

# Infrastructure as Code with Terraform

Setting up a 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<sup>N</sup>

Come by and say Hi 🙋



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@norchen

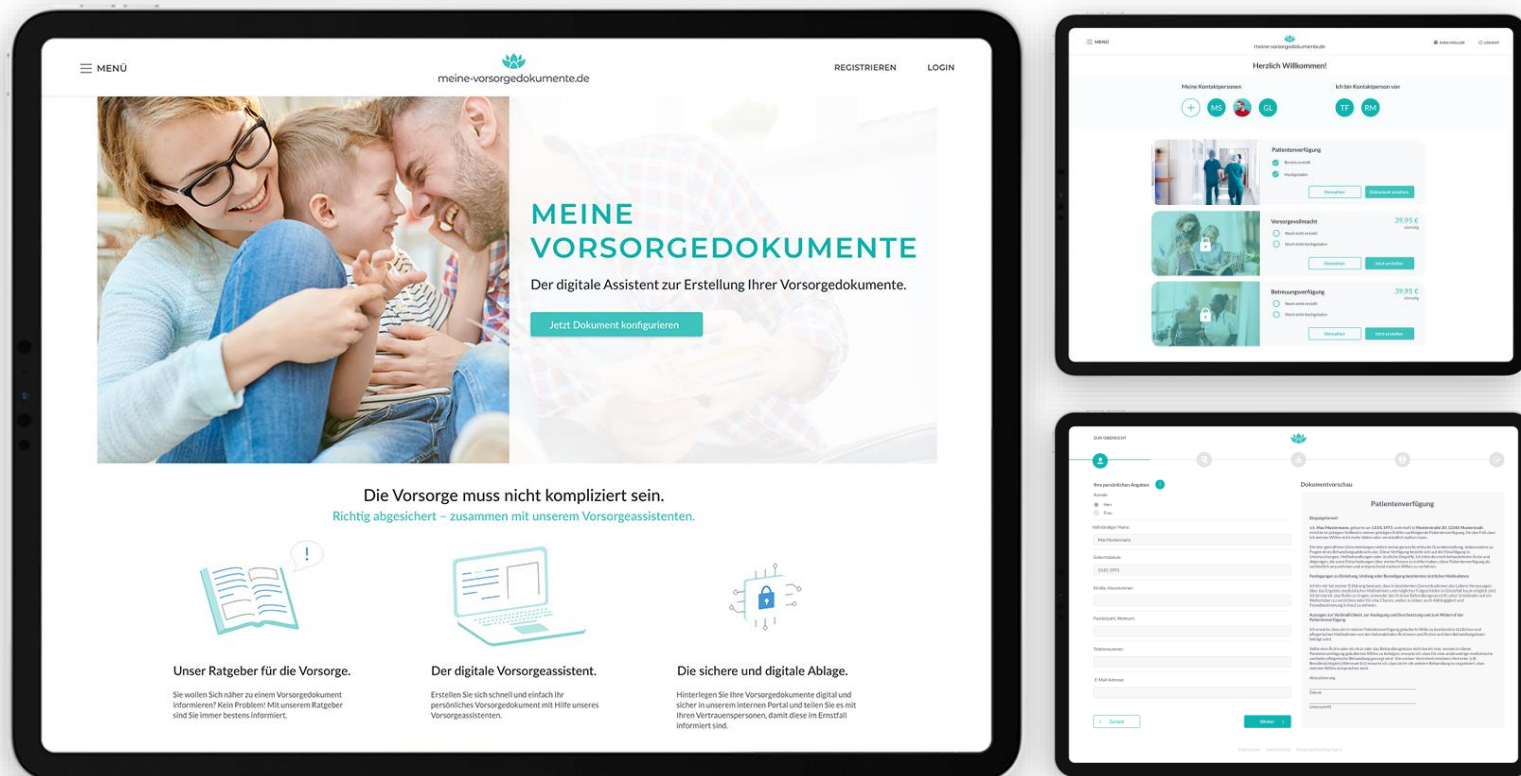


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**It's just a  
click in the  
console...**

A new  
cooperation is  
coming.

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

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

Argh!  
**WHICH CONFIG**  
did I used last  
time?

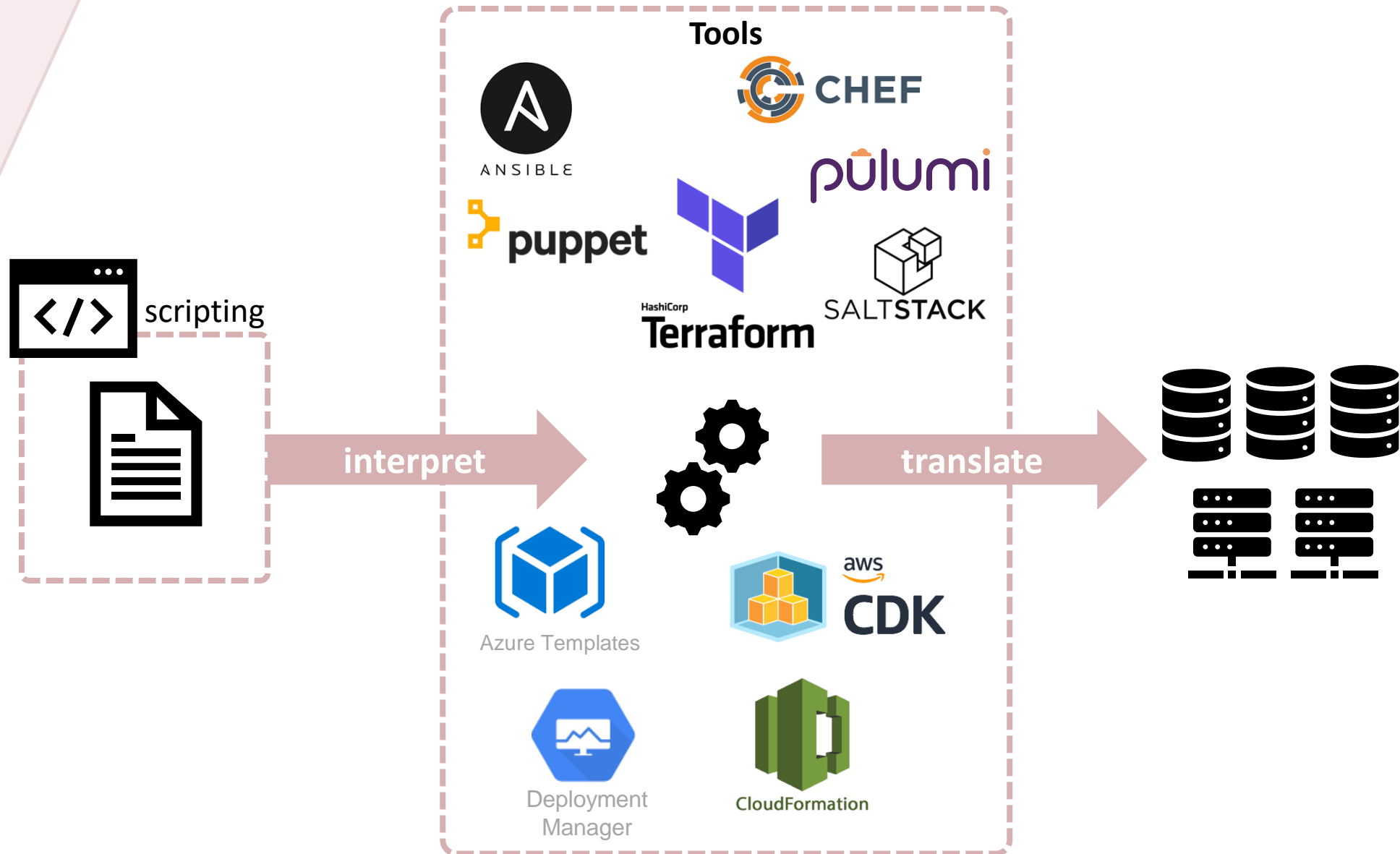
And **WHICH  
RESOURCES ?**  
I can't remember  
...

