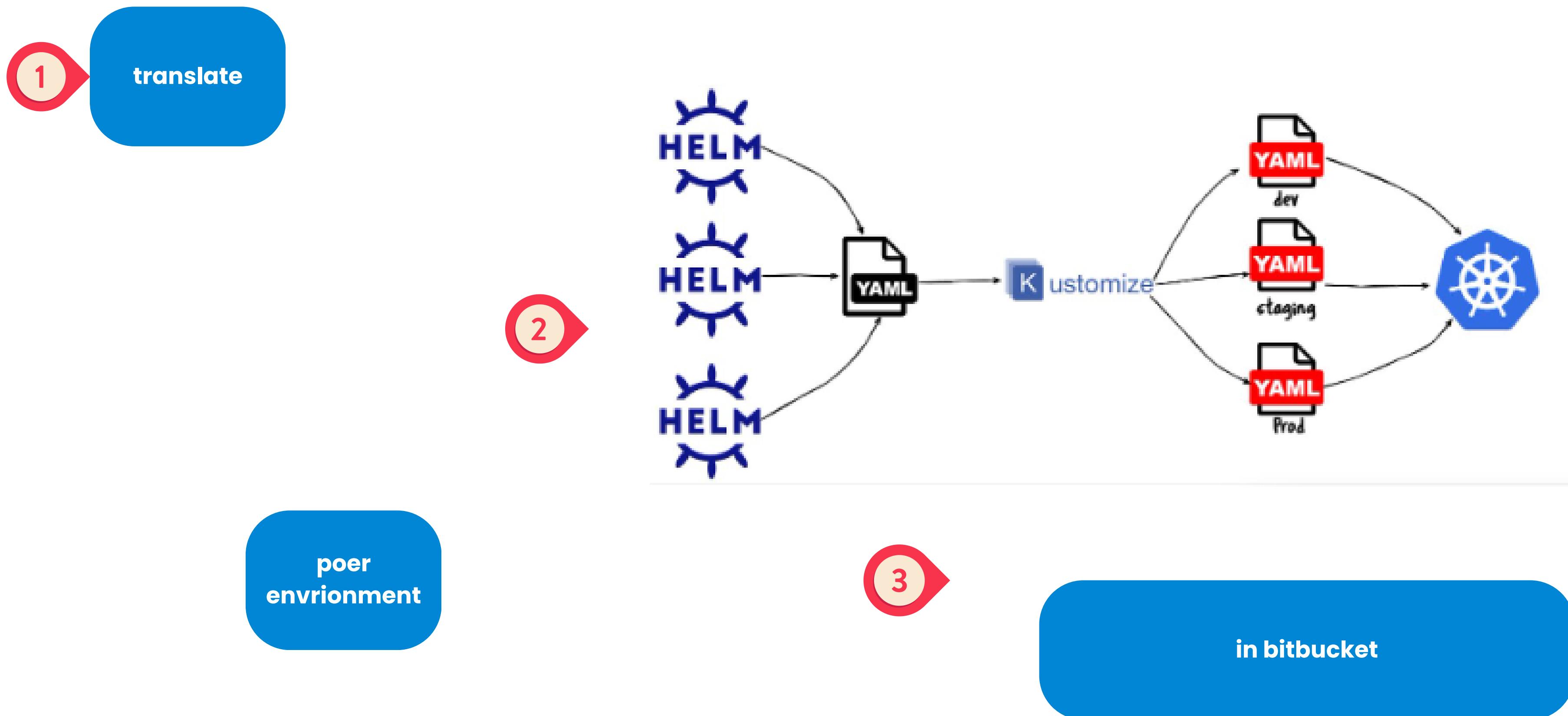
TOPIC CONFIGURATE

- Working with Secrets
- Understanding ConfigMaps

TOPIC CONFIG

- Hands-on: Creating and managing ConfigMaps and Secrets
- Best practices for handling sensitive data

