Serverless
for
Pythonistas

Jonatas Baldin “jojo”

Developer @ Maecenas

Creator of Serverless Brasil

@jonatasbaldin

servers
to
serverless

application

container

OS

virtual machine

bare metal

application

container

we cared about everything

os

virtual machine

bare metal

application

container

OS

virtual machine

bare metal

application

container

os

virtual machin

bare metal

application

container

os

virtual machin

bare metal

core application

container

os

virtual machin

bare metal

core application

container

OS

virtual machin

bare metal

Third Party
Auth Service

Third Party
File Storage

Third Party
Database

Third Party
Queue System

less servers

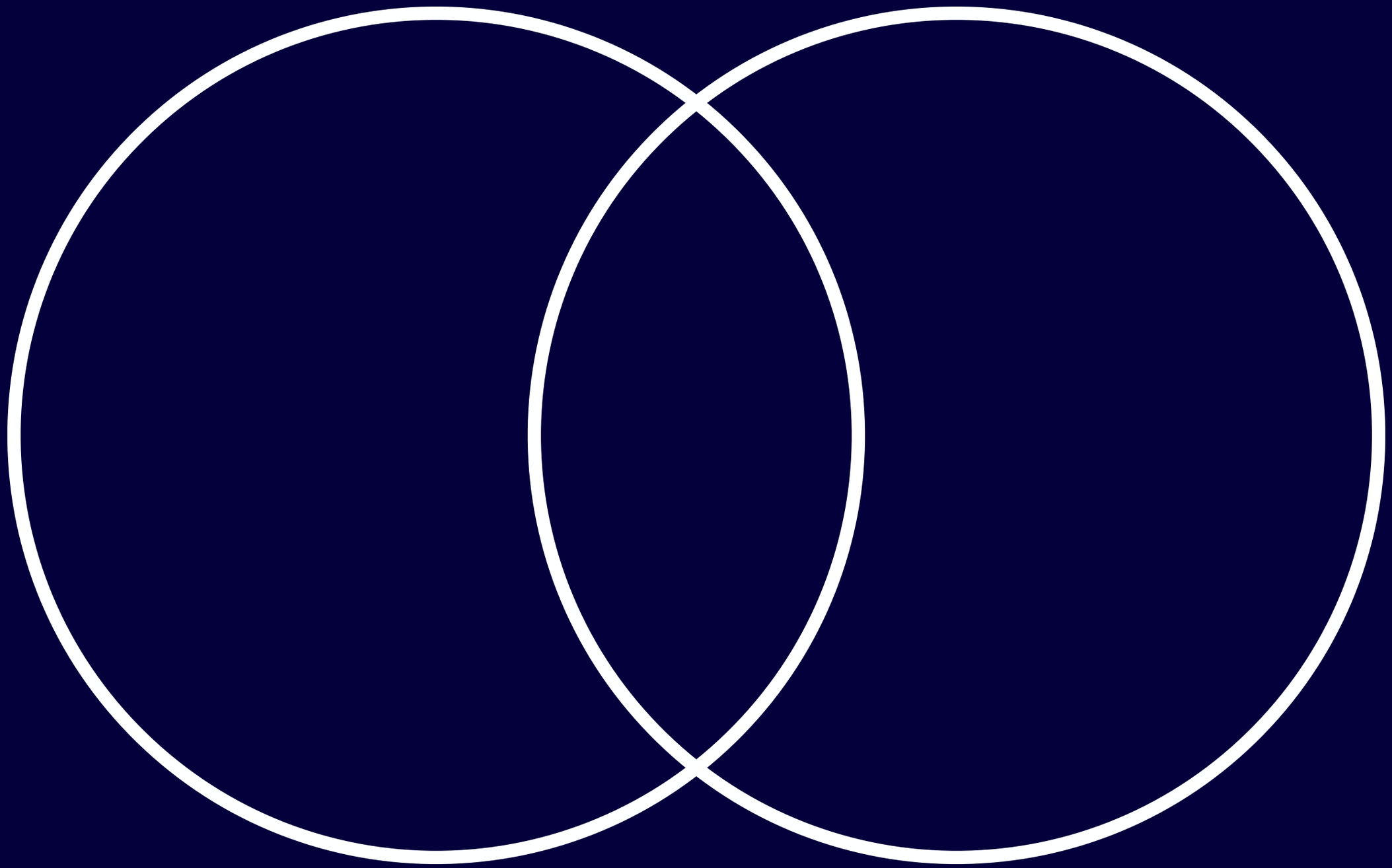
more services

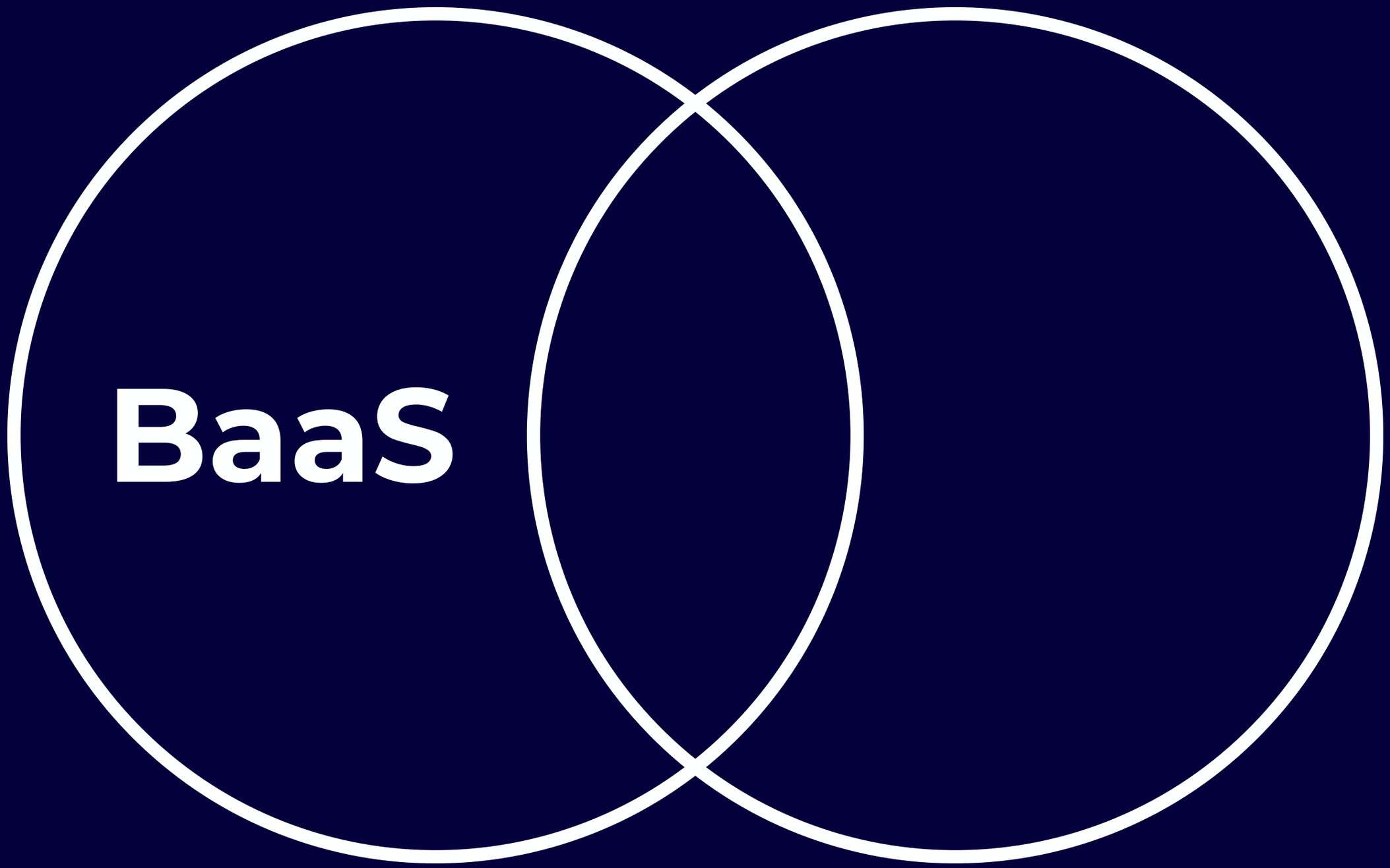
why should *you* care?

focus on problem solving

we are in a constant search for abstraction and single purpose

so, what is Serverless?

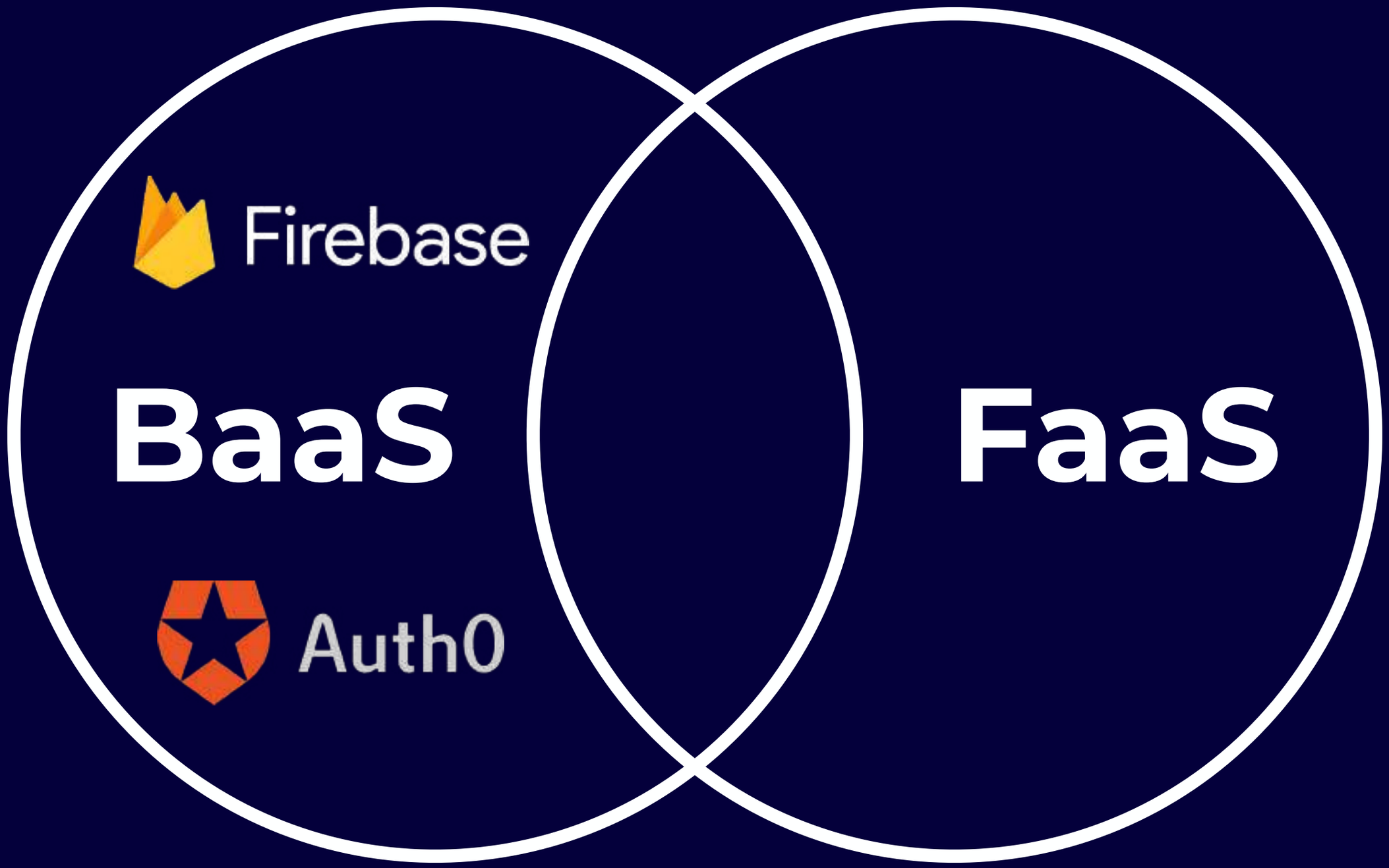



BaaS

BaaS

Auth0

Firebase
BaaS
Auth0


Firebase
BaaS
FaaS
Auth0

BaaS

FaaS

Firebase

BaaS

Auth0

FaaS

Firebase
BaaS
FaaS
Auth0

✨ FaaS ✨

⚡ FaaS Principles ⚡

Event Driven
Ephemeral Environments
Built in Scalability
Pay by Execution
Lack of Management