This should  
be working  
**AUTOMATICALLY**  
...

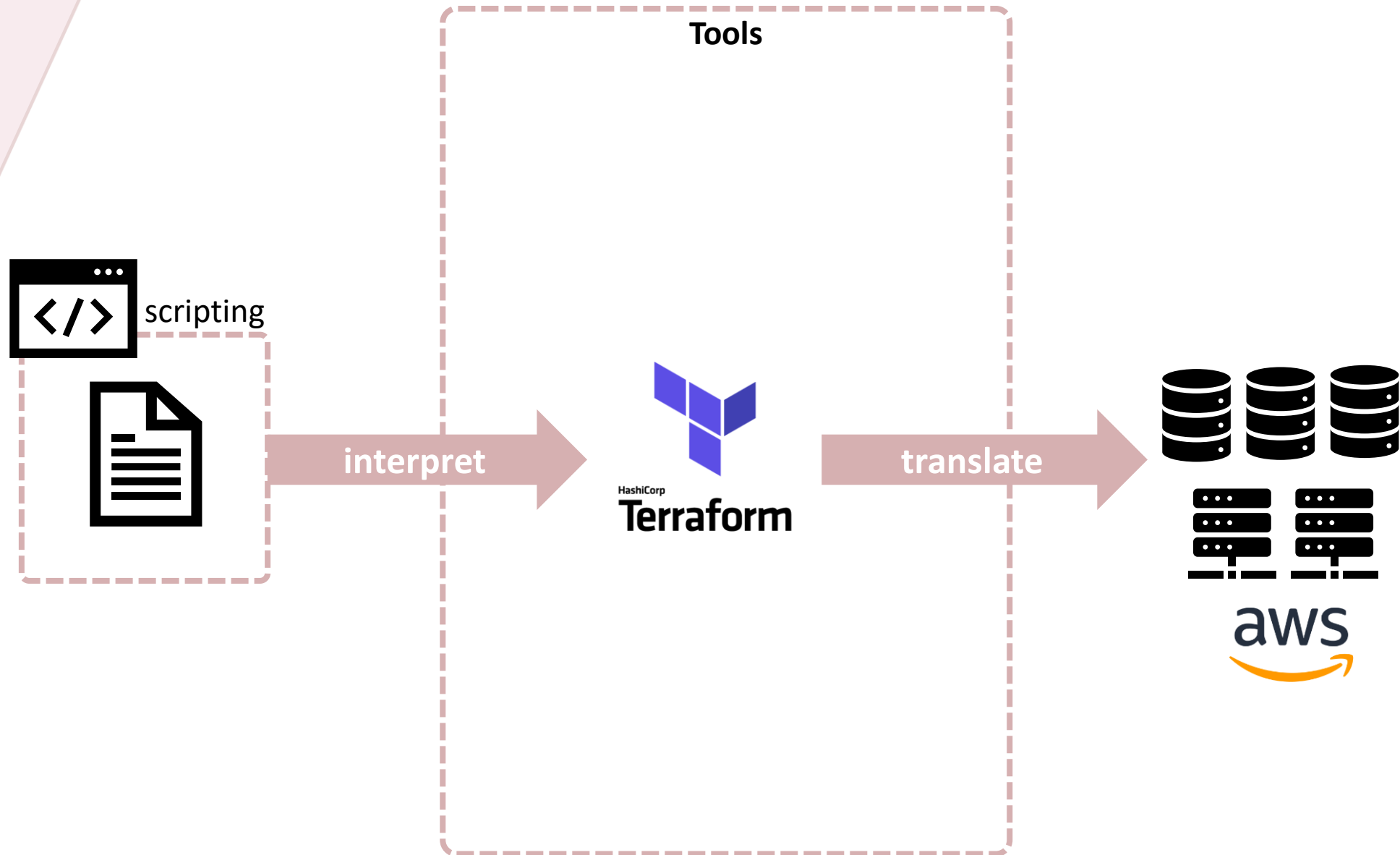


photo by CodeCamp:N GmbH

## Infrastructure as Code



## Infrastructure as Code

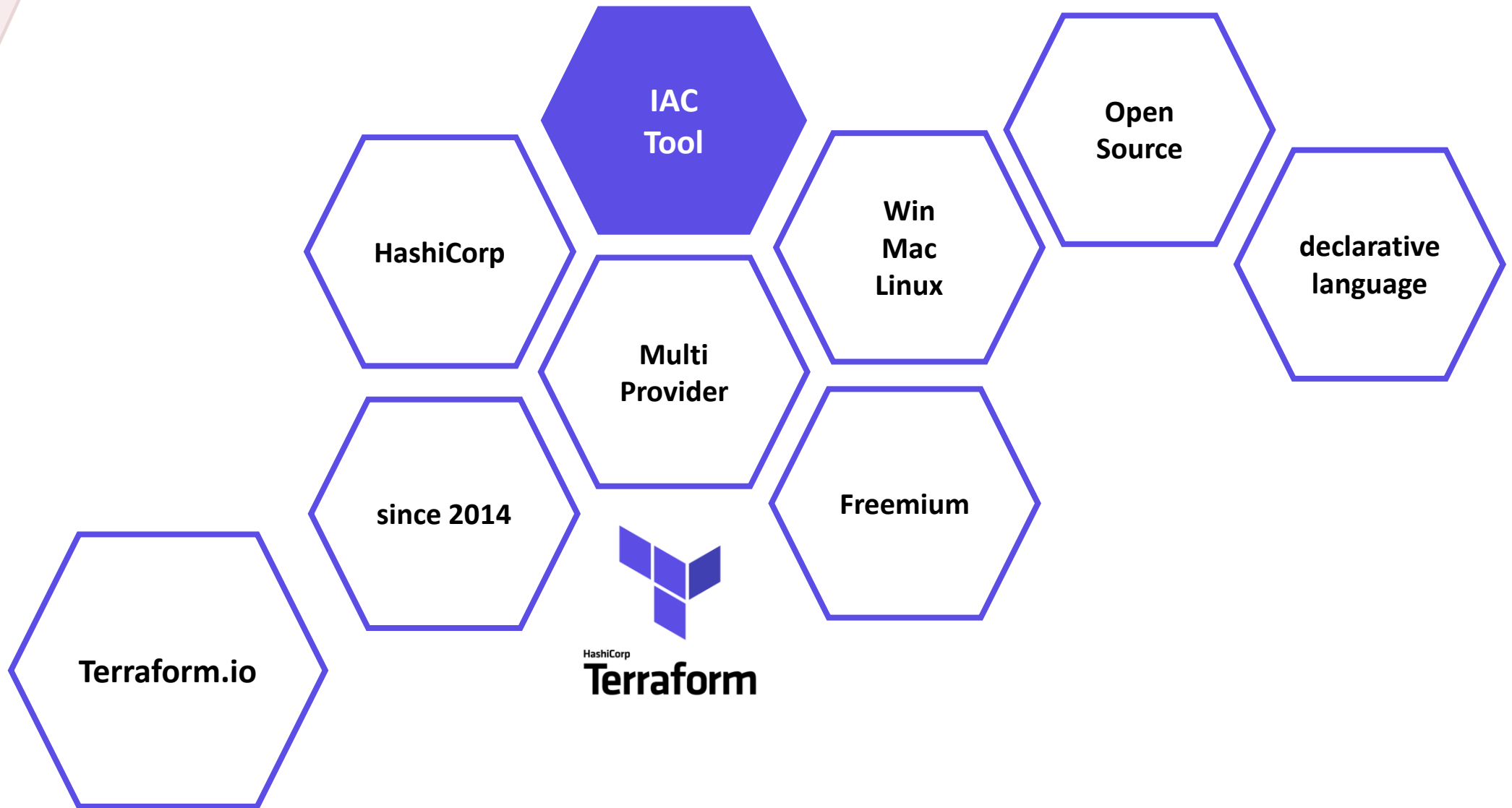