KUSTOMIZE – ARGOCD- ENVIROMENT VARIABLES GIT

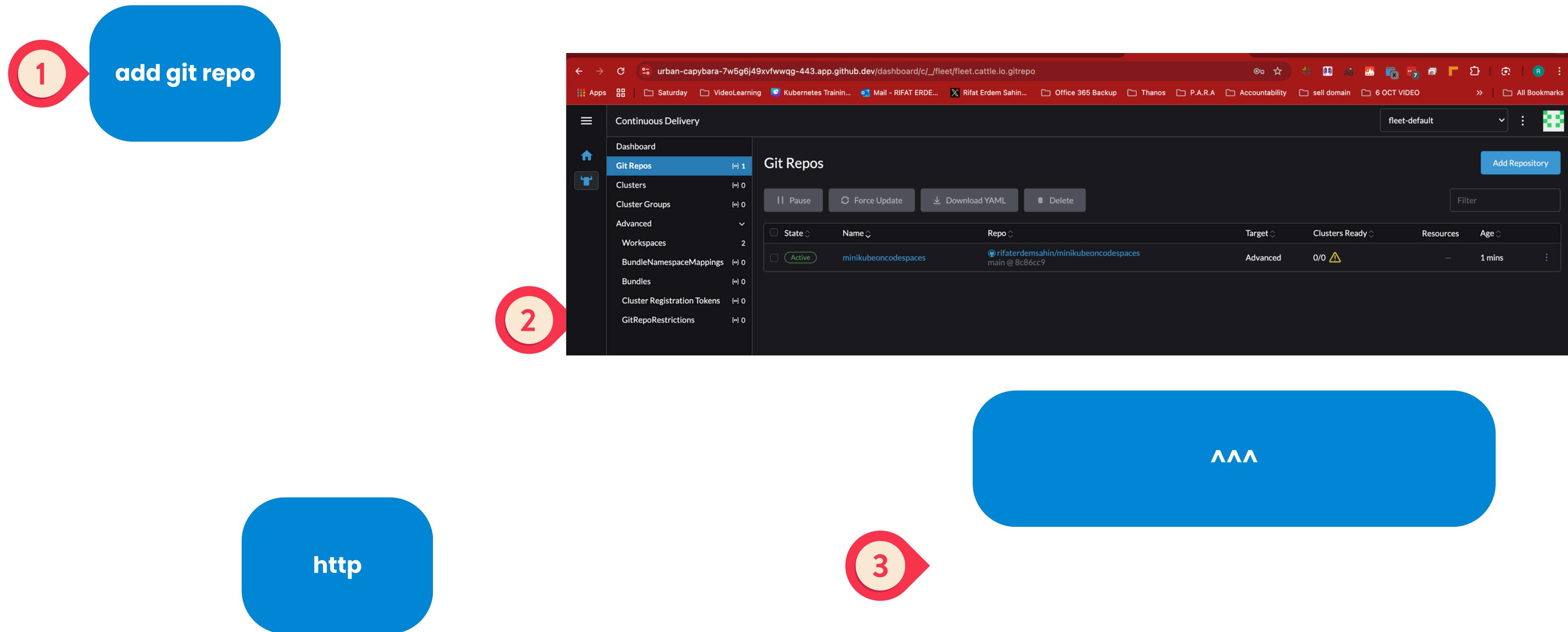


TOPIC

LIFE CYCLE

- Rolling Updates and Rollbacks
- Horizontal Pod Autoscaling

GIT SYNC – ARGO LIKE



PROMPT > how do i use git repos in Rancher for CI CD

TOPIC

LIFE CYCLE

- Hands-on: Implementing rolling updates and rollbacks
- Setting up and testing Horizontal Pod Autoscaling

TOPIC SECURITY

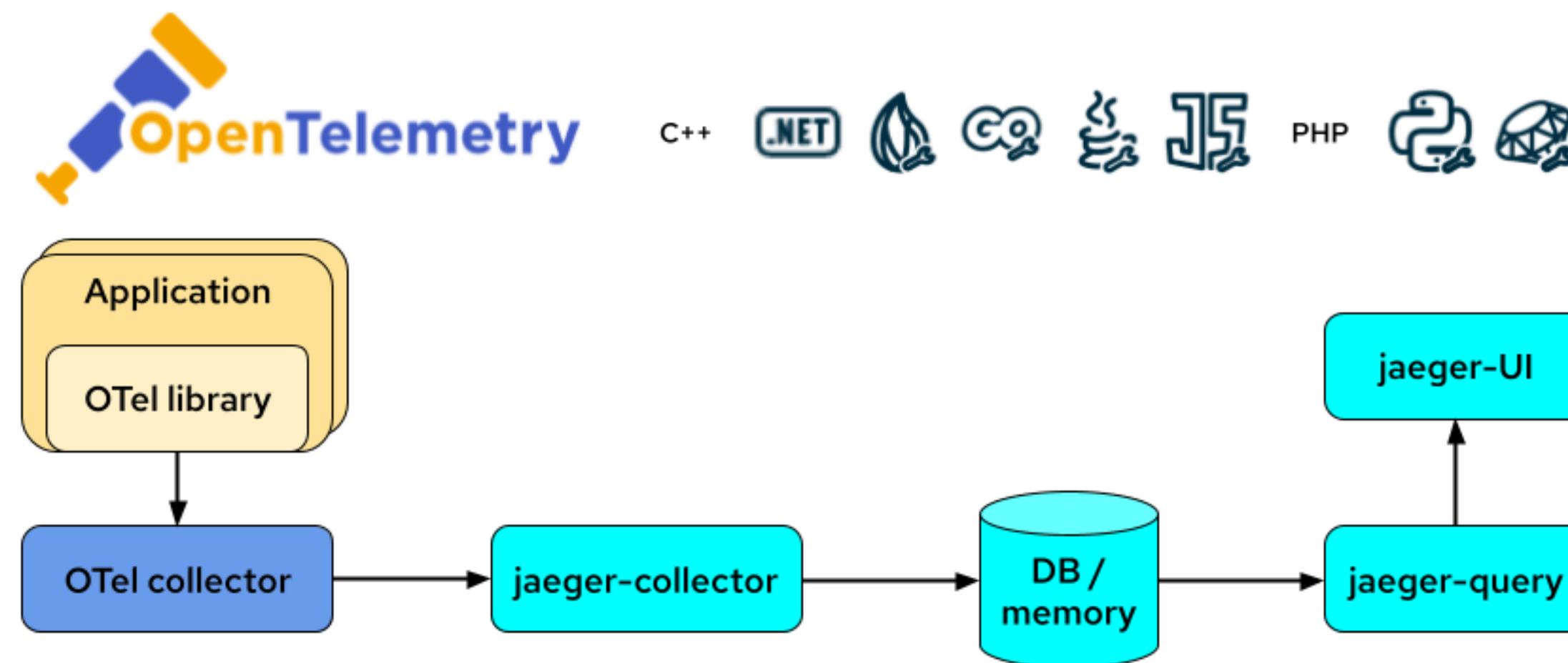
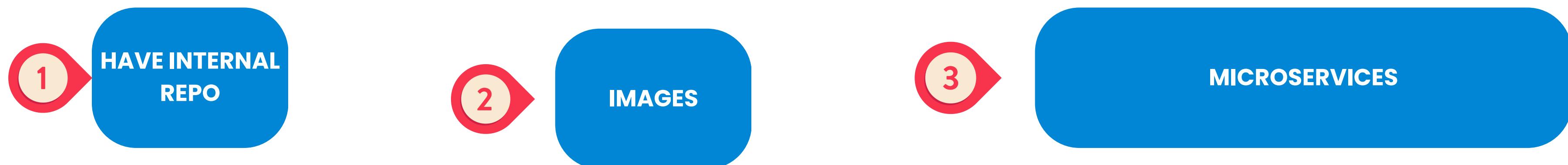
- Kubernetes Security Overview
- Role-Based Access Control (RBAC)

