

Infrastructure as Code with Terraform

Setting up a simple website in AWS with S3

Nora Schöner



 **Intro: Hi I'm Nora**

 **Intro: The Story behind**

 **Infrastructure as Code 101**

 **Terraform 101**

 **Terraform: Workflow & States**

 **Live Coding**

 **Terraform: Advantages, Challenges & Alternatives**

🔑 Aim & Takeaways

Understand Infrastructure as Code

Insights into Terraform

What else is there out in the wild

Hi, I'm Nora

Senior Software Engineer @ CodeCamp:N



current project



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codecamp^N

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**It's just a
click in the
console...**

A new
cooperation is
coming.

We need the new
test set-up
by next week...

Yeah, let me
just click
through the
console...



photo by CodeCamp:N GmbH

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just click
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console...

Argh!
WHICH CONFIG
did I used last
time?

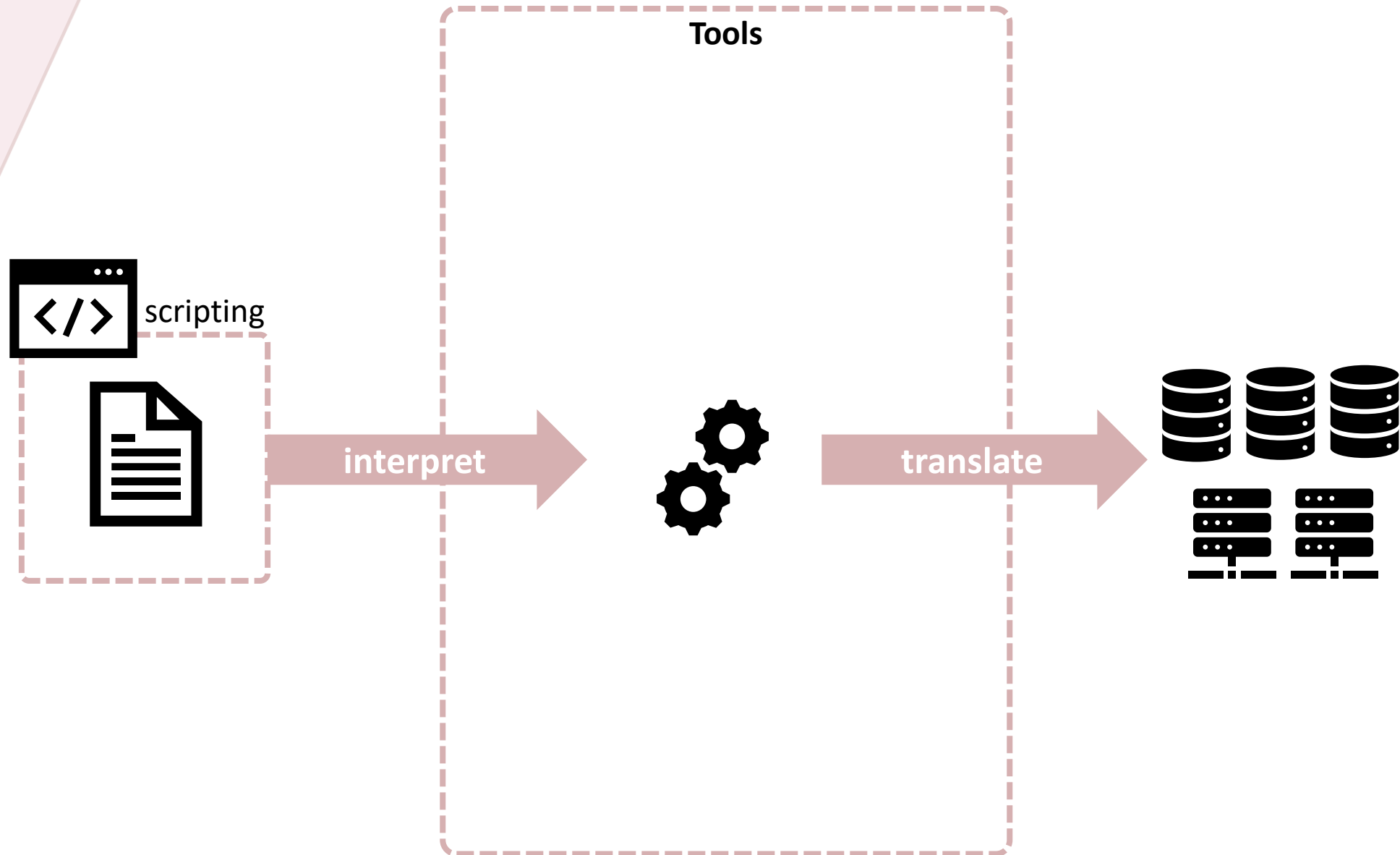
And **WHICH
RESOURCES ?**
I can't remember
...

This should
be working
AUTOMATICALLY
...