⚡ FaaS Principles ⚡

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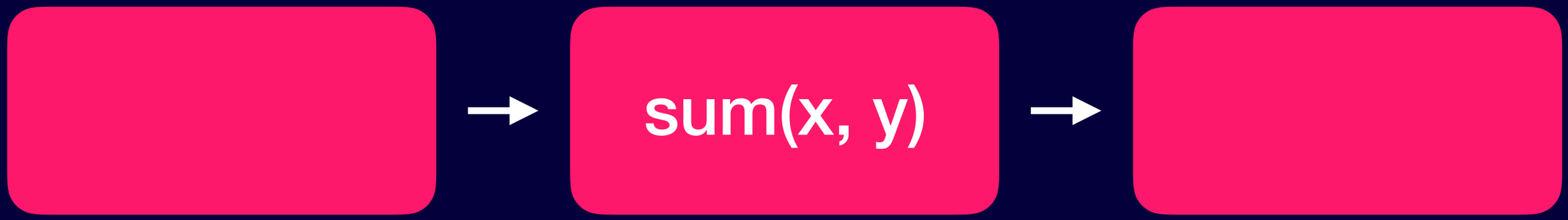
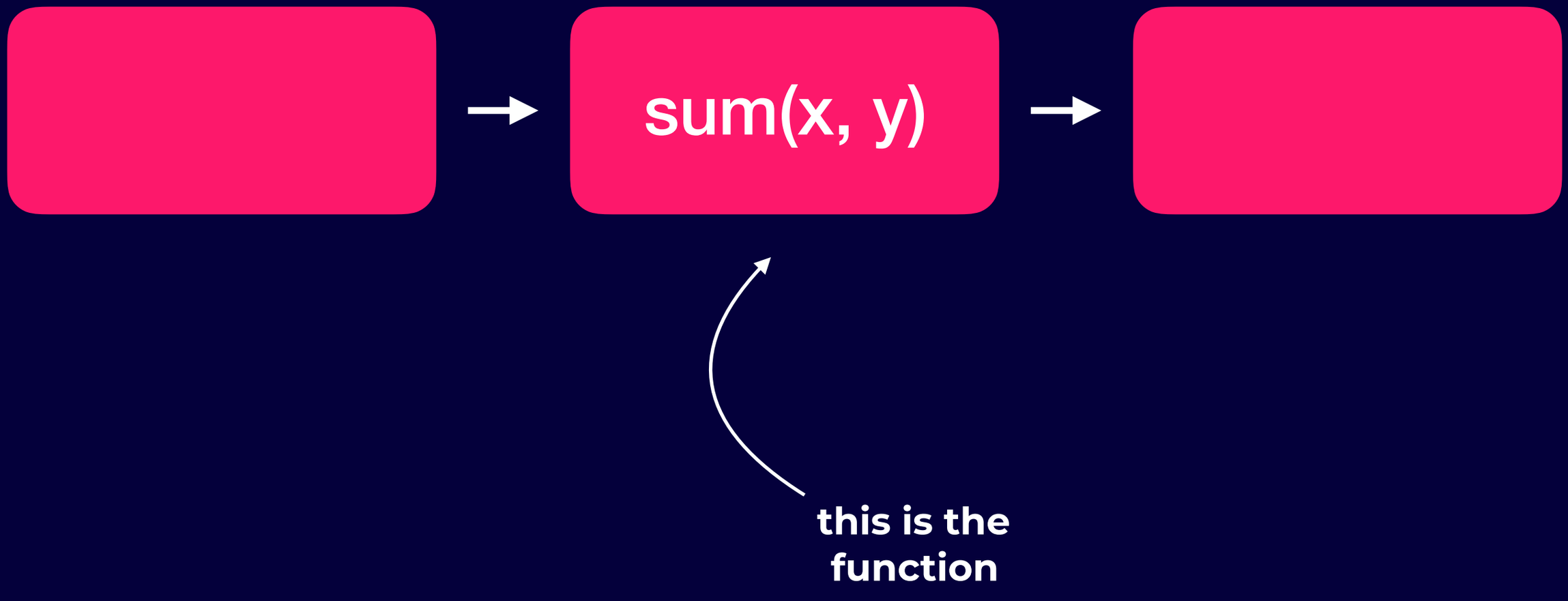
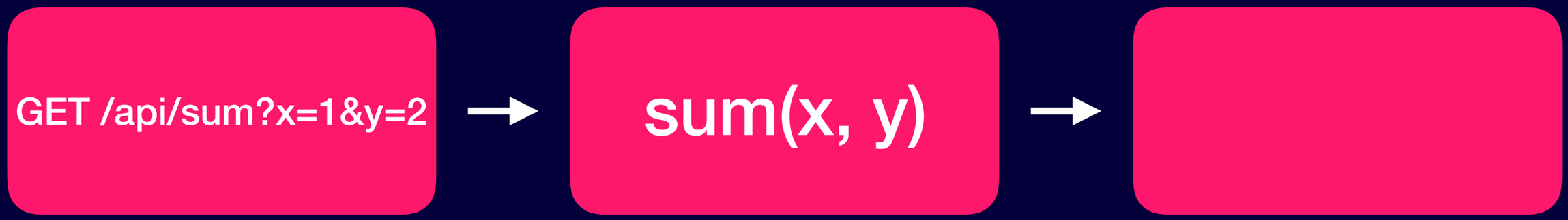
Event Driven