TOPIC SECURITY

- Hands-on: Configuring RBAC
- Implementing Network Policies

TOPIC MONITORING

- Monitoring Kubernetes Clusters
- Tools: Prometheus, Grafana



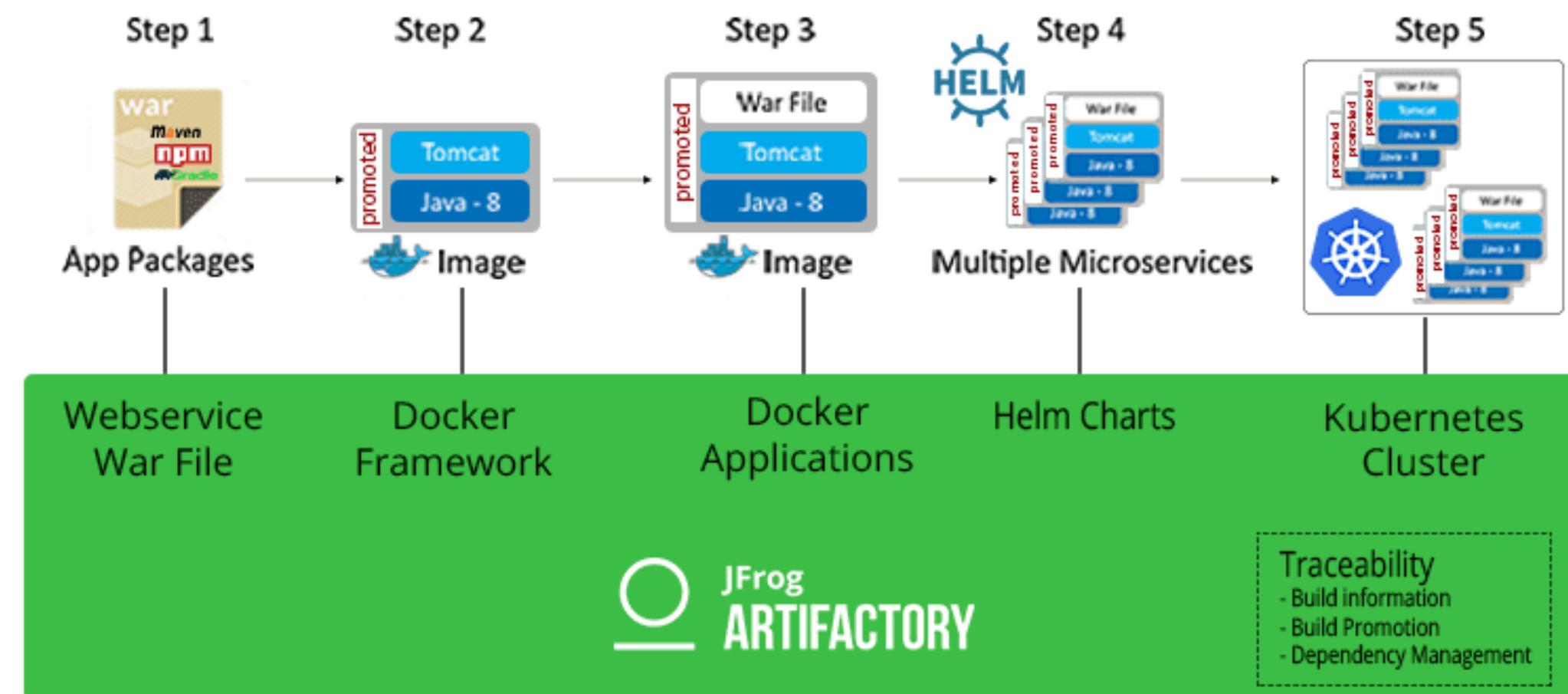
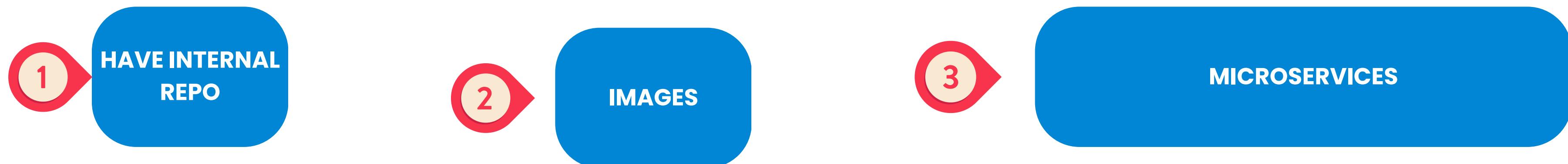
TOPIC MONITORING

- Hands-on: Setting up monitoring with Prometheus and Grafana
- Introduction to logging with ELK stack

TOPIC PACKAGE M.