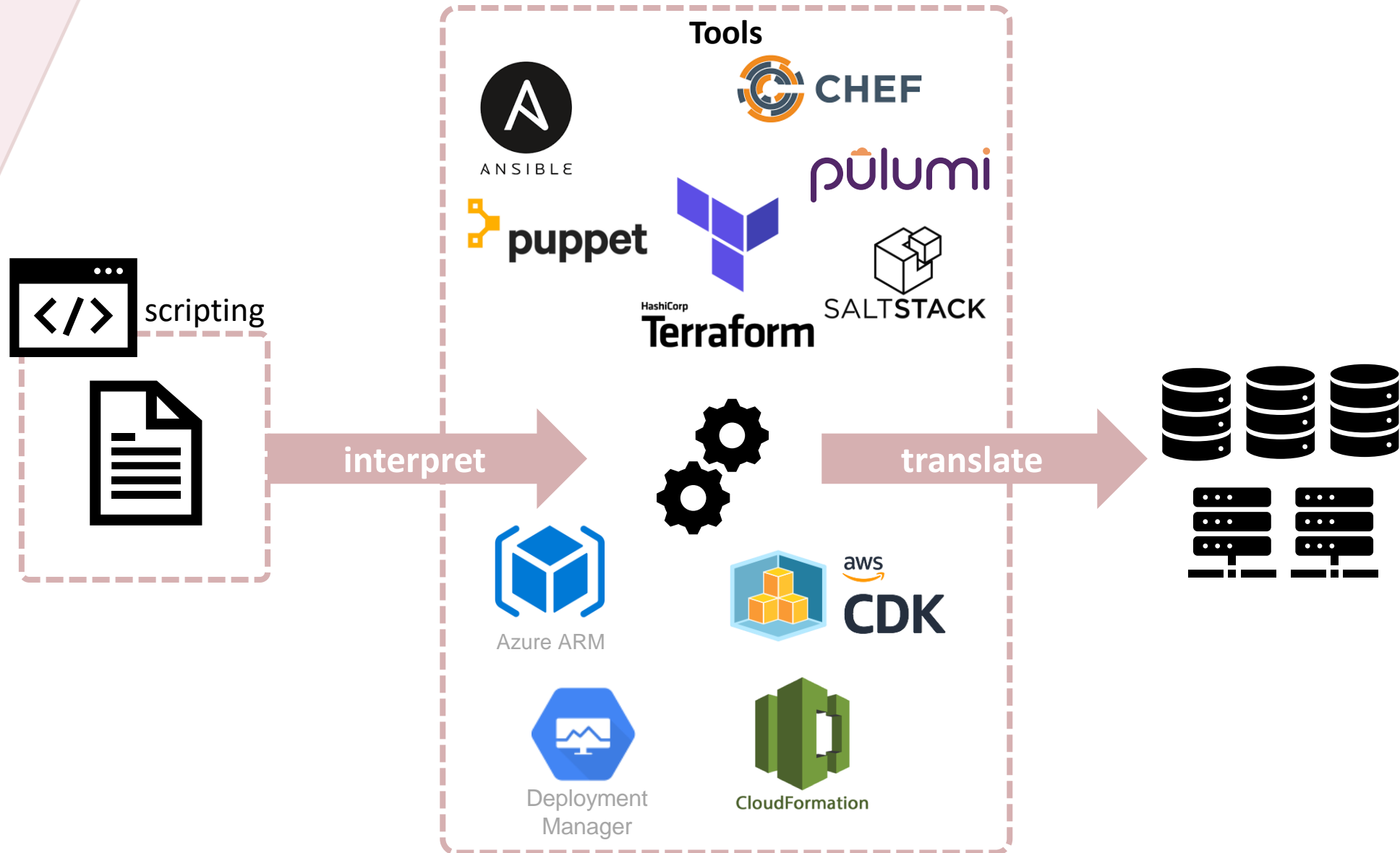


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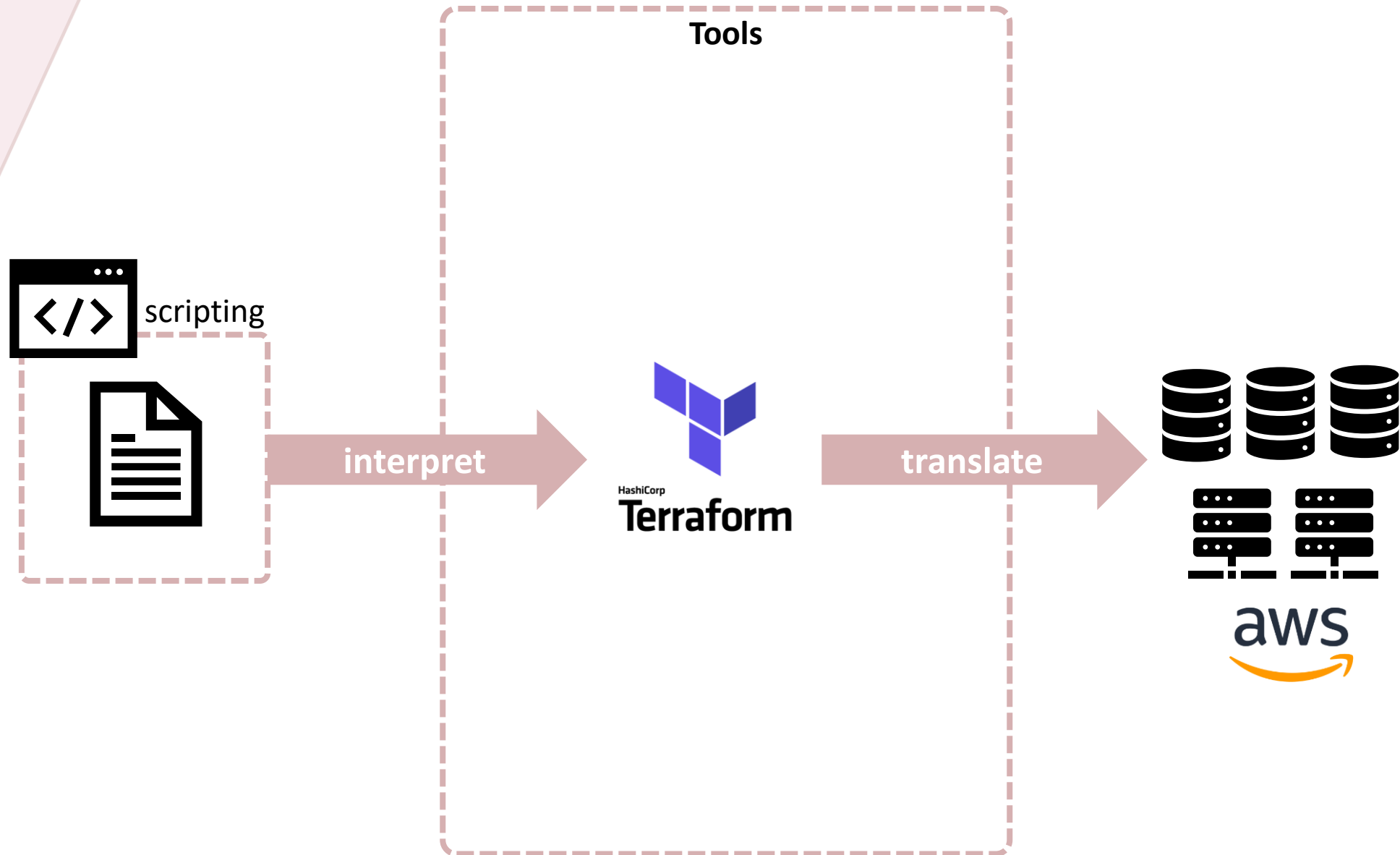
Infrastructure as Code