Event Driven



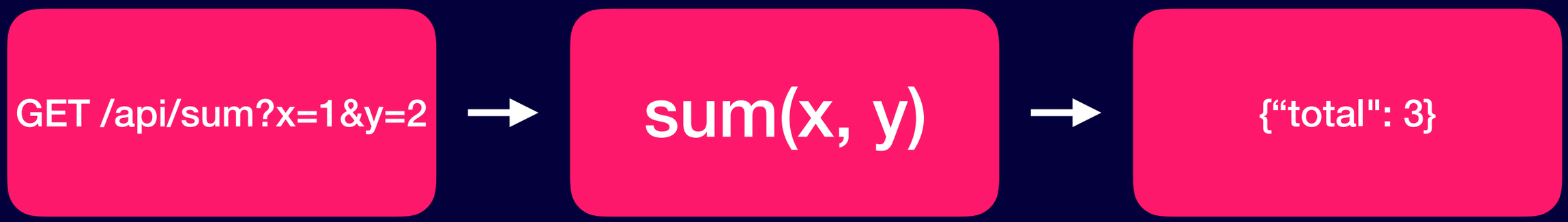
Event Driven



this is the trigger

this is the function

Event Driven



this is the trigger

this is the function

this is the output

Event Driven

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Event Driven

⚡ FaaS Principles ⚡

Event Driven

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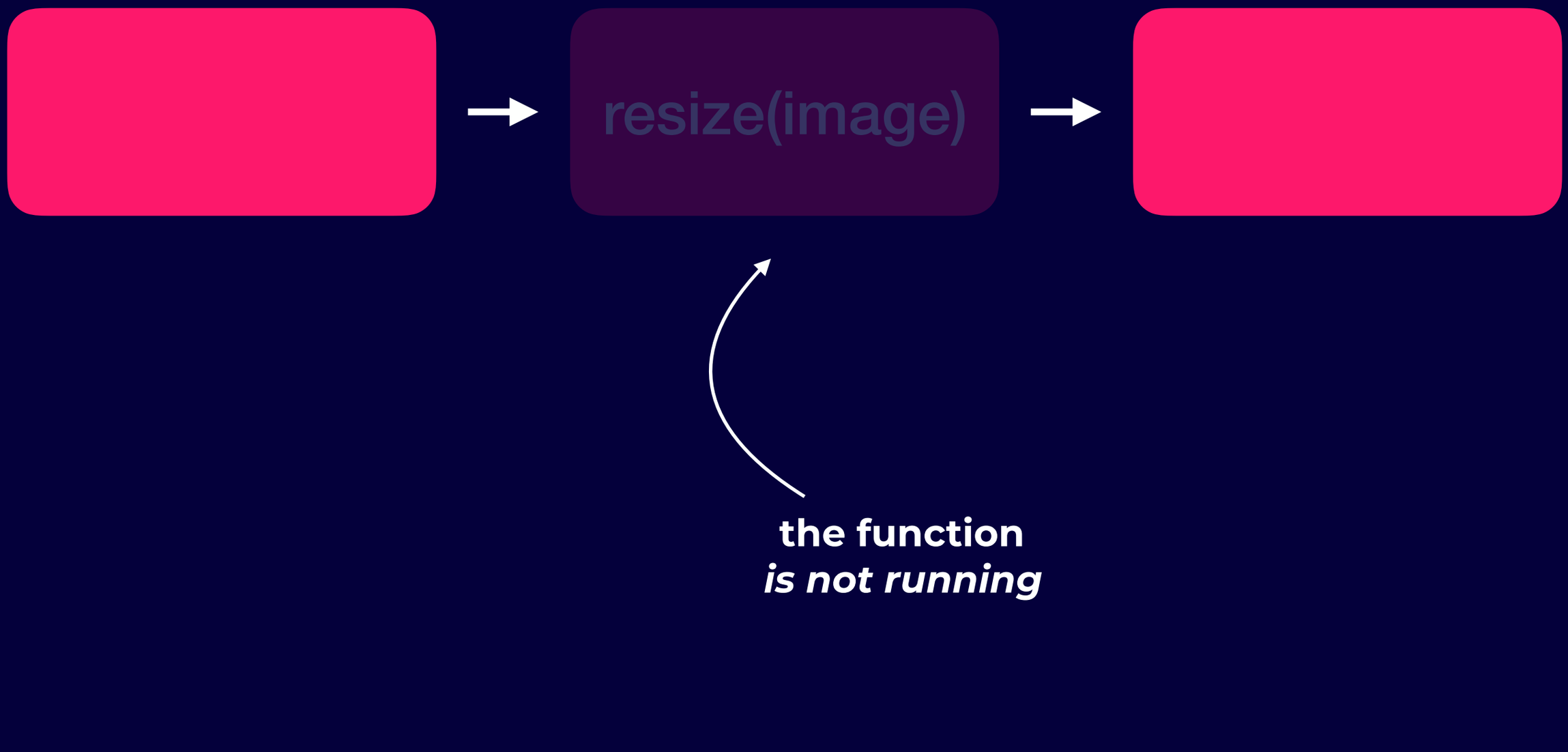
Ephemeral Environment

Ephemeral Environment



Ephemeral Environment

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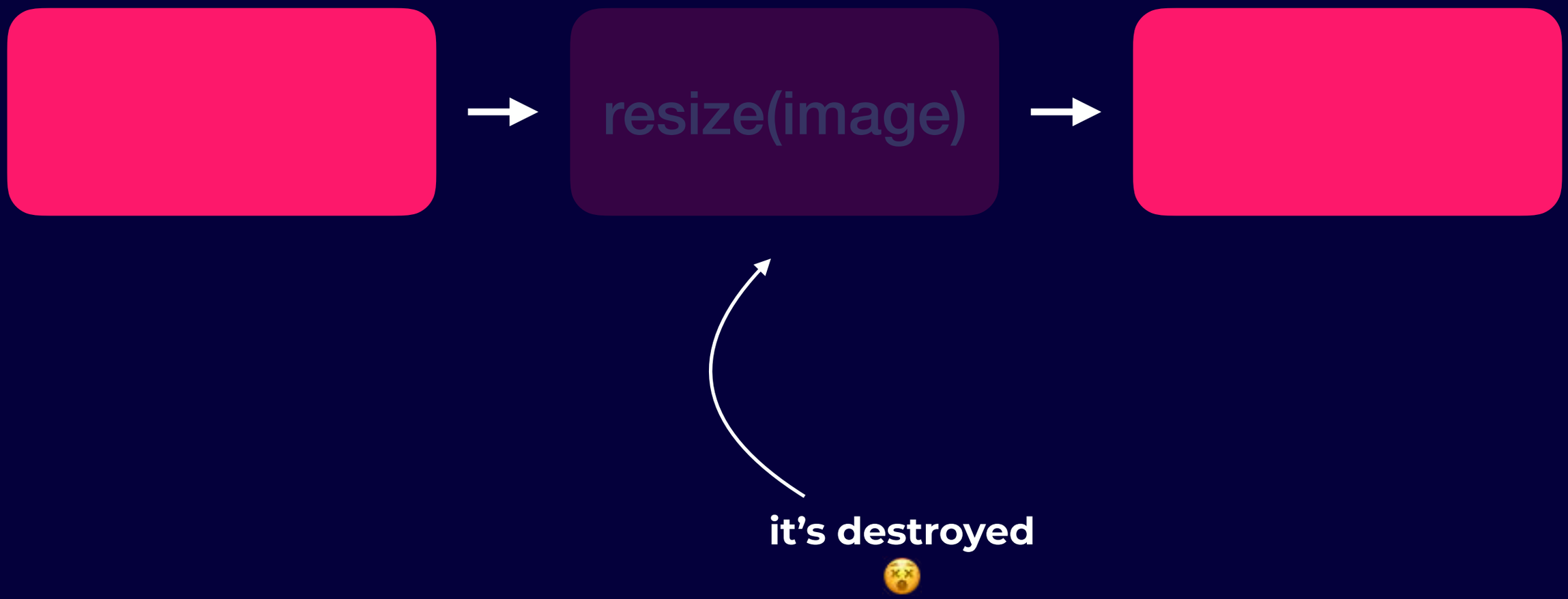
Ephemeral Environment