**The workload  
will benefit  
from it**



**Terraform is  
a great tool**



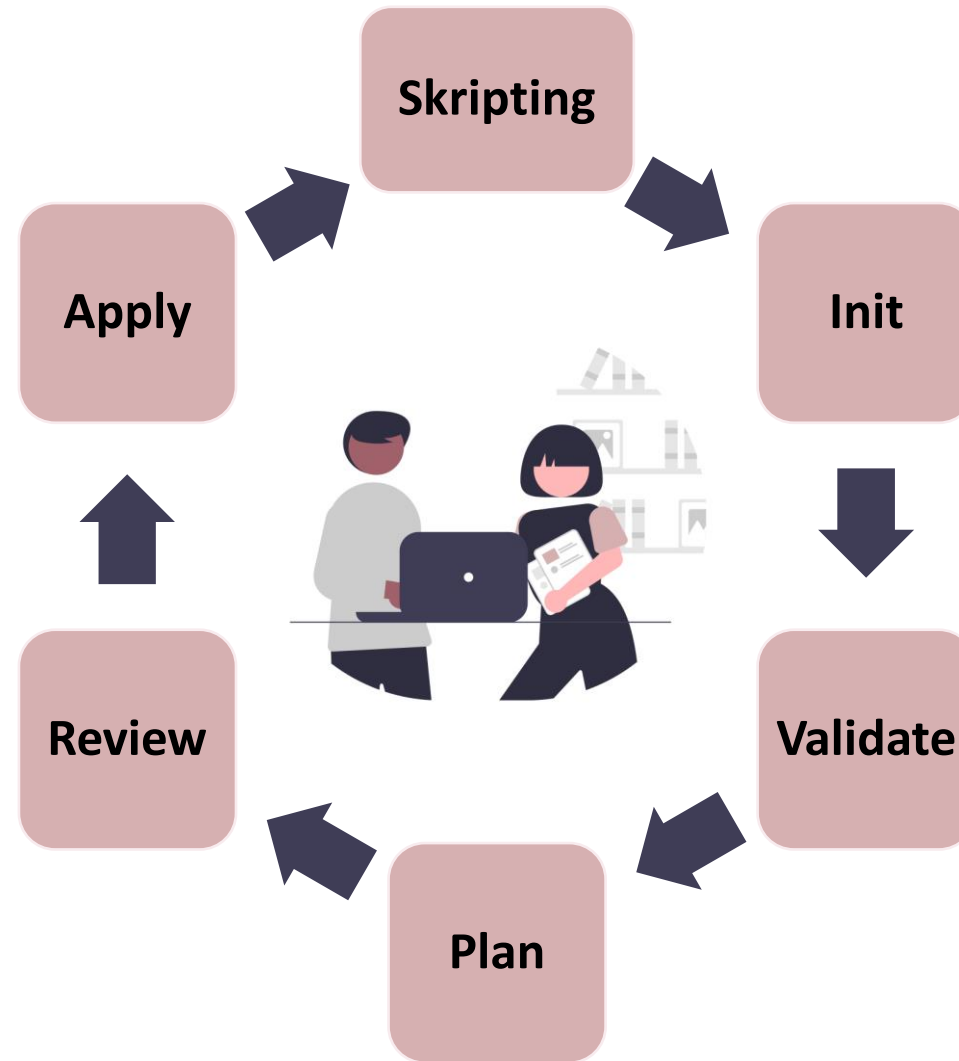
## Installation is easy & simple

```
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/
```