Infrastructure as Code



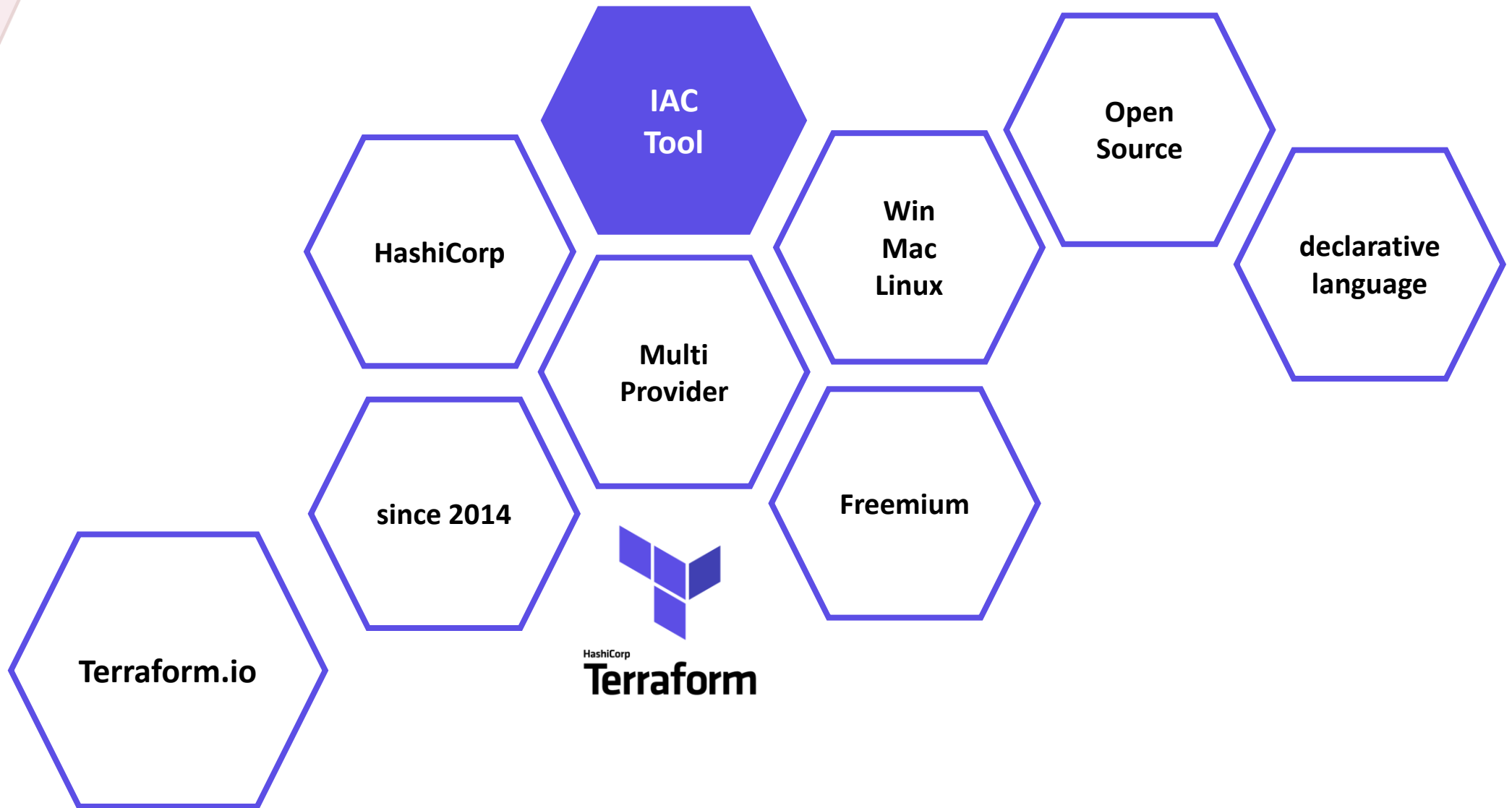
Infrastructure as Code



**The workload
will benefit
from it**



**Terraform is
a great tool**



Installation is easy & simple

```
1  # install terraform
2  # switch to temporary directory
3  cd tmp
4  # get latest terraform binaries for your system https://www.terraform.io/downloads.html
5  wget https://releases.hashicorp.com/terraform/0.14.4/terraform\_0.14.4\_linux\_amd64.zip
6  unzip terraform_0.14.4_linux_amd64.zip
7  # move terraform to an existing dir included in PATH
8  # (or add current dir to PATH)
9  mv terraform /usr/local/bin/
```