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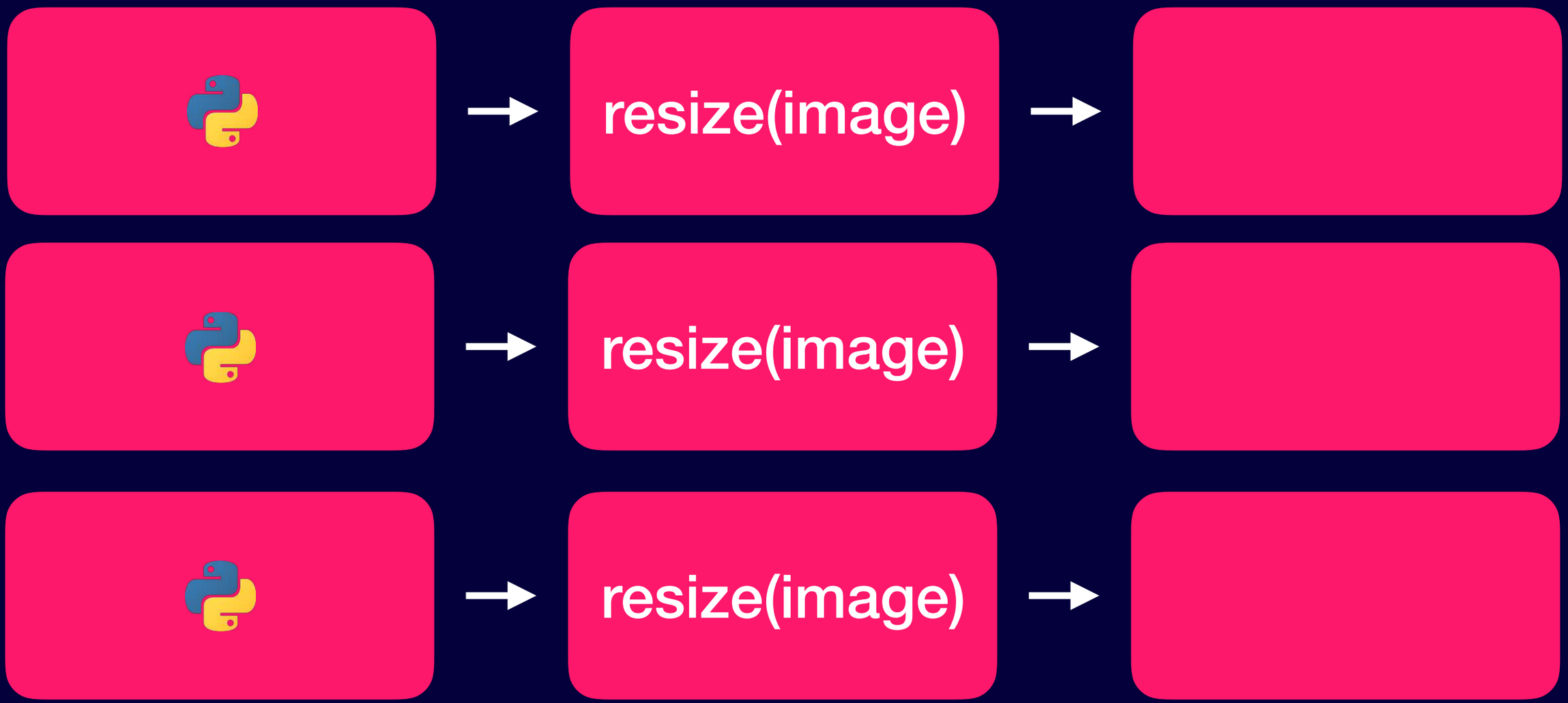