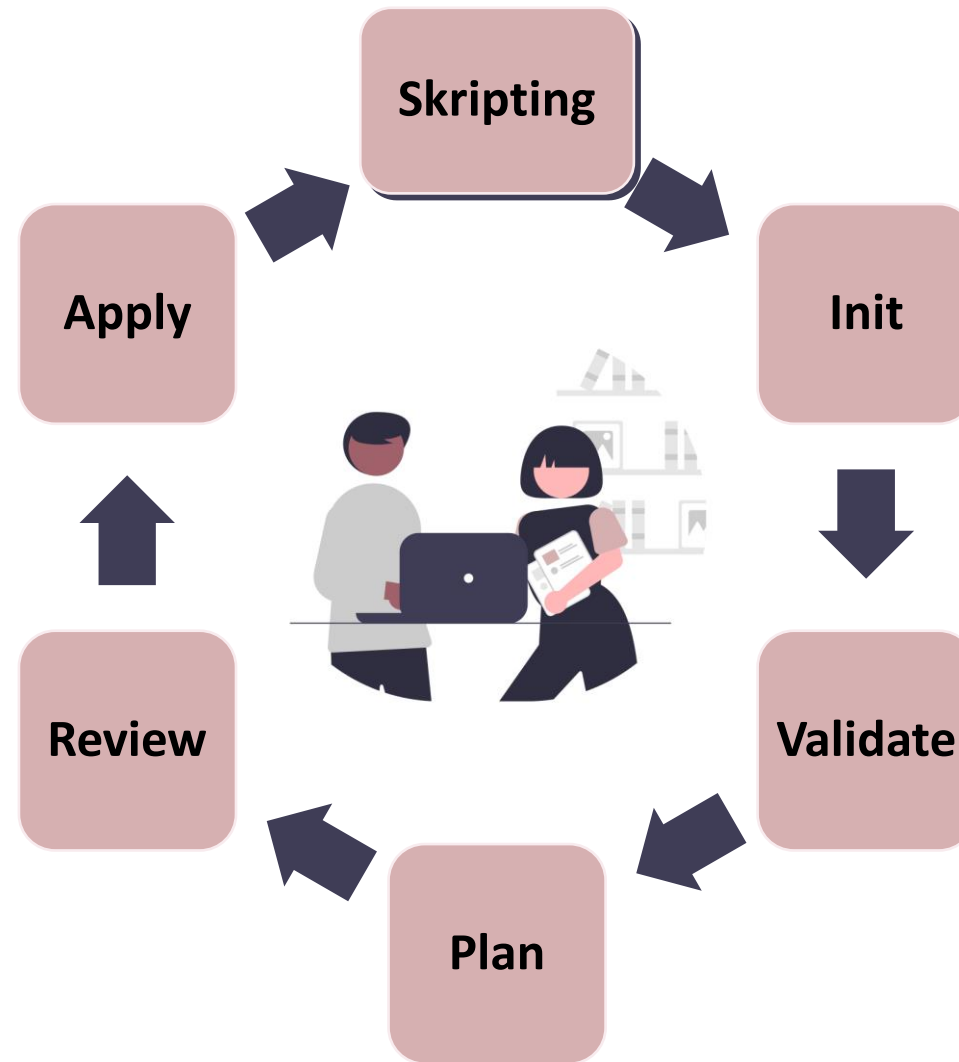
👉 <https://www.terraform.io/downloads.html>