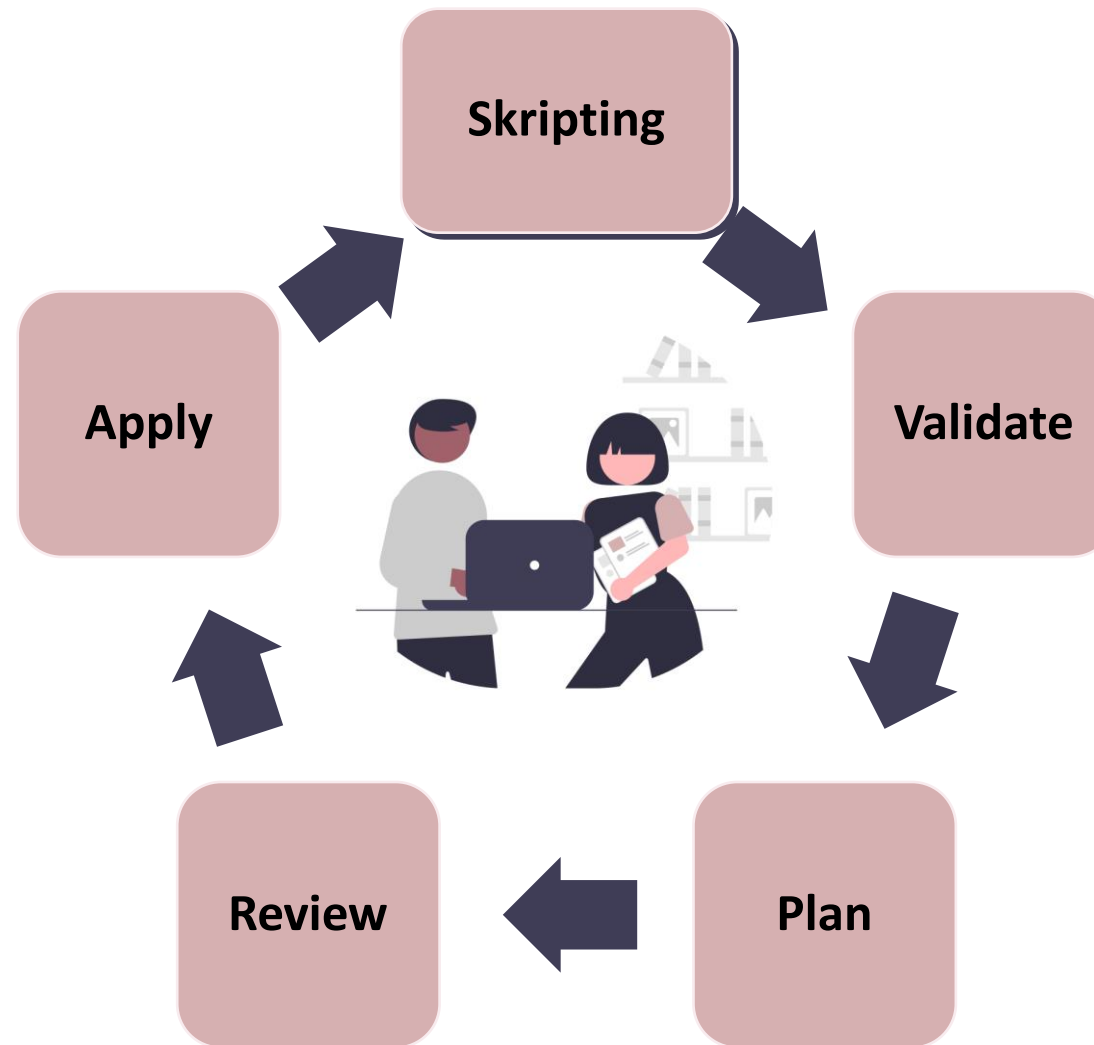
👉 <https://www.terraform.io/downloads.html>