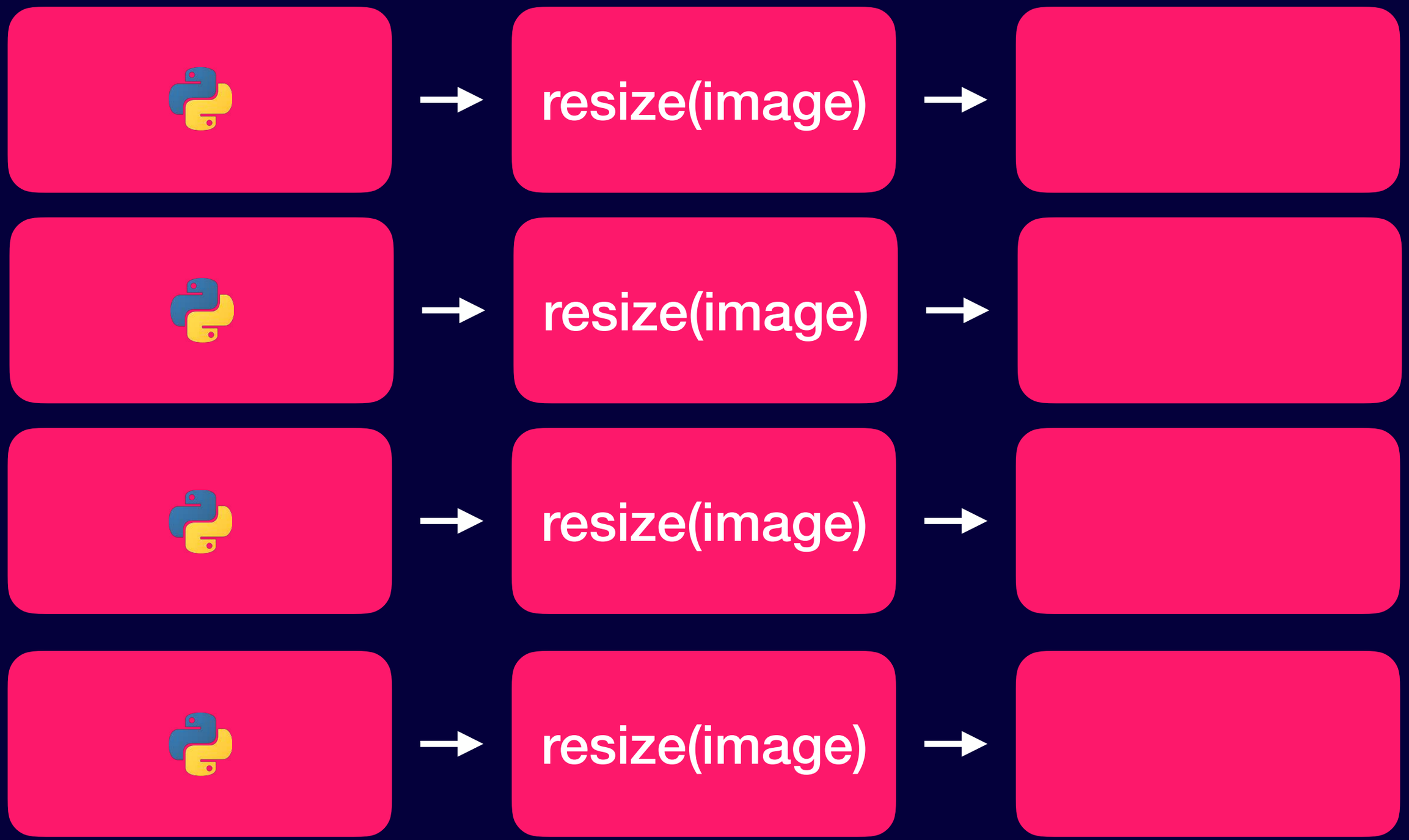
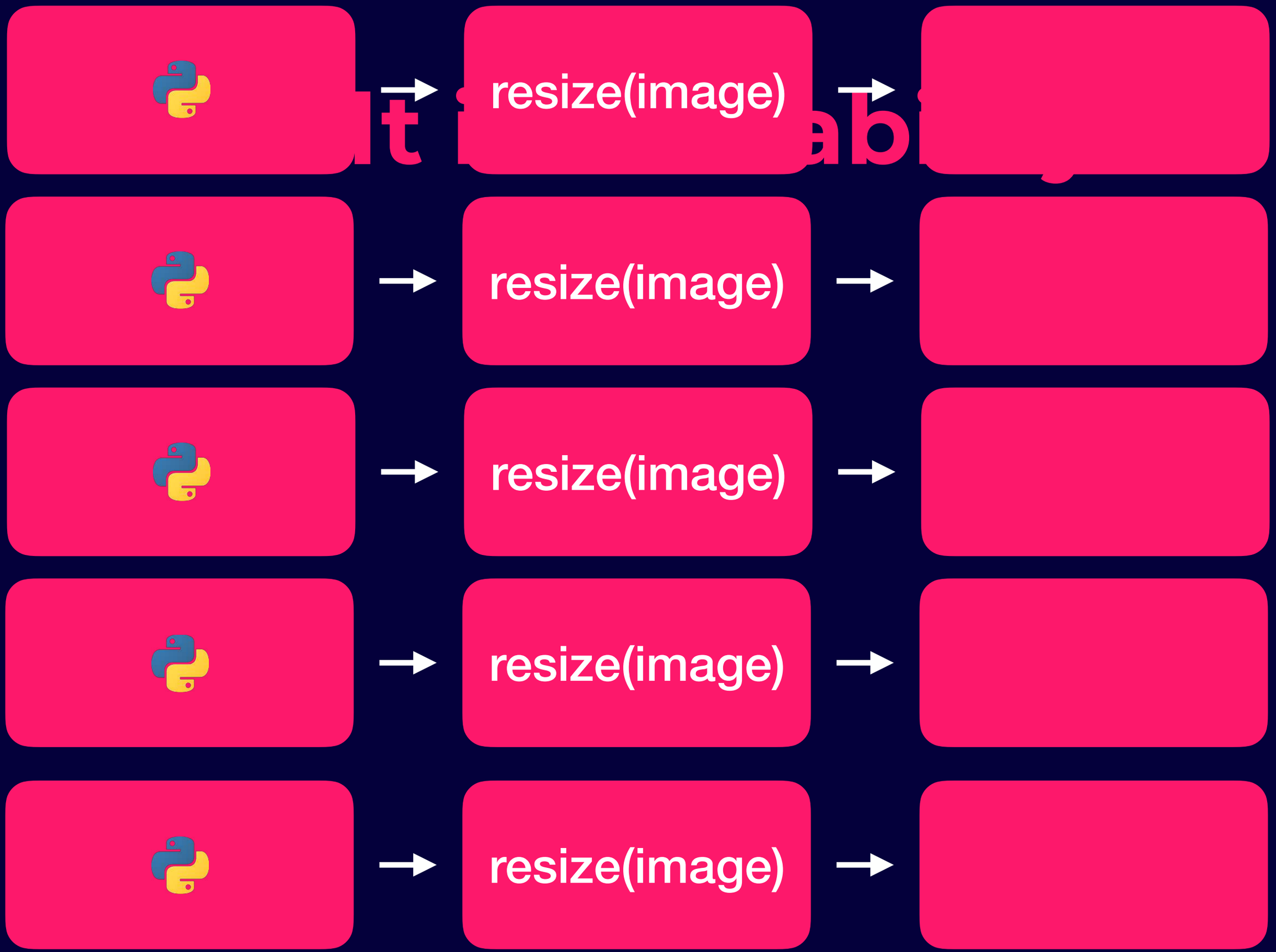