- Introduction to Helm
- Helm Charts and Repositories

ARTIFACTORY

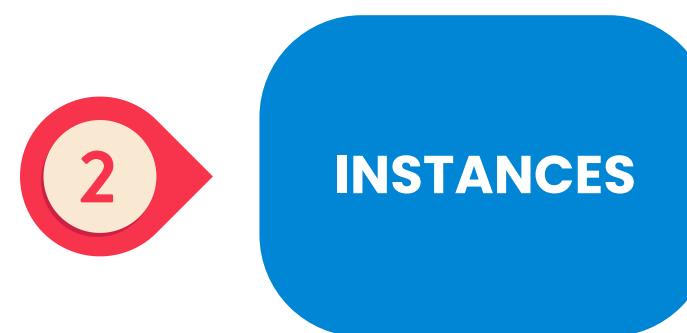


PROMPT > create image in text blaze

TOPIC PACKAGE M.

- Hands-on: Installing and managing applications with Helm
- Creating custom Helm charts

OPERATORS



TOPIC ADVANCED

- Custom Resource Definitions (CRDs)
- Operators

CUSTOMIZE PROCESS

1

ORIGINAL DATA



2

ASK IT WITH THE PARTS

To use Kustomize for deploying multiple microservices to OpenShift, you'll structure your files in a directory-based layout. Each microservice will have its own base configuration, and you'll create overlays for specific customizations. Here's how you can structure it:

use the kustomize for this process

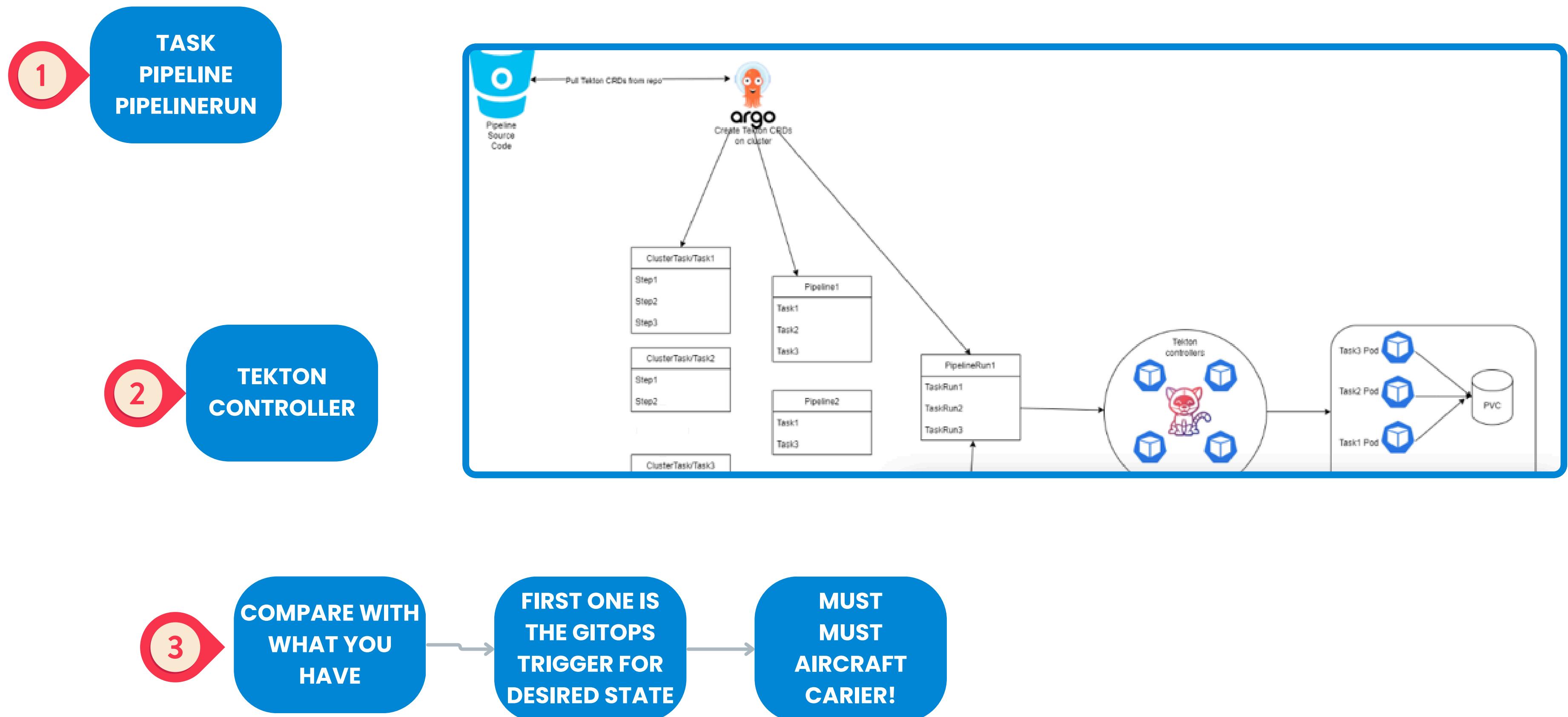
```
base
├── kustomization.yaml
├── service-a
│   ├── deployment.yaml
│   ├── service.yaml
│   └── route.yaml
└── service-b
    ├── deployment.yaml
    ├── service.yaml
    └── route.yaml
```