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

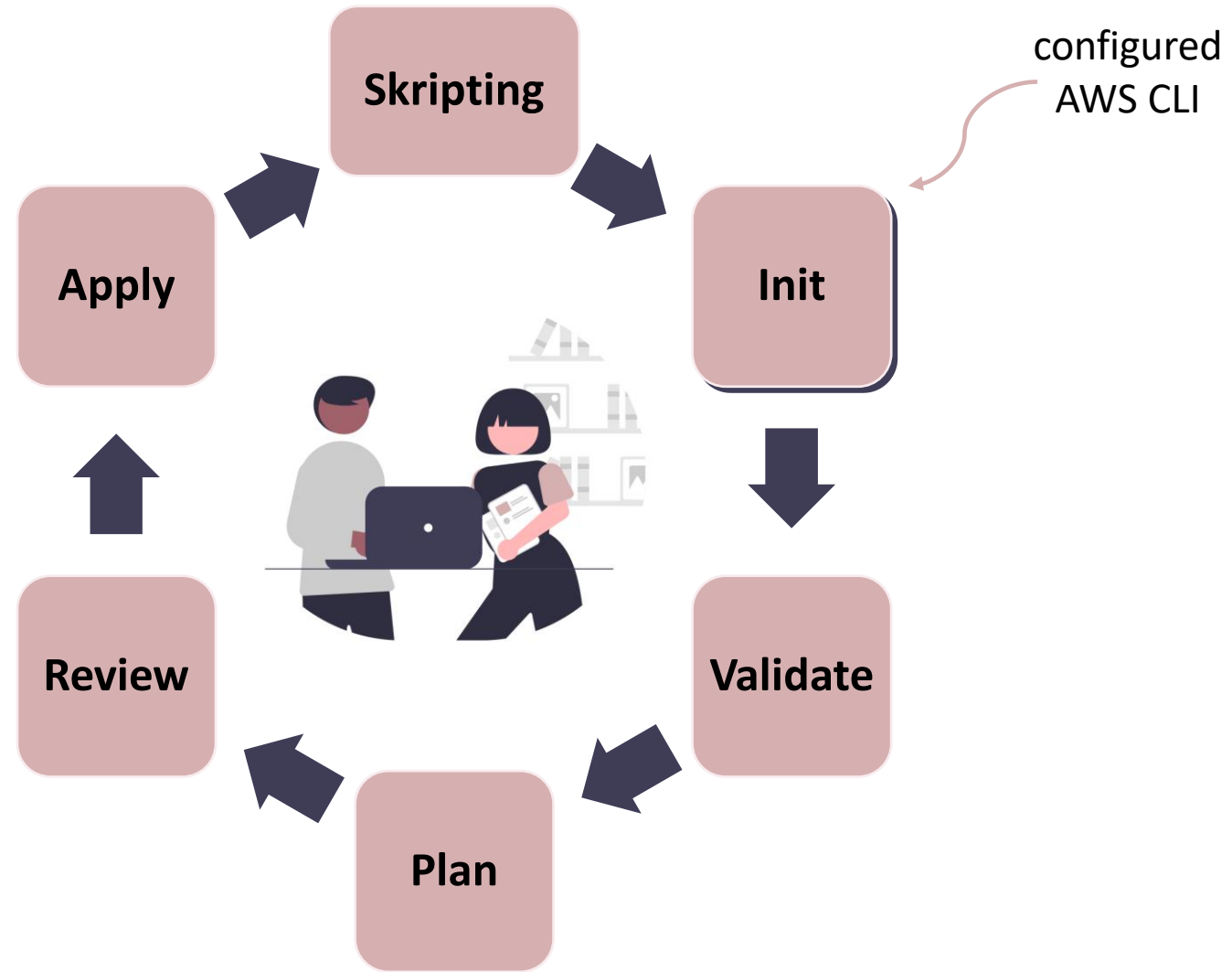
## Basic Workflow



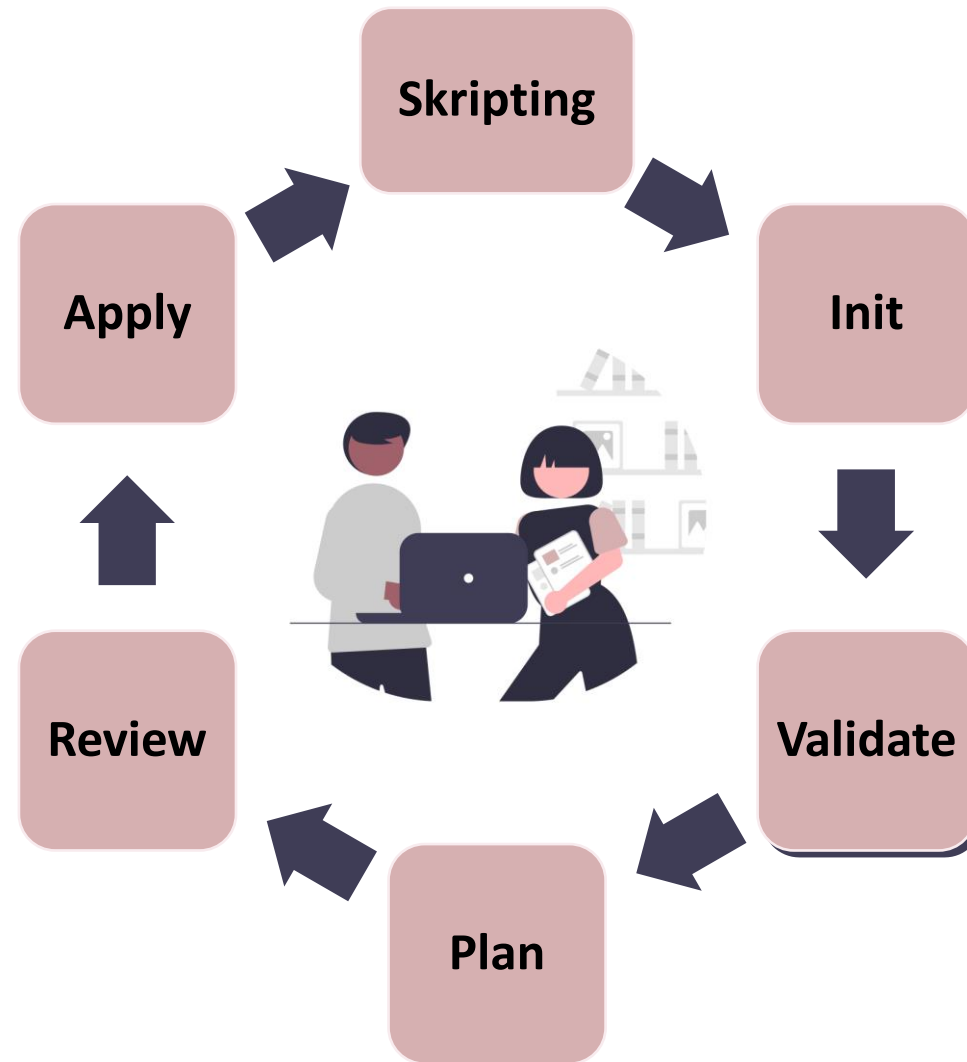
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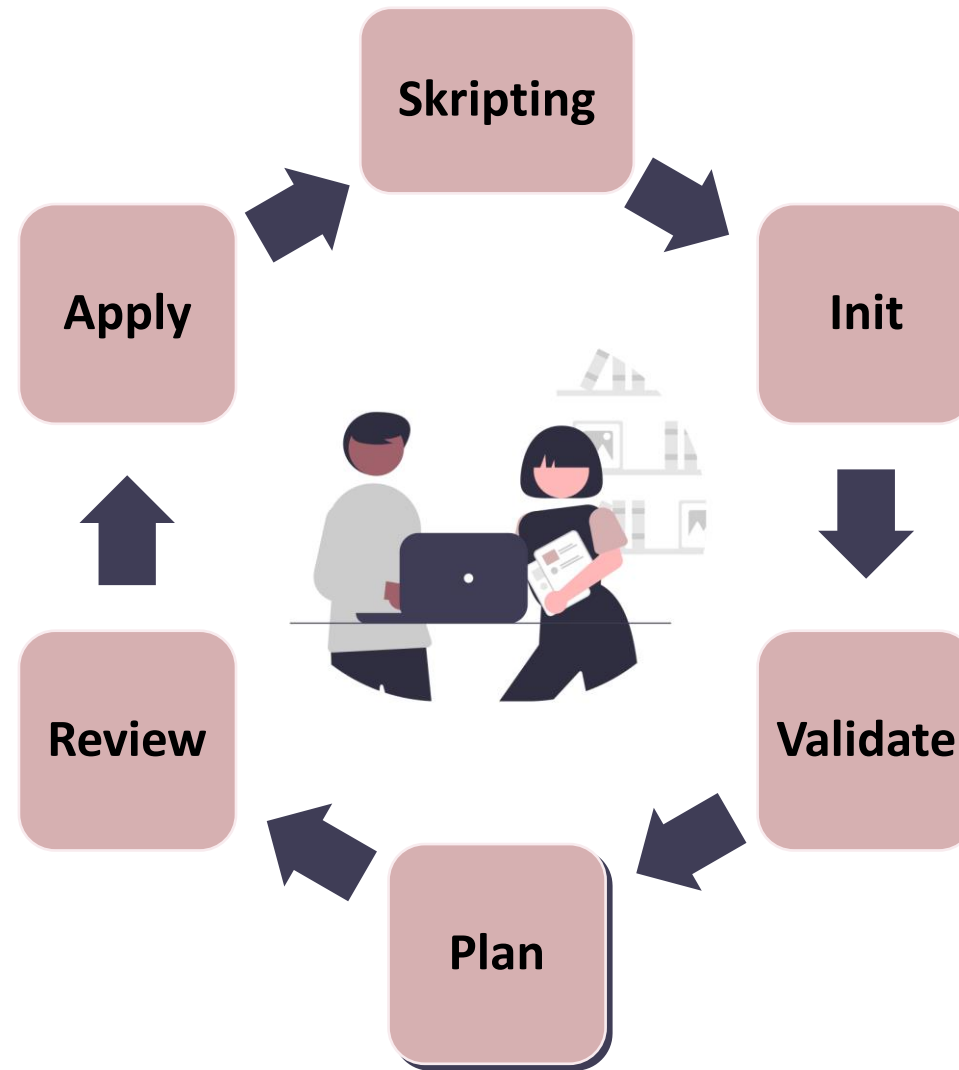
## Basic Workflow