Built in Scalability




resize(image)
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Built in Scalability

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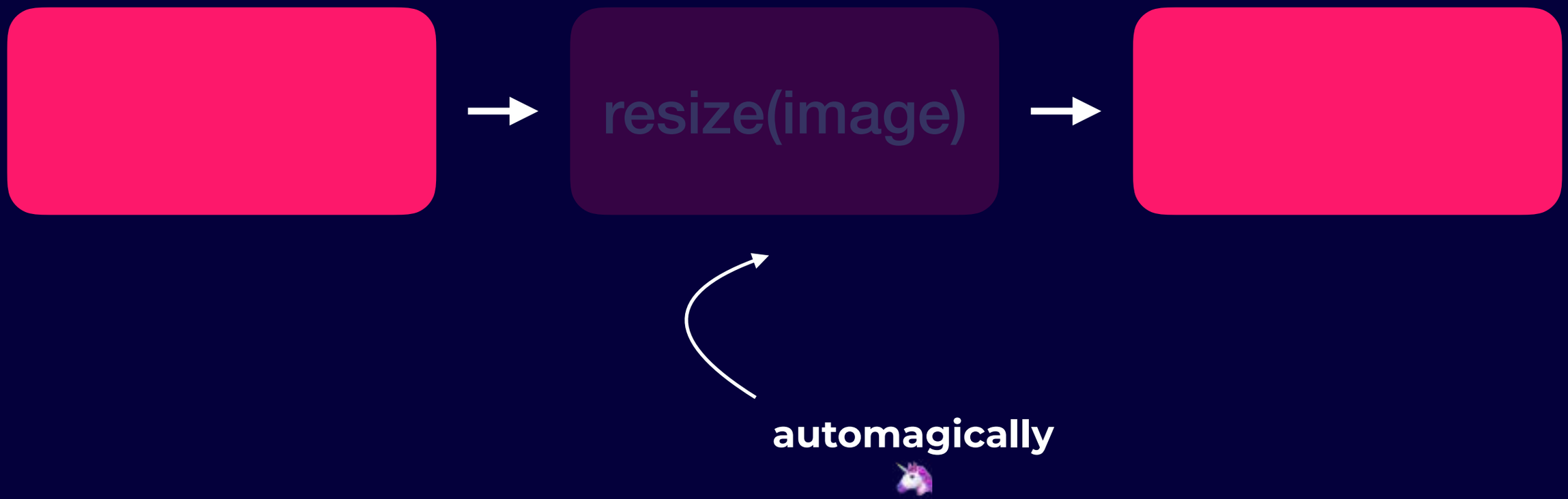

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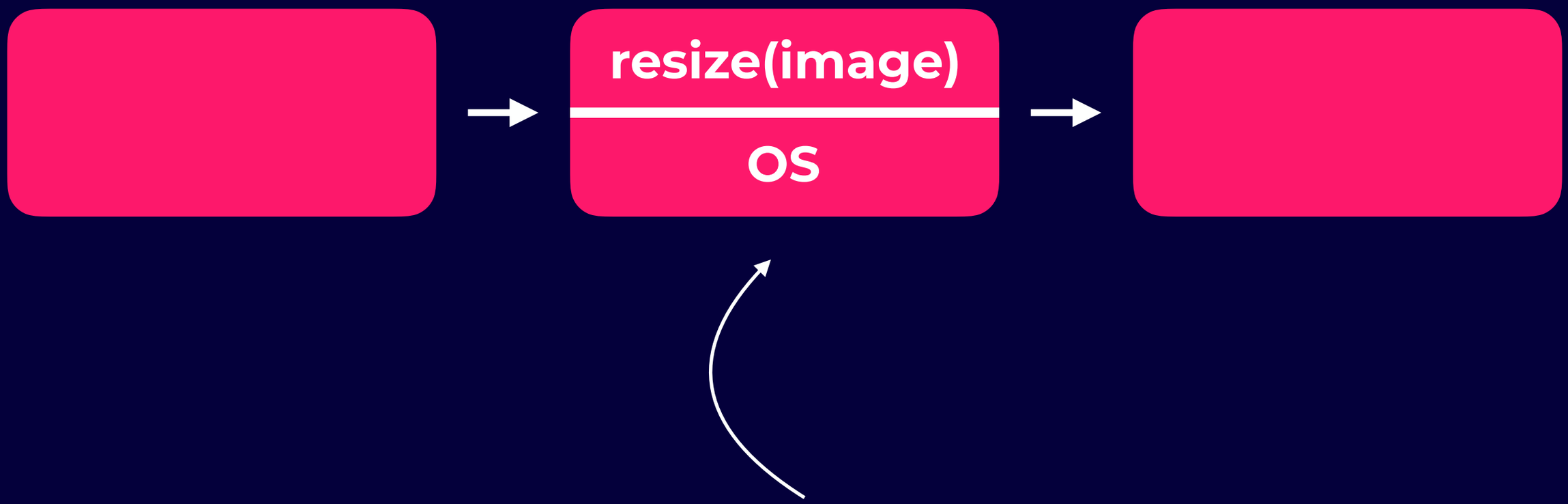
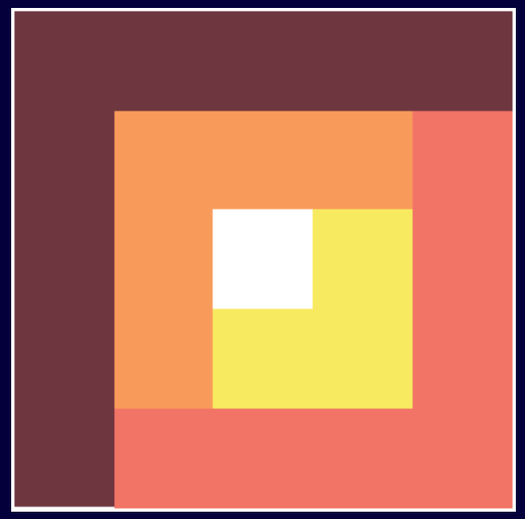
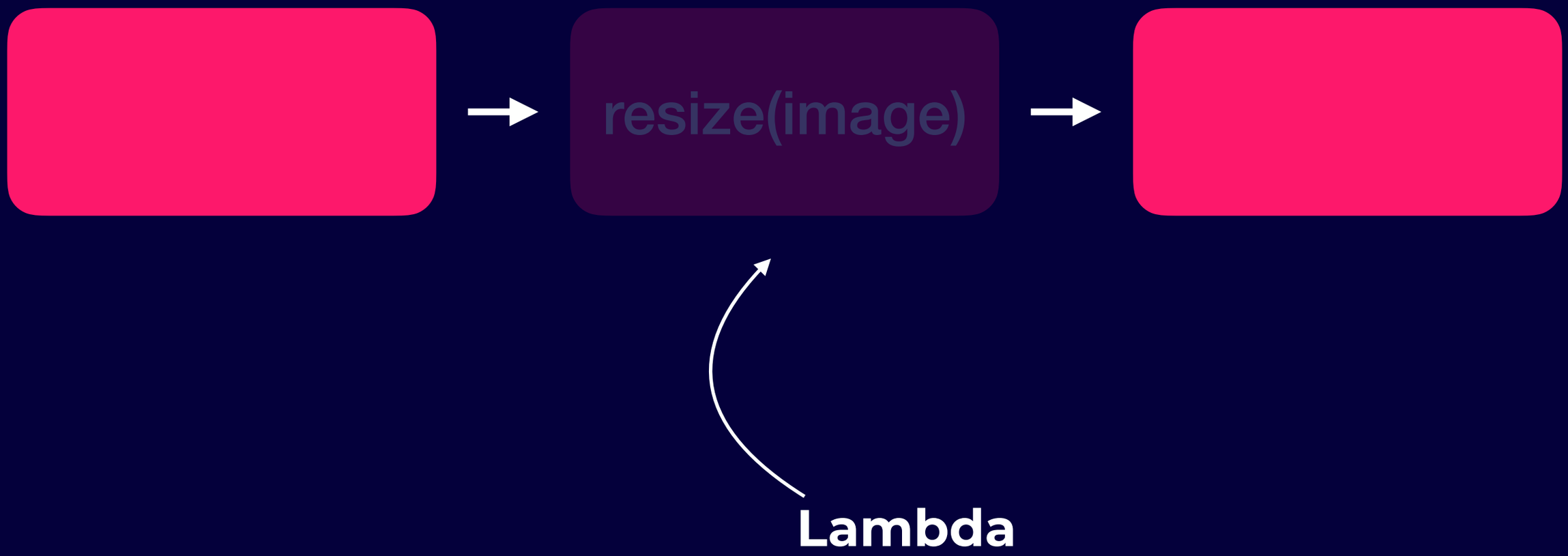