3

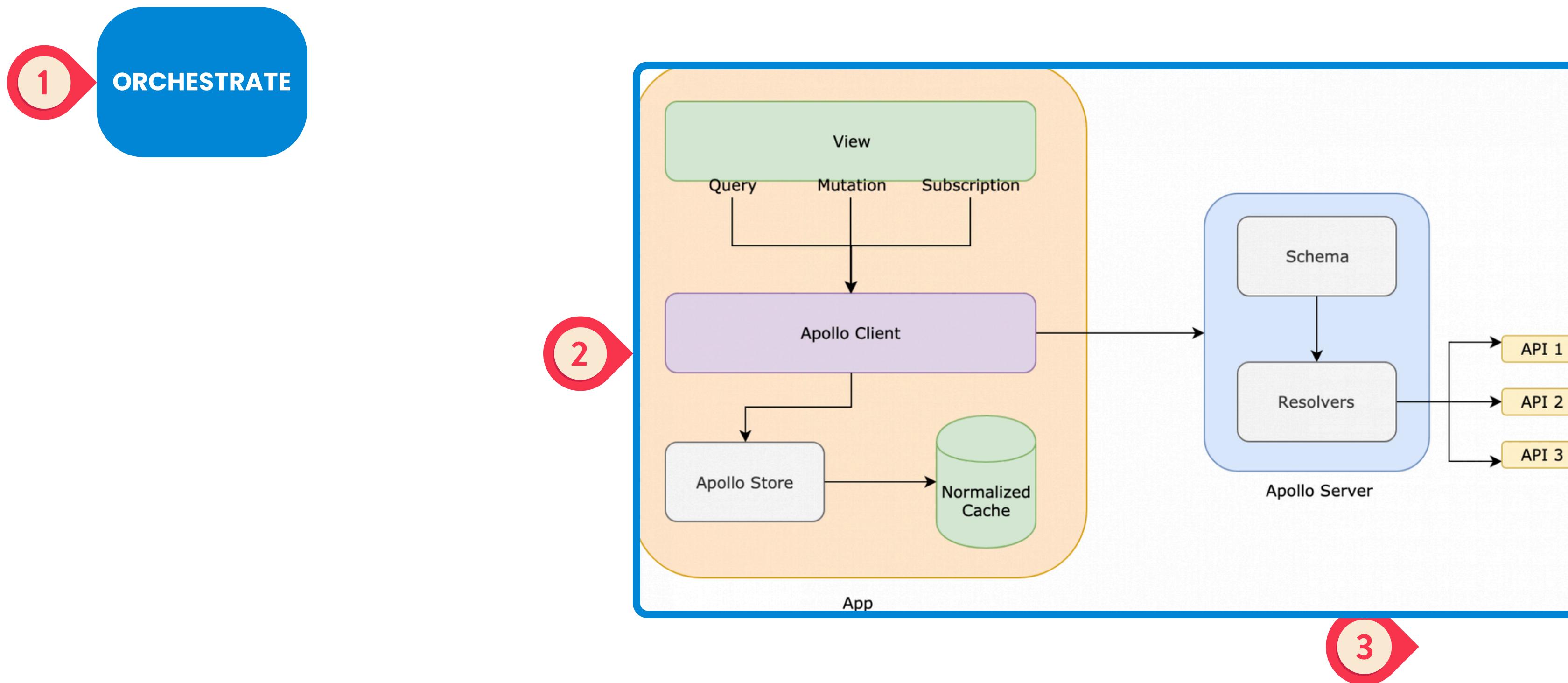
COMPARE WITH WHAT YOU HAVE

```
overlays
├── dev
│   ├── kustomization.yaml
│   └── patch-deployment.yaml
└── prod
    ├── kustomization.yaml
    └── patch-deployment.yaml
```

LINTING IT



APOLLO



FEATURE TAGS

1

ORCHESTRATE

2

Kubernetes: Labels, Selectors and Annotations

labels: key-value pairs used to identify and categorize Kubernetes objects

selectors: select a specific subset of objects based on their labels

annotations: key-value pairs used to provide additional information about an object.

(not used by selector for identifying and selecting objects)



