

# Development Tips

## *Software Architecture*

Brae Webb

May 6, 2024

*Question*

What did we *learn* from the cloud assignment?

*Question*

What did we *learn* from the cloud assignment?

*Answer*

Cloud development is *painful*?

*Question*

How can we make this *less* painful?

*Some ideas*

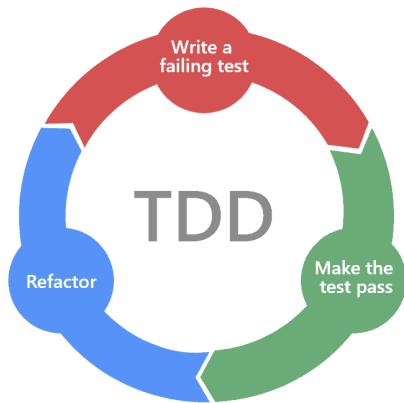
1. Gain confidence through *testing*
2. *Automate* what you're repeating
3. *Tighten feedback loop* as much as possible
4. *Log and monitor* what you can

## $\S$ *Testing*

*The testing elephant in the room*

Test-driven development

## *TDD in theory*



*[Marsner, 2019]*



*What do you primarily get from TDD?*

1. Regression tests (confidence)

*What do you primarily get from TDD?*

1. Regression tests (confidence)
2. Small isolated components

*Question*

Do you have to use TDD to get these benefits?

*Question*

Do you have to use TDD to get these benefits?

*Answer*

No.

*Question*

Do you have to use TDD to get these benefits?

*Answer*

No. But it can make it easier.

*Question*

When should you write a test?

*Question*

When should you write a test?

*Answer*

Whenever you are checking manually something often

### *Examples*

- Checking the endpoints your API.



### *Examples*

- Checking the endpoints your API.
- Checking a feature in the frontend of your interface.

*§ Automation*

## *Examples*

- Running tests.

### *Examples*

- Running tests.
- Starting locally and running tests locally.

### *Examples*

- Running tests.
- Starting locally and running tests locally.
- Deployment (`deploy.sh`).

### *Examples*

- Running tests.
- Starting locally and running tests locally.
- Deployment (**deploy.sh**).
- Deployment and running tests.

*Tighten feedback loop* as much as possible

## $\S$ *Feedback Loops*



## *Examples*

- Containers

### *Examples*

- Containers
- Local database (docker-compose)

### *Examples*

- Containers
- Local database (docker-compose)
- Local cloud services (e.g. S3)

*Log and monitor* what you can

*§ Log and Monitor*

Refer to week 9 content

*Tip*

Enable CloudWatch on EC2

*Aside*

Environment variables



## References

[Marsner, 2019] Marsner (2019).

Why test-driven development (tdd).

<https://marsner.com/blog/why-test-driven-development-tdd/>.