📖 <https://learn.hashicorp.com/tutorials/terraform/install-cli>

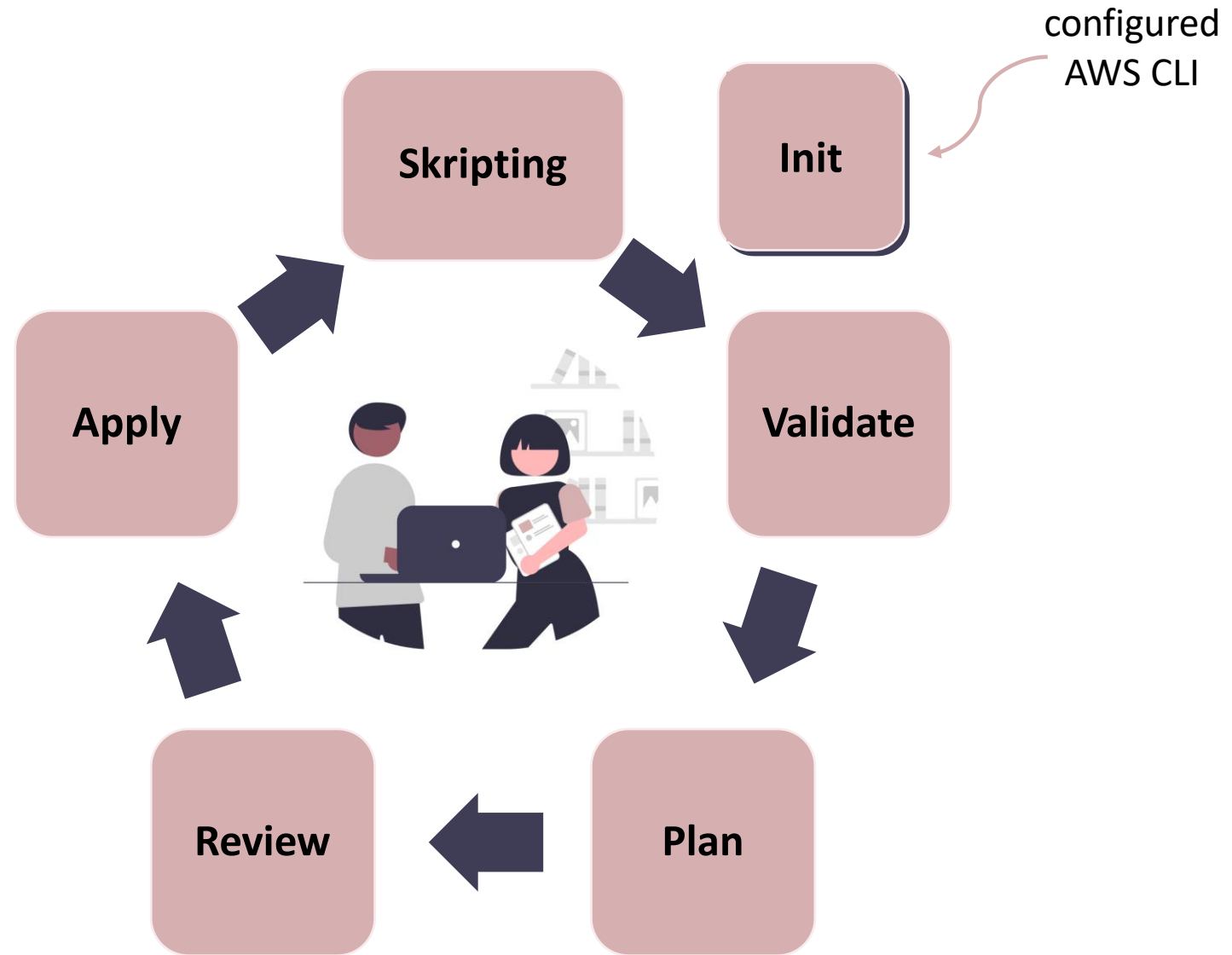
Basic Workflow



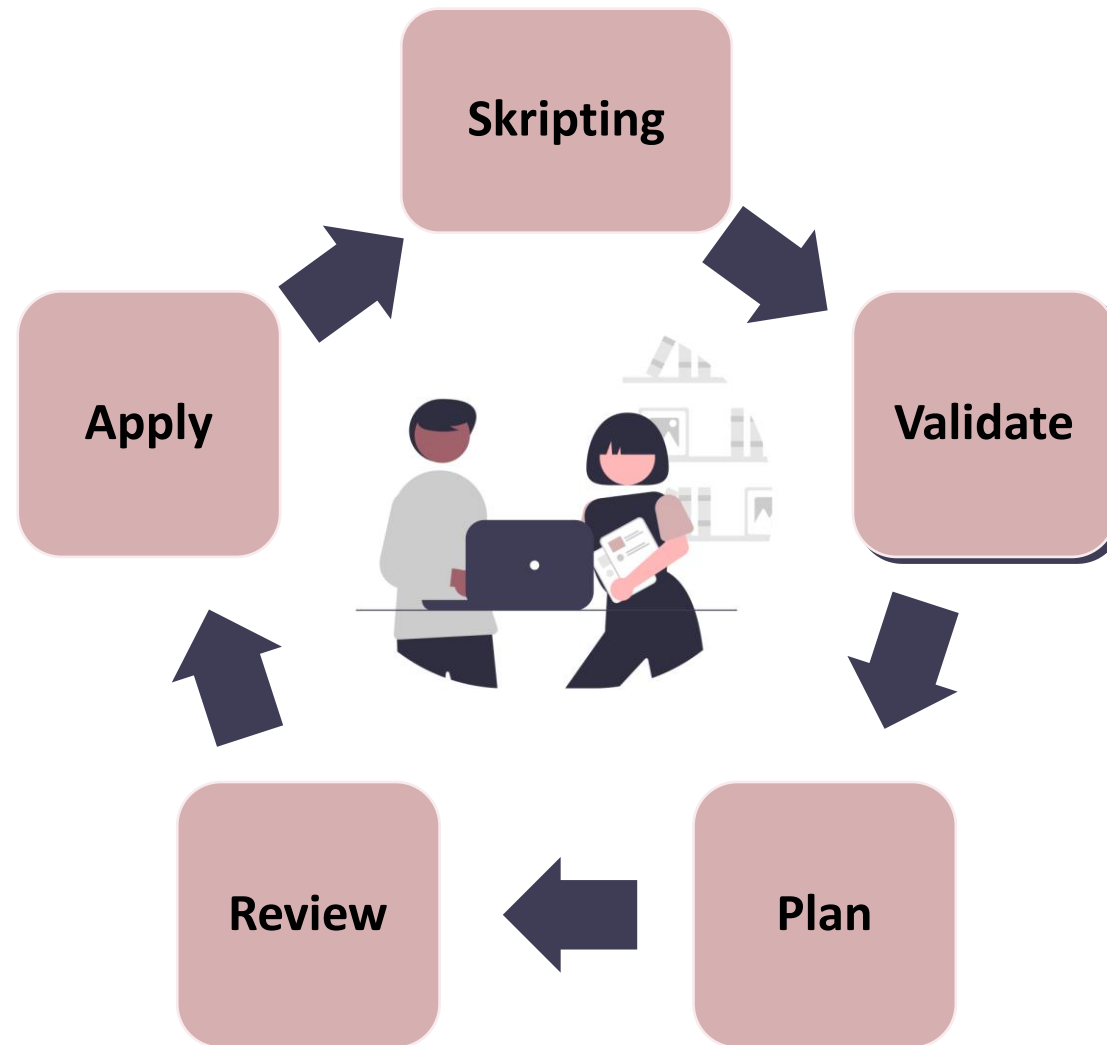
Basic Workflow



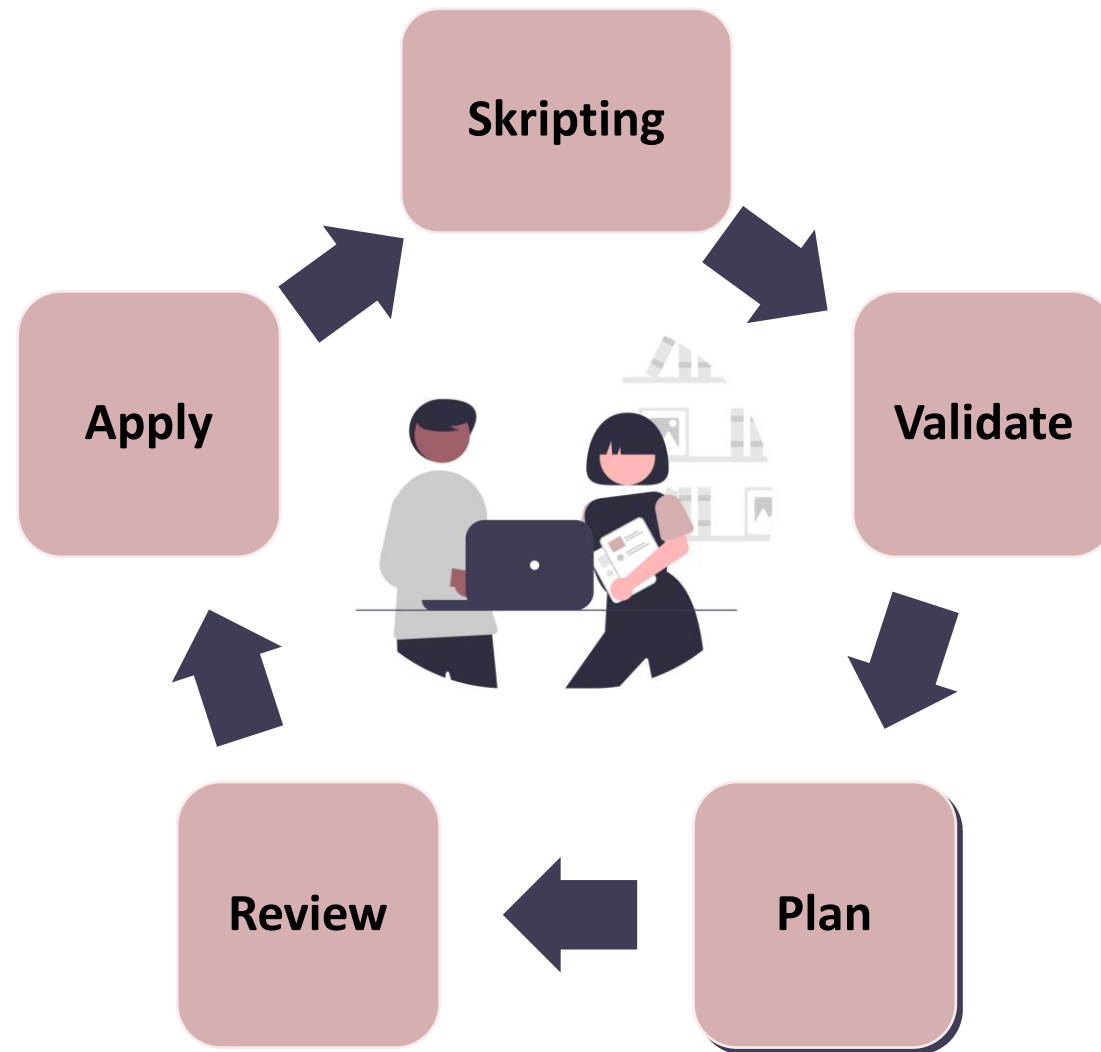
Basic Workflow



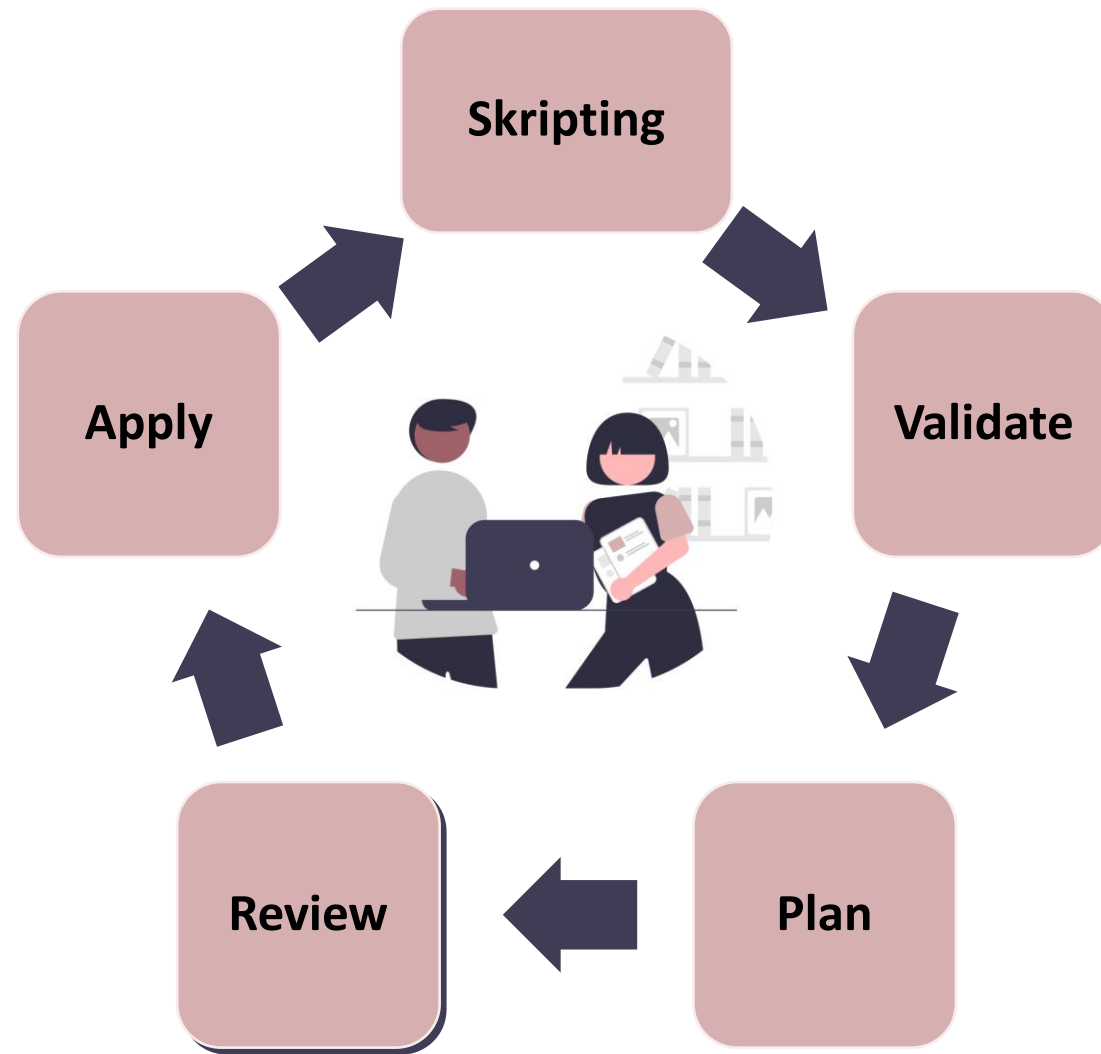
Basic Workflow



Basic Workflow



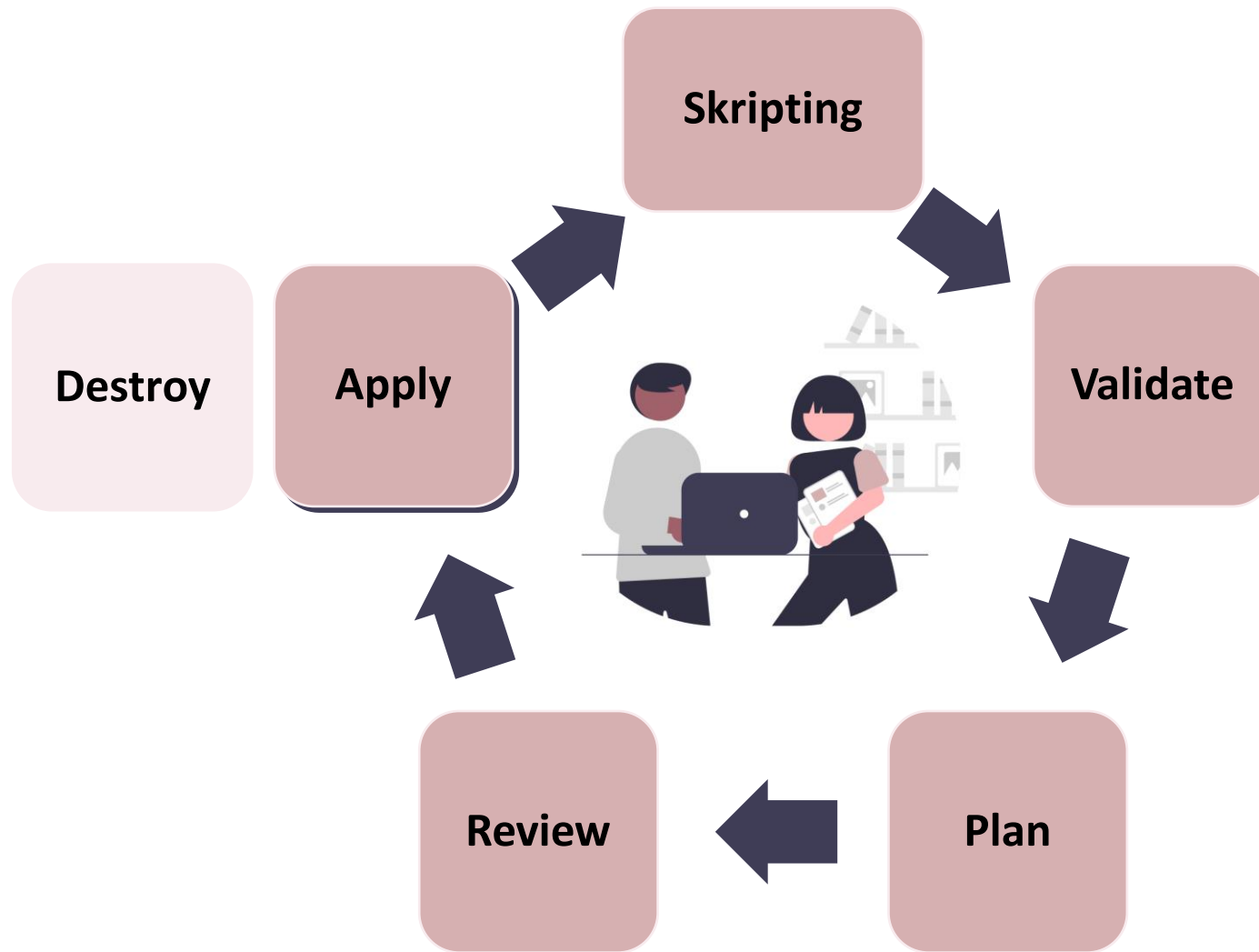
Basic Workflow



Basic Workflow



Basic Workflow

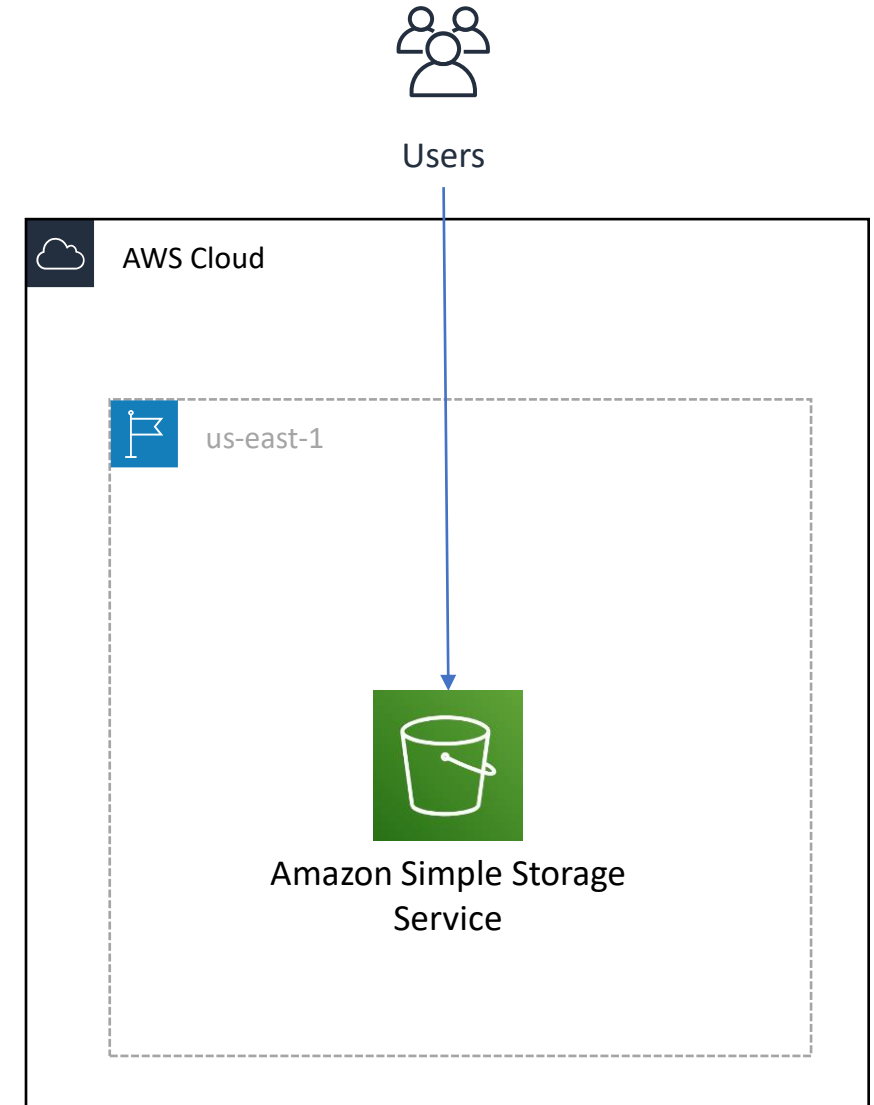


States



Live Coding

```
1  #set provider
2  ∨ provider "aws" {
3    | profile := "cyberland-s3-bucket-test"