Kubernetes

labels

Pod	app web1
Pod	env dev
Pod	version 1.2.3 annotations

Pod	app web1
Pod	env prod
Pod	version 1.2.2 annotations

Pod	app web2
Pod	env dev
Pod	version 1.2.2 annotations

Pod	app web2
Pod	env prod
Pod	version 1.2.1 annotations

selector

↓
app=web1
env=prod

Pod	app web1
Pod	env prod



Restaurant

categories

course appetizer
dietary vegetarian
calories 100 note

course entree
dietary low-fat
calories 700 note

course entree
dietary gluten-free
calories 400 note

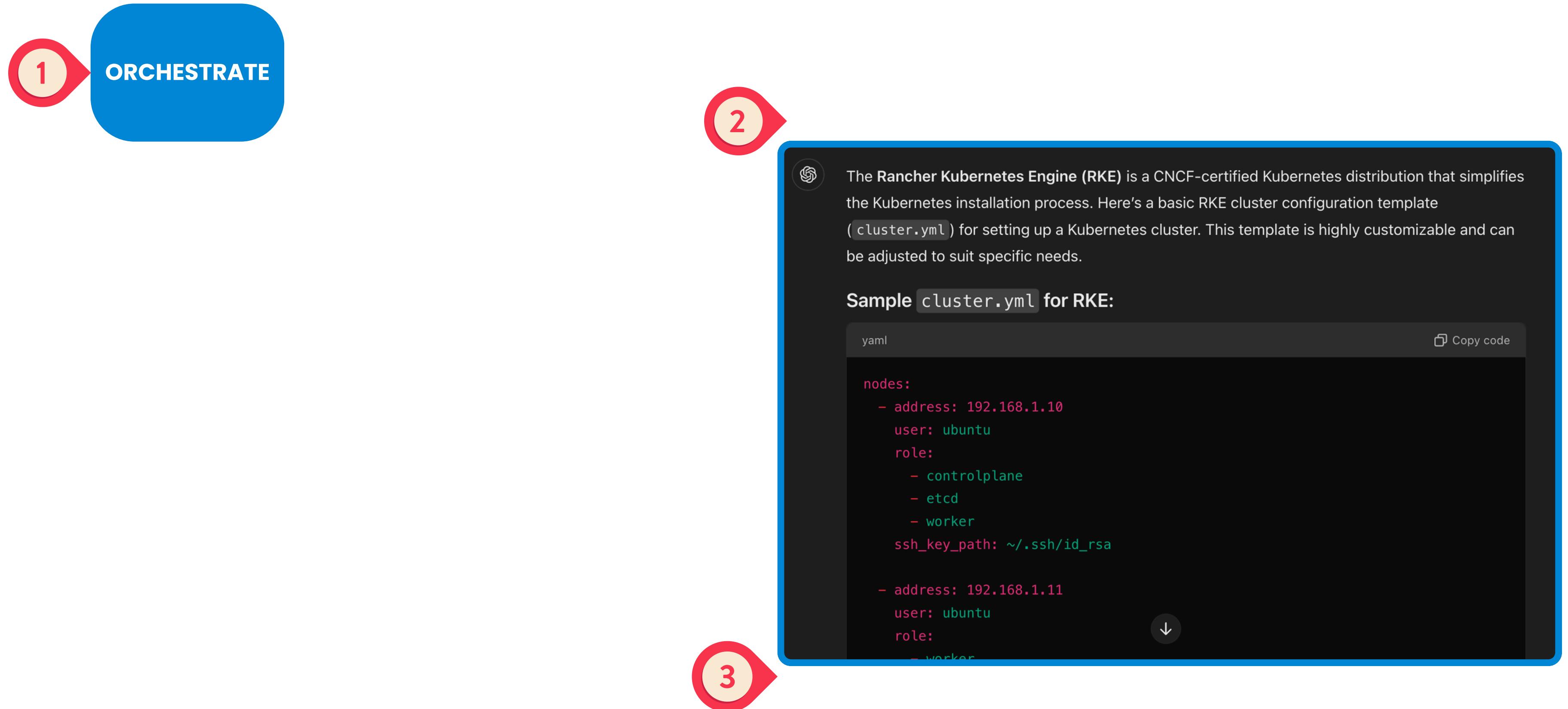
course dessert
dietary gluten-free
calories 250 note

course=entree
dietary=gluten-free

3

PROMPT > create image in text blaze

RKE TEMPLATE



TOPIC ADVANCED

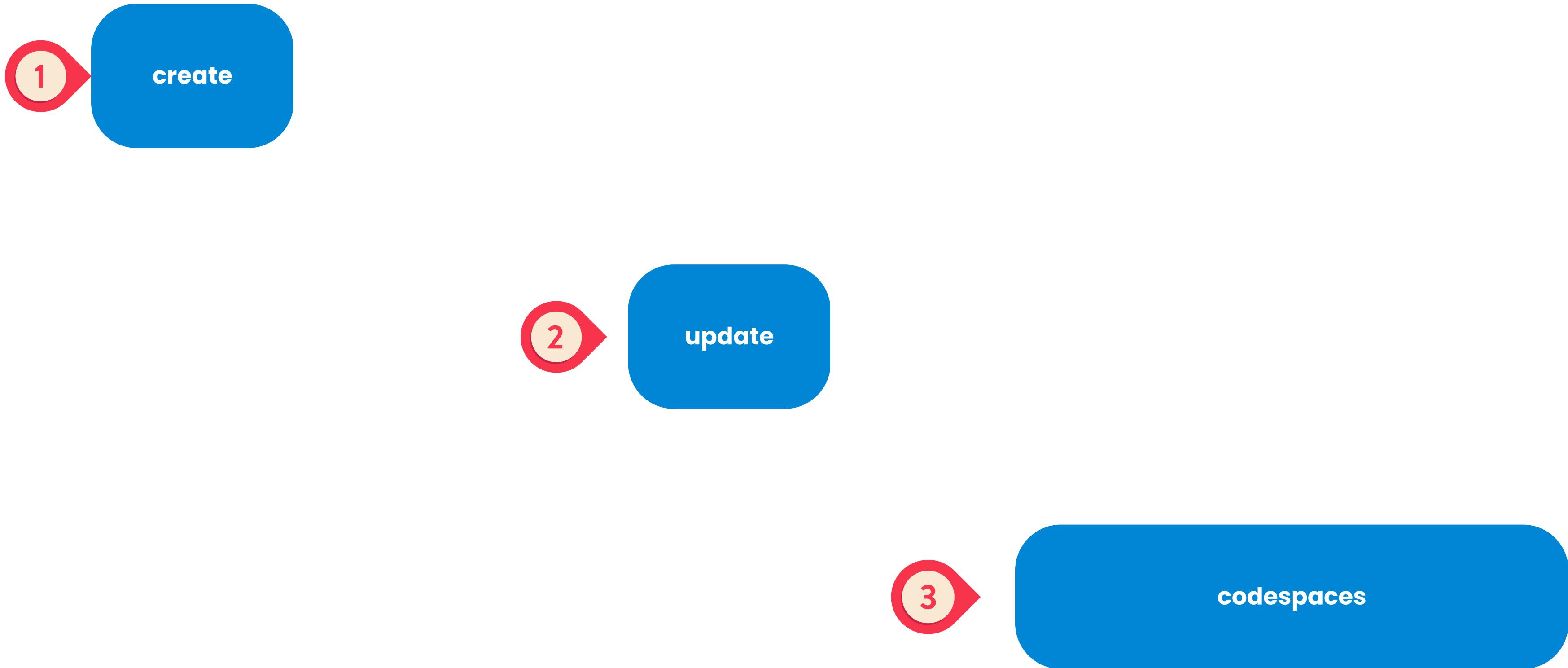
- Hands-on: Creating and managing CRDs
- Working with Kubernetes Operators