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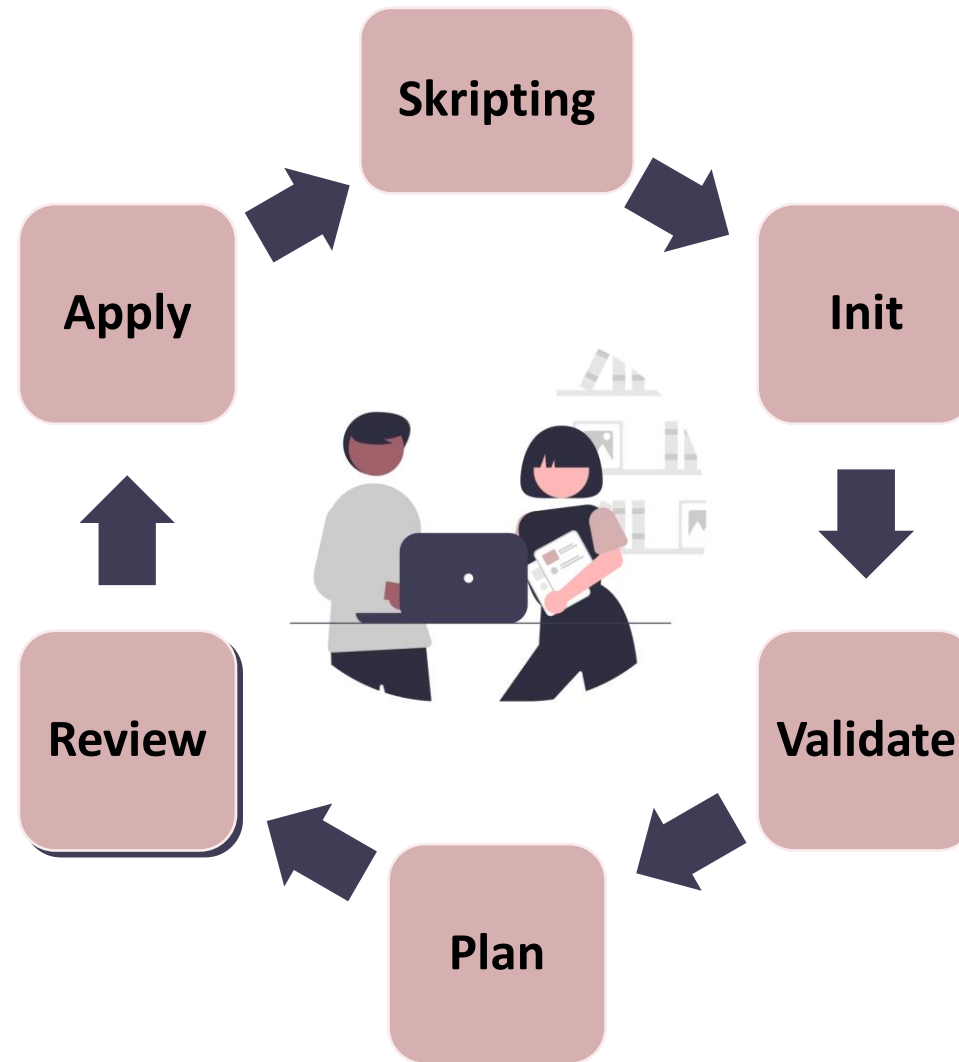