4    | region := "us-east-1"
5  }
6
7  #set variables
8  ∨ variable "s3_bucket_name" {
9    | description := "the bucket name for ou website bucket"
10   | type := string
11 }
12
13 #set resources
14 # s3 bucket
15 ∨ resource "aws_s3_bucket" "website" {
16   | bucket := var.s3_bucket_name
17   | acl := "public-read"
18   | policy := <<POLICY
19   ∨ {
20     | "Version": "2012-10-17",
21     | "Statement": [
22     |   | {
23     |     | "Sid": "PublicReadGetObject",
24     |     | "Effect": "Allow",
25     |     | "Principal": "*",
26     |     | "Action": [
27     |       | "s3:GetObject"
28     |     | ],
29     |     | "Resource": [
30     |       | "arn:aws:s3:::${var.s3_bucket_name}/*"
31     |     | ]
32     |   }
33   ]
34 }
35 ∨ POLICY
```



Terraform Advantages



easy and fast to learn



good documentation with a lots of examples



planning with state management



open-source & community-driven

Terraform Challenges



complex conditions are not trivial to implement



unique resource set per provider

Alternatives & Next Steps



**Your
set up is
reviewable**



photo by CodeCamp:N GmbH

**Your
set up is
reviewable**



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Wir suchen dich!

Java-Entwickler*in

FE/BE/Fullstack-Entwickler*in

Testmanagement
uvm.

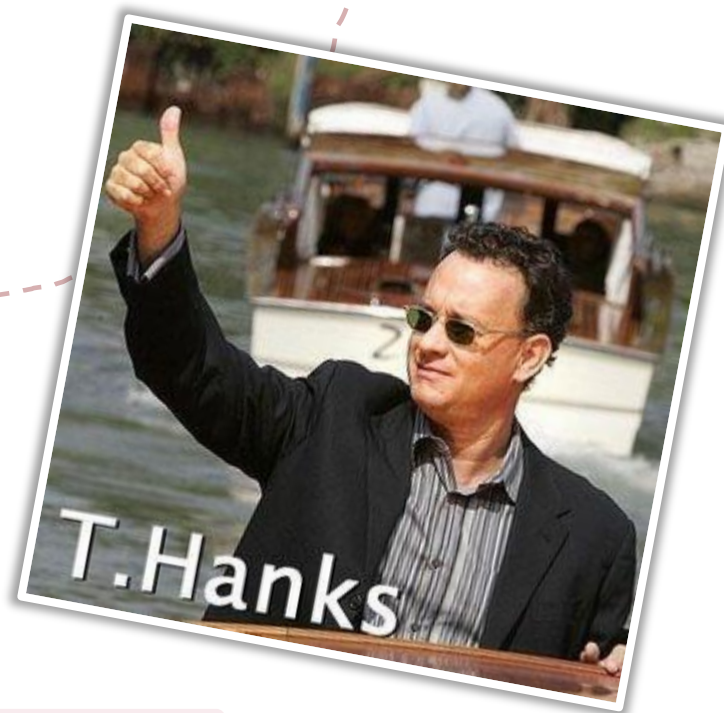
<https://codecampn-jobs.personio.de/>

oder meld dich
nora.schoener@codecamp-n.com

Wir stellen
ein trotz
Corona!

Thank you!

Senior Software Engineer @ CodeCamp:N



Come by and say Hi 🙋



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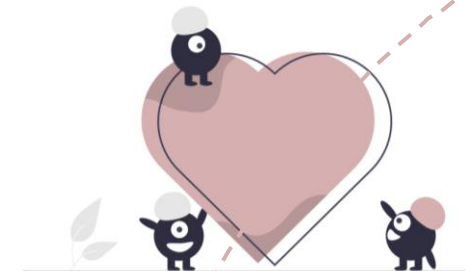




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