TOPIC

TROUBLESHOOT

- Common Kubernetes Issues and Troubleshooting Techniques
- Best Practices for Kubernetes Deployment and Management

CERTIFICATES



TOPIC

TROUBLESHOOT

- Hands-on: Troubleshooting common issues
- Implementing best practices in a sample application

TOPIC CAPSTONE

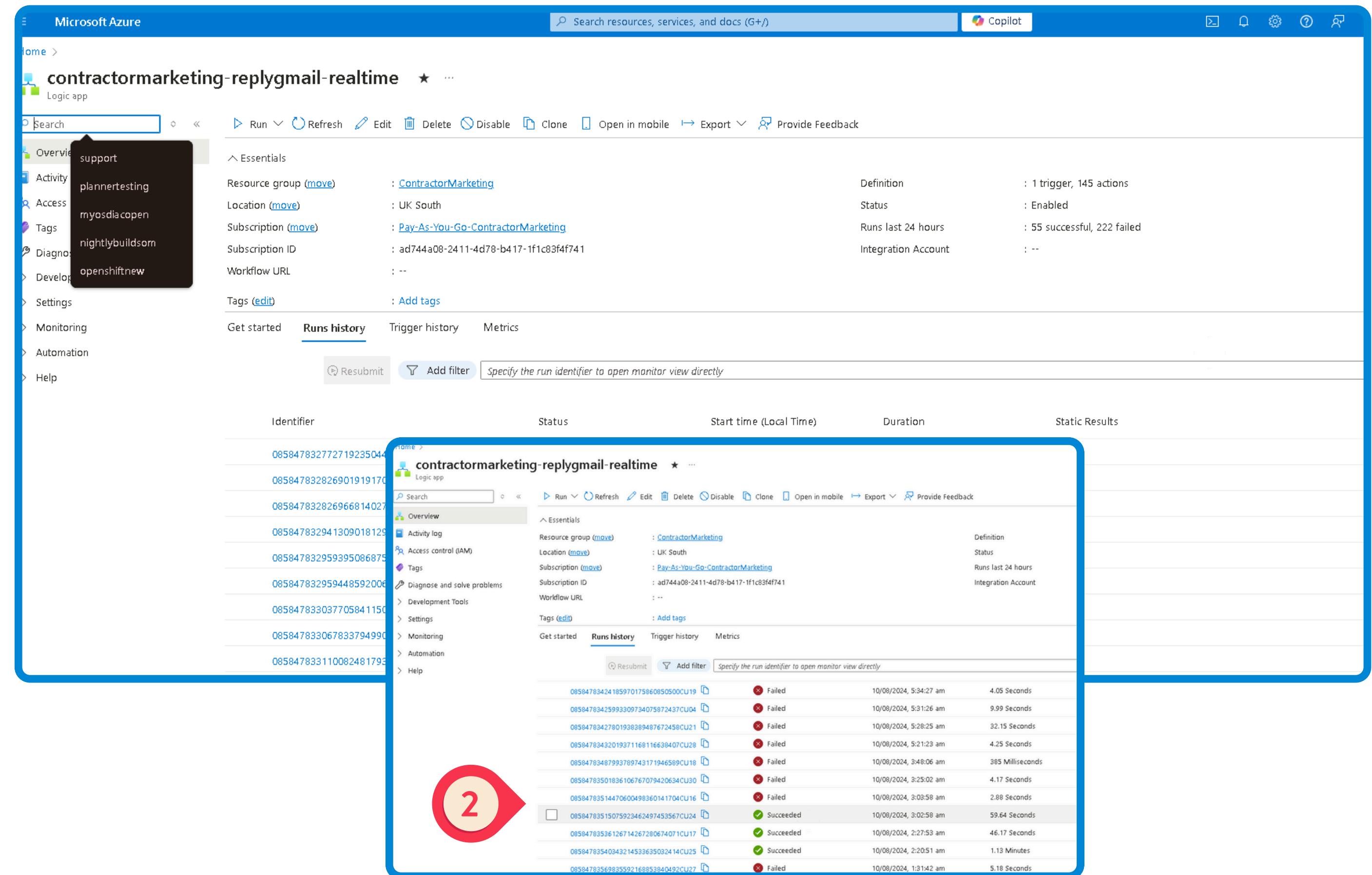
- Design and deploy a comprehensive application on Kubernetes
- Implement all learned concepts: deployment, networking, storage, security, monitoring, and Helm
- Present the project and receive feedback

CAPSTONE PROJECT

AI DAILY USE
CASE



1



Microsoft Azure

Search resources, services, and docs (G+)

Copilot

contractormarketing-replygmail-realtime

Logic app

Overview

Activity

Access

Tags

Diagnostic logs

Development tools

Settings

Monitoring

Automation

Help

support

plannertesting

myosdiacopen

nightlybuildsom

openshiftnew

Resource group (move) : ContractorMarketing

Location (move) : UK South

Subscription (move) : Pay-As-You-Go-ContractorMarketing

Subscription ID : ad744a08-2411-4d78-b417-1f1c83f4f741

Workflow URL : --

Tags (edit) : Add tags

Definition : 1 trigger, 145 actions

Status : Enabled

Runs last 24 hours : 55 successful, 222 failed

Integration Account : --

Get started Runs history Trigger history Metrics

Identifier

Status

Start time (Local Time)