## Basic Workflow

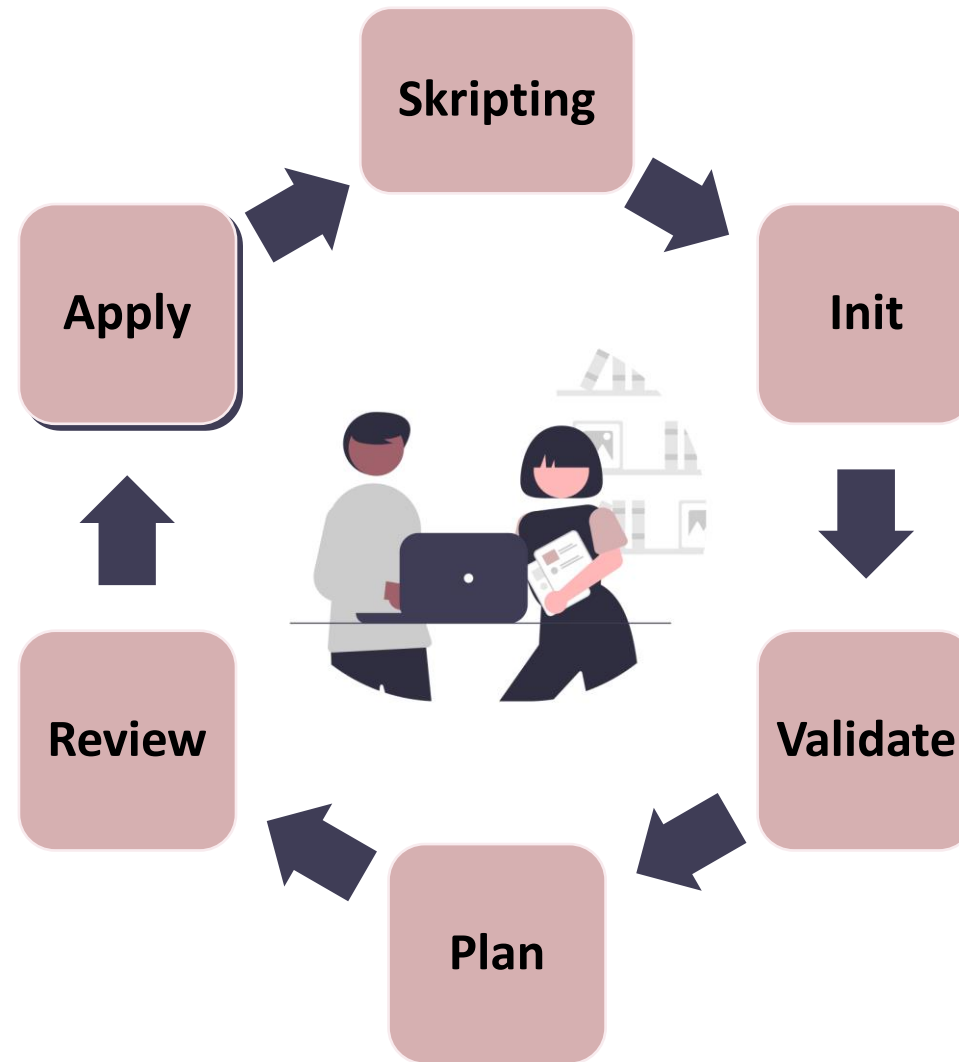




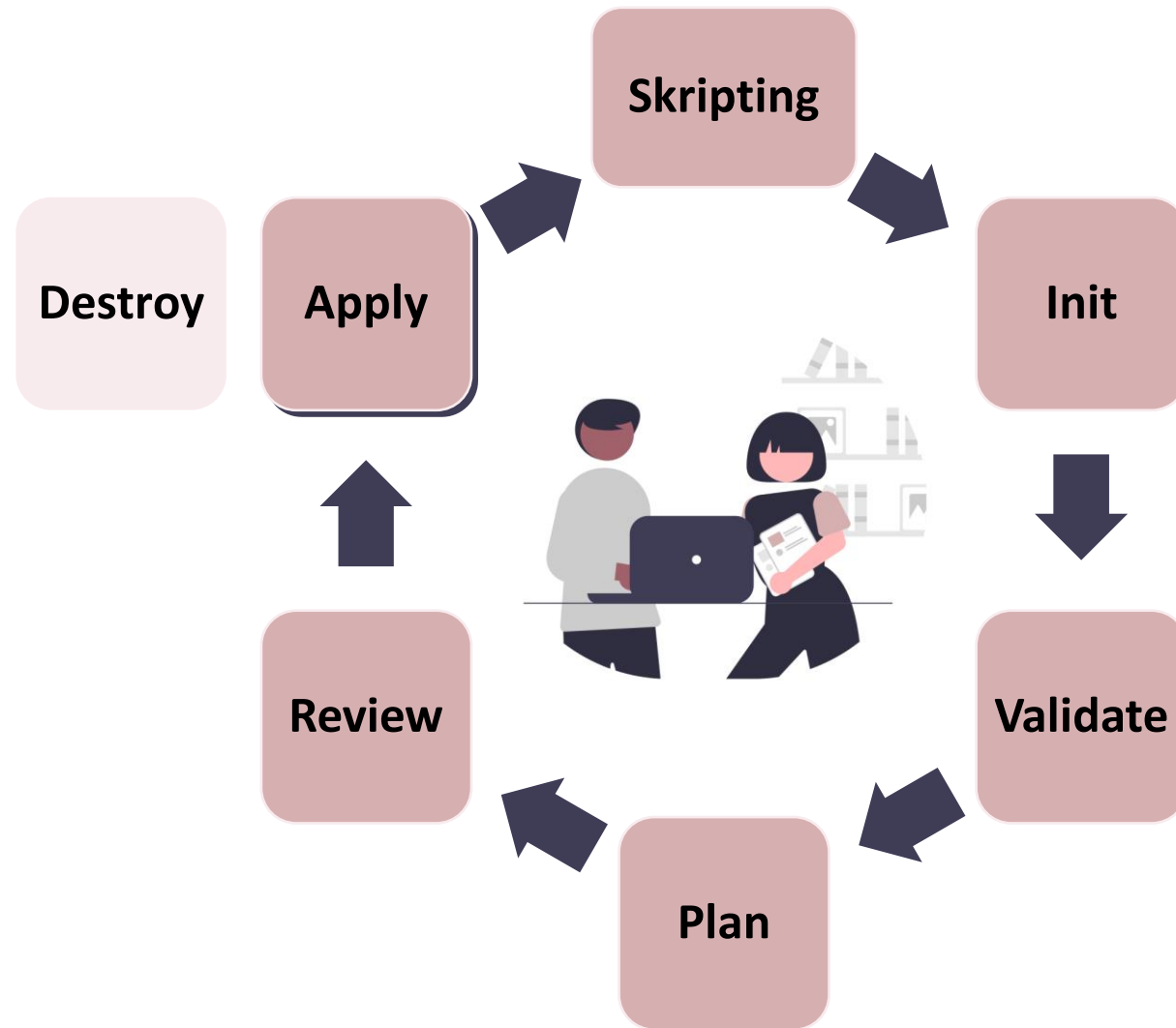
## Basic Workflow



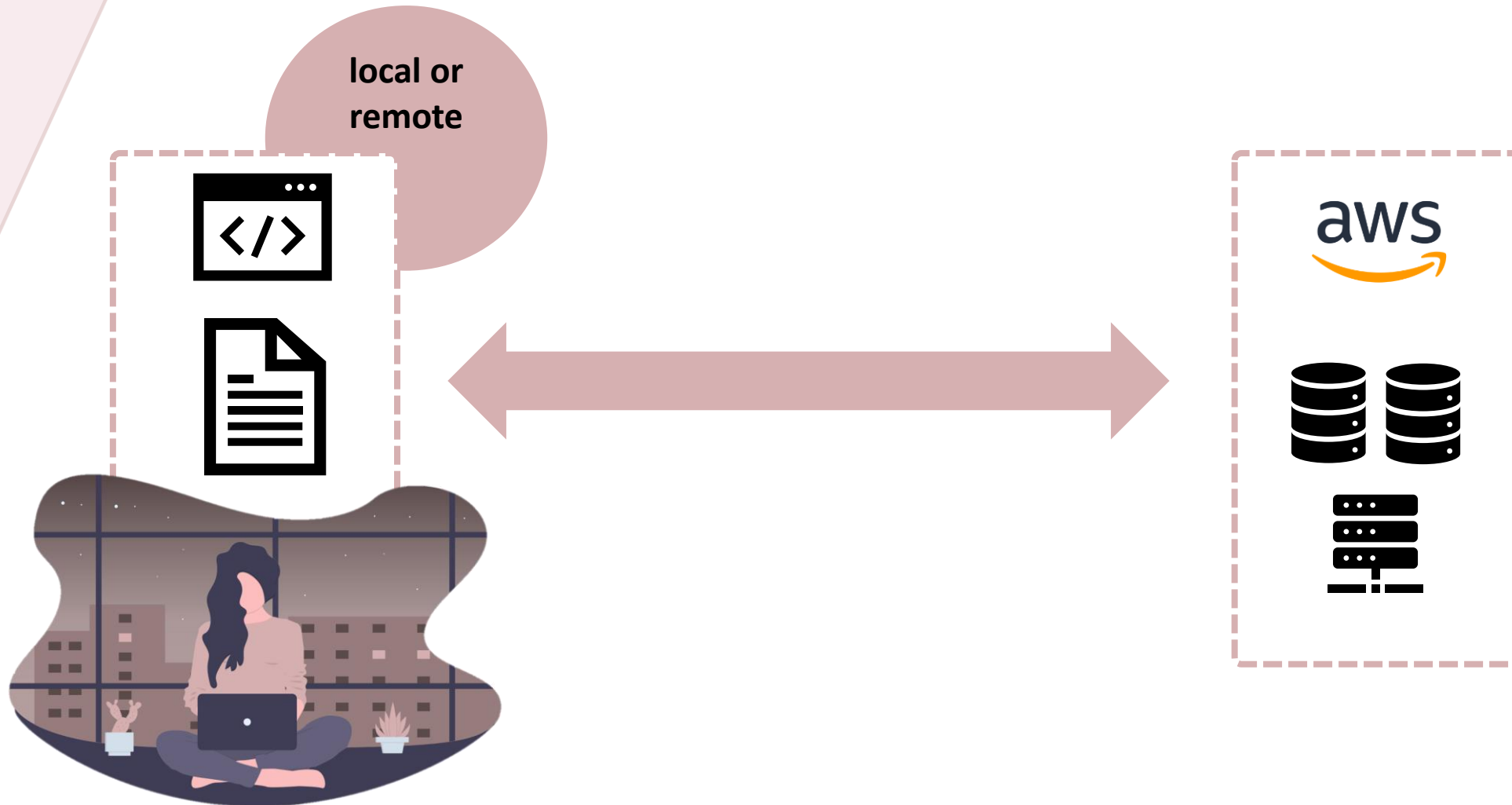
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## Basic Workflow