but where does the code *actually run*?

Providers



AWS



API Gateway
S3
SQS
DynamoDB
...

AWS

resize(image)

Lambda

API Gateway
S3
SQS
DynamoDB
...

AWS

Anything, really

resize(image)

Lambda

let’s open the black (pink) box

What about the Pythonistas?

Python 2.7

Kubeless

Azure (experimental)

Python 2 & 3

AWS Lambda

IBM Cloud Functions

❤️ Frameworks ❤️

```
$ pip install chalice
$ chalice new-project sum && cd sum

# app.py
from chalice import Chalice

app = Chalice(app_name='sum')

def sum(x, y):
    return int(x) + int(y)


@app.route('/')
def index():
    x = app.current_request.query_params.get('x')
    y = app.current_request.query_params.get('y')
    total = sum(x, y)

    return {'total': total}

$ chalice deploy
```

aws/chalice

Zappa

Serverless Framework

The open-source CLI for building serverless architectures and event-driven applications.

Python is great for Serverless!

Moria

Zappa + Django

https://moriatoken.com

Zappa + Flask Ask + Alexa

https://bondhome.io/

Jonatas Baldin
/start

17:38

Serverless Telegram Bot

17:38

Hello, human! I am an echo bot, built with Python and the Serverless Framework.

You can take a look at my source code here: https://github.com/jonatasbaldin/serverless-telegram-bot.

If you have any issues, please drop a tweet to my creator: https://twitter.com/jonatsbaldin.

Happy botting!

> GitHub
> **jonatasbaldin/serverless-telegram-bot**
> serverless-telegram-bot - This example demonstrates how to setup an echo Telegram Bot using the Serverless Framework ⚡🤖

Jonatas Baldin
I'm an echo bot!

17:38

Serverless Telegram Bot
I'm an echo bot!

17:38

@sls_telegram_bot

https://github.com/jonatasbaldin/serverless-telegram-bot

TensorFlow Predctions

https://github.com/jacopotagliabue/tensorflow_to_lambda_serverless

JS

VS

C#

Serverless Notes ™

Things you should be aware

Costs

Serverless Cost Calculator (beta)

Calculating cost for AWS Lambda, Azure Functions, Google Cloud Functions, and IBM C

Number of Executions

Number of Execution

Estimated Execution Time (ms)

Estimated Execution

128MB

Memory Size

Include Free-Tier

True False

HTTP Requests

True False

Vendor	Request Cost	Compute Cost
AWS Lambda	$-	$-
Azure Functions	$-	$-
Google Cloud Functions	$-	$-

http://serverlesscalc.com/

Analyse your use case

Servers. LOL

by IO

Should your EC2 be a Lambda?

What applications are a good fit for serverless? Which can utilize the benefits of event-driven architecture, blazing-fast deployment times, incredible scalability, and decreased cost? Use this tool to help!

Find out

Vendor Lock-in

Event Gateway

React to any event, with any function, on any provider. Break away from the single cloud experience.'

GITHUB

GATEWAY ENTERPRISE

No server optimisations

Visibility and testing are *harder*

Ever growing complexity

Youngness

Future?

@jonatasbaldin
“jojo”

Serverless for Pythonistas

@jonatasbaldin
“jojo”