Duration

Static Results

085847832772719235044 Failed 10/08/2024, 5:34:27 am 4.05 Seconds

085847832826901919170 Failed 10/08/2024, 5:31:26 am 9.99 Seconds

085847832826966814027 Failed 10/08/2024, 5:28:25 am 32.15 Seconds

085847832941309018129 Failed 10/08/2024, 5:21:23 am 4.25 Seconds

085847832959395086875 Failed 10/08/2024, 3:48:06 am 385 Milliseconds

085847832959448592006 Failed 10/08/2024, 3:25:02 am 4.17 Seconds

085847833037705841150 Failed 10/08/2024, 3:03:58 am 2.88 Seconds

085847833067833794990 Failed 10/08/2024, 3:02:58 am 59.64 Seconds

085847833110082481793 Failed 10/08/2024, 2:27:53 am 46.17 Seconds

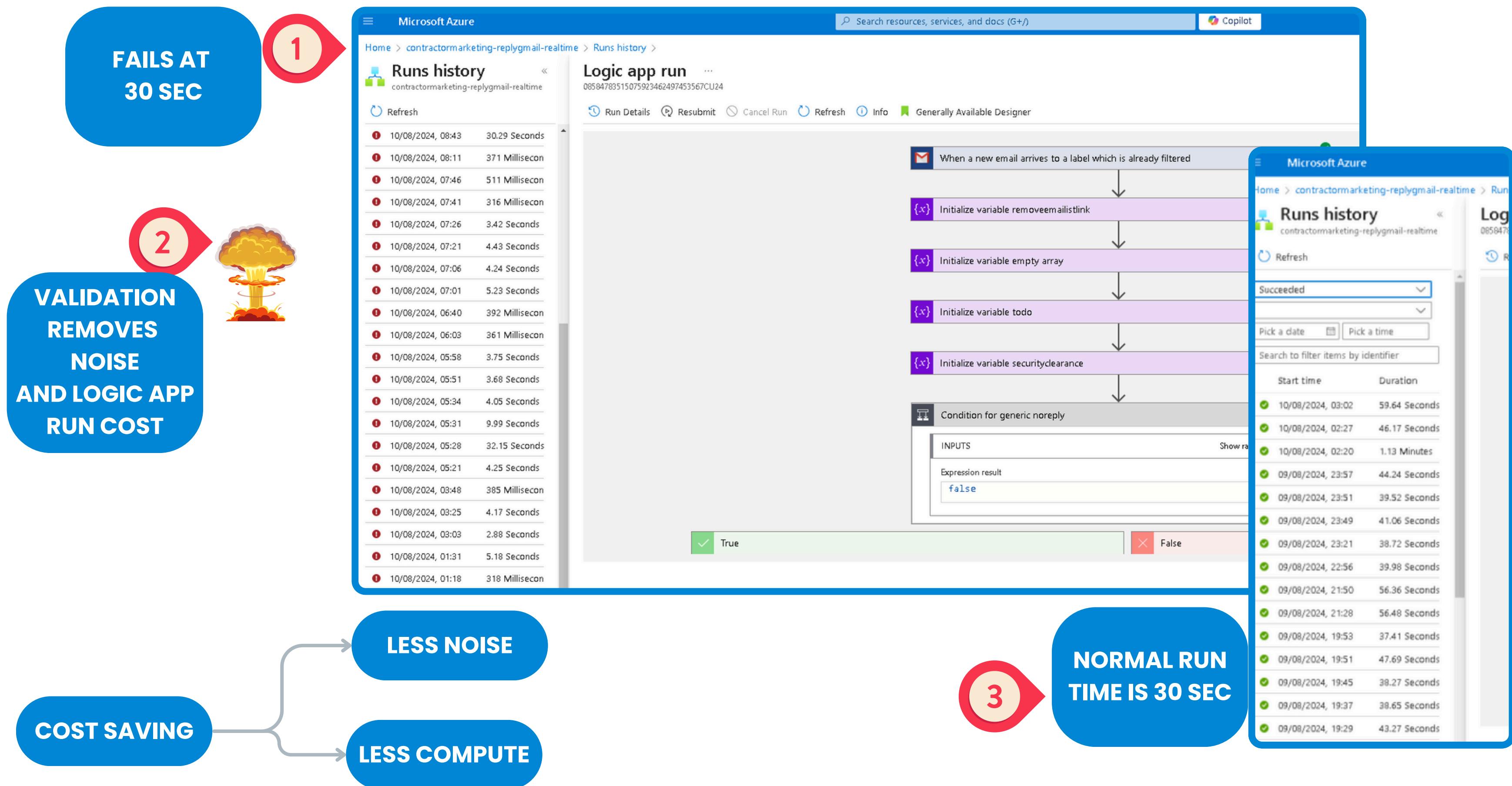
08584783569835592168853840492CU27 Failed 10/08/2024, 2:20:51 am 1.13 Minutes

08584783569835592168853840492CU27 Succeeded 10/08/2024, 1:31:42 am 5.18 Seconds

3

PROMPT > HOW CAN I MAKE EMAIL AUTOMATION SYSTEM BETTER BY USING AI AT THE MOMENT I SEND THE COVER LETTER AND VALIDATE

COST SAVINGS



PROMPT > HOW CAN I MAKE EMAIL AUTOMATION SYSTEM BETTER BY USING AI AT THE MOMENT I SEND THE COVER LETTER AND VALIDATE

DAY 2

DAY 3

DAY 4

DAY 5

DAY 6

DAYZ

DAY 8

DAY 9

DAY 10

DAY 11

DAY 12