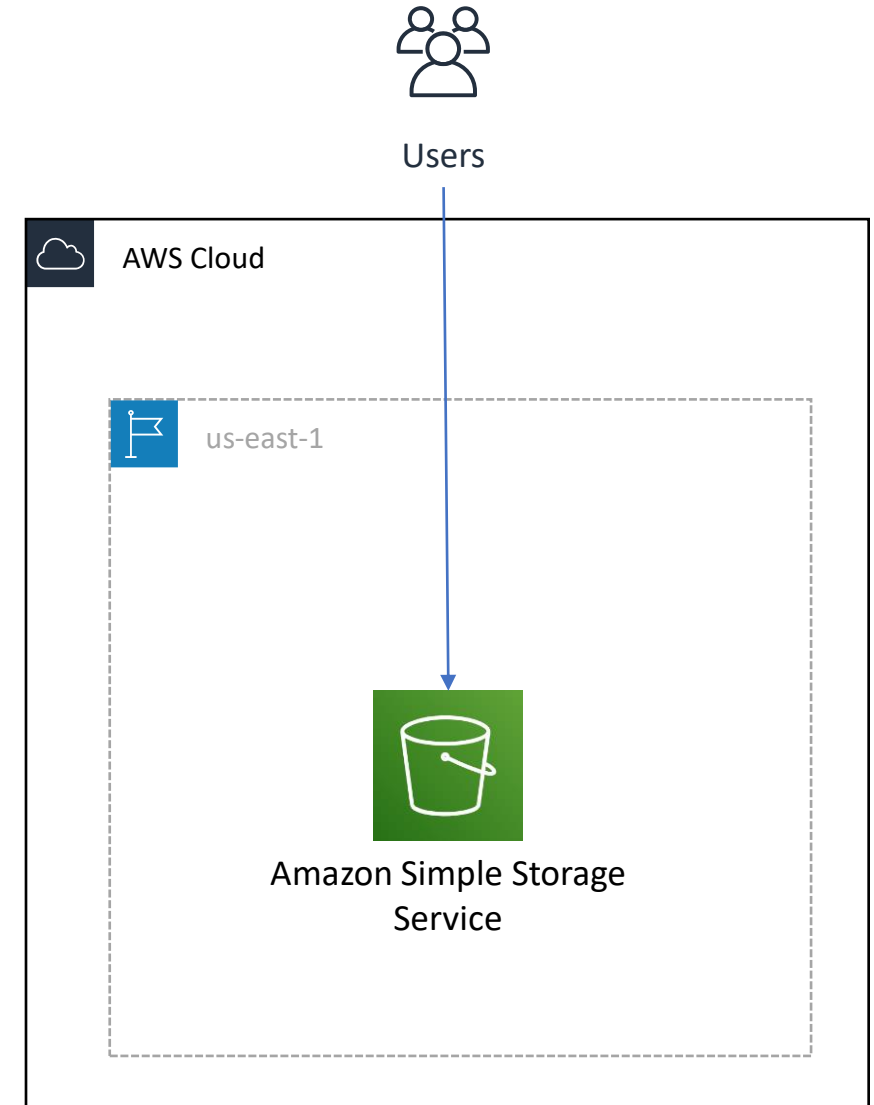


## States



## 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



every provider has its own resource set

## Alternatives & Next Steps





**Your  
set up is  
reviewable**



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**Wir suchen dich!**

Java-Entwickler\*in

FE/BE/Fullstack-Entwickler\*in

Testmanagement  
uvm.

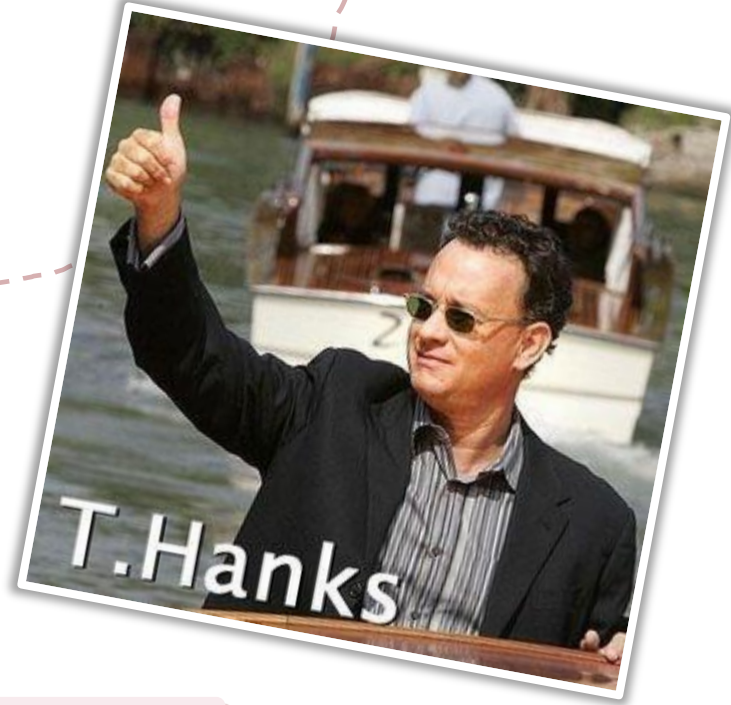
<https://codecampn-jobs.personio.de/>

oder meld dich  
[nora.schoener@codecamp-n.com](mailto:nora.schoener@codecamp-n.com)

Wir stellen  
ein trotz  
Corona!

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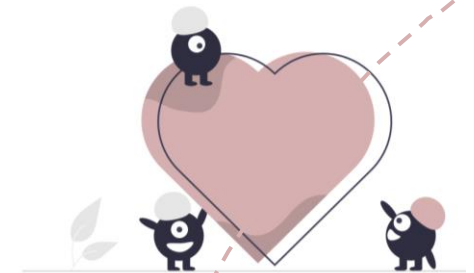


@norchén



<https://wolkencode.de>

**<https://wolkencode.de/posts/terraform-101/>**





## photos



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