



# *Cloud Native Development for Python*

Microsoft X Pycon Indonesia

November 2020



# Agenda

- Introduction
- Offline/Online Development (using WSL and Codespaces)
- Deployment and automation (using CI/CD and IaC)

# Introduction

# Hi, everyone!



**Johanes Alexander** ([Twitter](#)/[LinkedIn](#))

*2008 – 2012, IT Telkom (Computer Engineering)*

*2012 – 2016, XL Axiata (Business Intelligence)*

*2016 – 2018, ITB (MBA)*

*2016 – 2020, Gojek (Solution Architect, Product Engineer, Machine Learning Engineer)*

*2020 – Now, Microsoft (Cloud Solution Architect)*

# Offline/Online Development

Using WSL (Windows Subsystem for Linux) and Codespaces

# Develop Anywhere

github.com/alexanderv21/python-docs-hello-world

Pull requests Issues Codespaces Marketplace Explore

-hello-world

world

Actions Projects Wiki Security Insights Settings

master 2 branches 8 tags

Go to file

Add file

Code

This branch is 8 commits ahead of Azure-Samples:master.

Pull request

Compare

alexanderv21 fix iac destroy workflow	39da633 9 days ago	33 commits
.github	fix iac destroy workflow	9 days ago
.gitignore	adding test step on ci	9 days ago
LICENSE	Initial commit	4 years ago
README.md	adding iac with terraform	9 days ago
app.py	add badges; fixing failing test	9 days ago
requirements.txt	adding test step on ci	9 days ago
test_app.py	adding test step on ci	9 days ago

README.md

hello-world passing

https://alexanderv21-python-docs-hello-world-63q2.github.dev



EXPLORER

OPEN EDITORS

PYTHON-DOCS-HELLO-WORLD [CODESPACES]

.github

pythonenv3.8

.gitignore

app.py

LICENSE

README.md

requirements.txt

test\_app.py

Preview README.md

hello-world passing

page\_type: sample description: "A minimal sample app that can be used to demonstrate deploying Flask apps to Azure App Service on Linux."

- python products:
- azure
- azure-app-service

## Python Flask sample for Azure App Service (Linux)

This is a minimal Flask app that can be deployed to Azure App Service on Linux.

For instructions on running and deploying the code, see [Quickstart: Create a Python app in Azure App Service on Linux](#).

### Contributing

This project has adopted the [Microsoft Open Source Code of Conduct](#). For more information see the [Code of Conduct](#).

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL

codespace → ~/workspace/python-docs-hello-world (master) \$

<https://github.com/features/codespaces>

<https://github.com/alexanderv21/python-docs-hello-world>

# Offline/Online Development

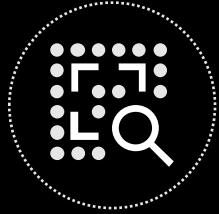
Demo

# Deployment and Automation

Using CI/CD and IaC



# End-to-end, code-to-cloud DevOps



Home for all developers  
Home for the world's code

- Elastic, to any scale
- Fully managed
- Packages always the latest
- Supports all OS for CI/CD
- Largest ecosystem
- Community-led automation



Deploy anywhere, including  
your own data centers

- On-prem
- Azure
- AWS
- Google Cloud Platform



# Appendix

# Motivations

## Windows Subsystem for Linux (WSL)

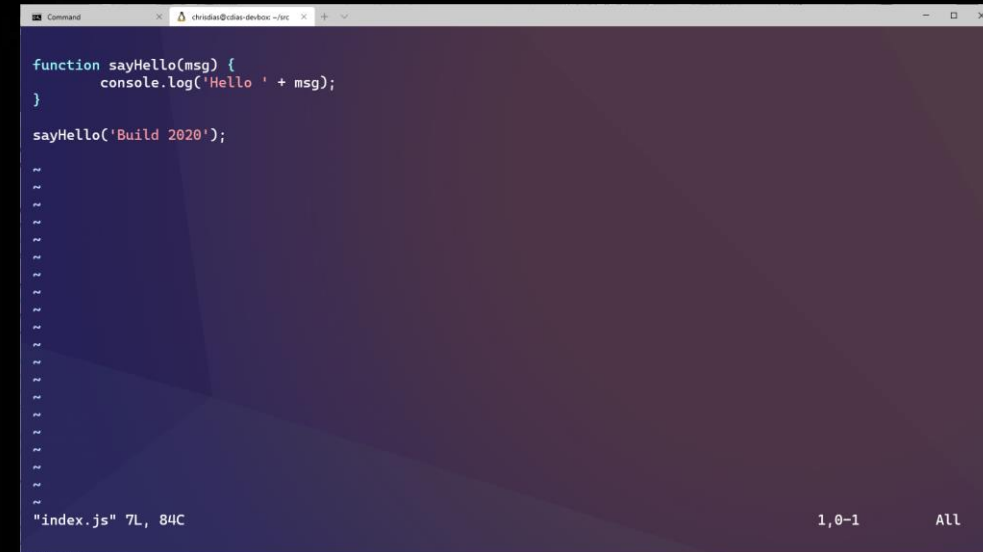
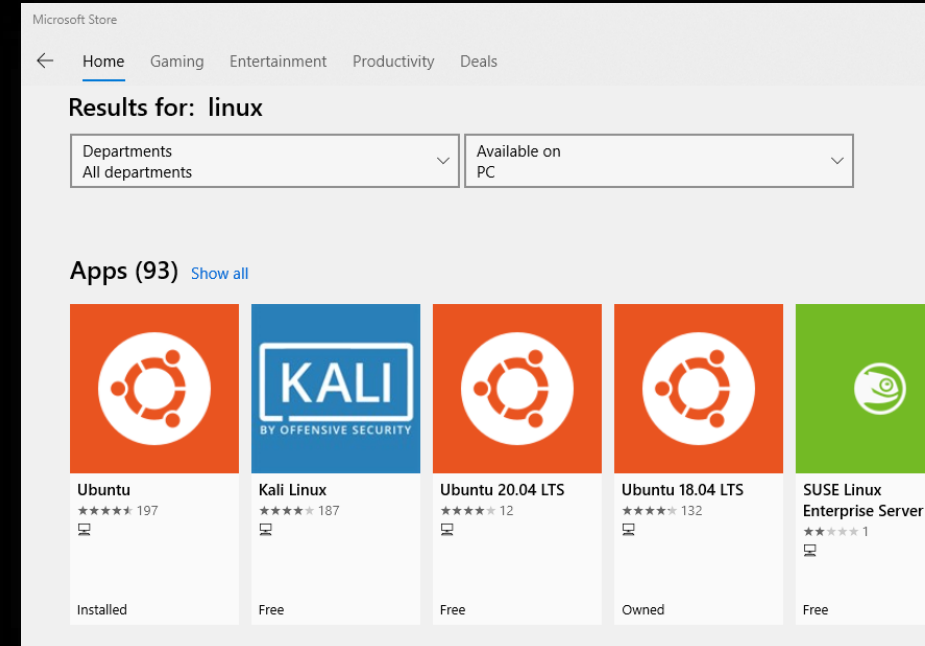
- Run a full Linux distro in Windows

## Development and test are increasingly remote

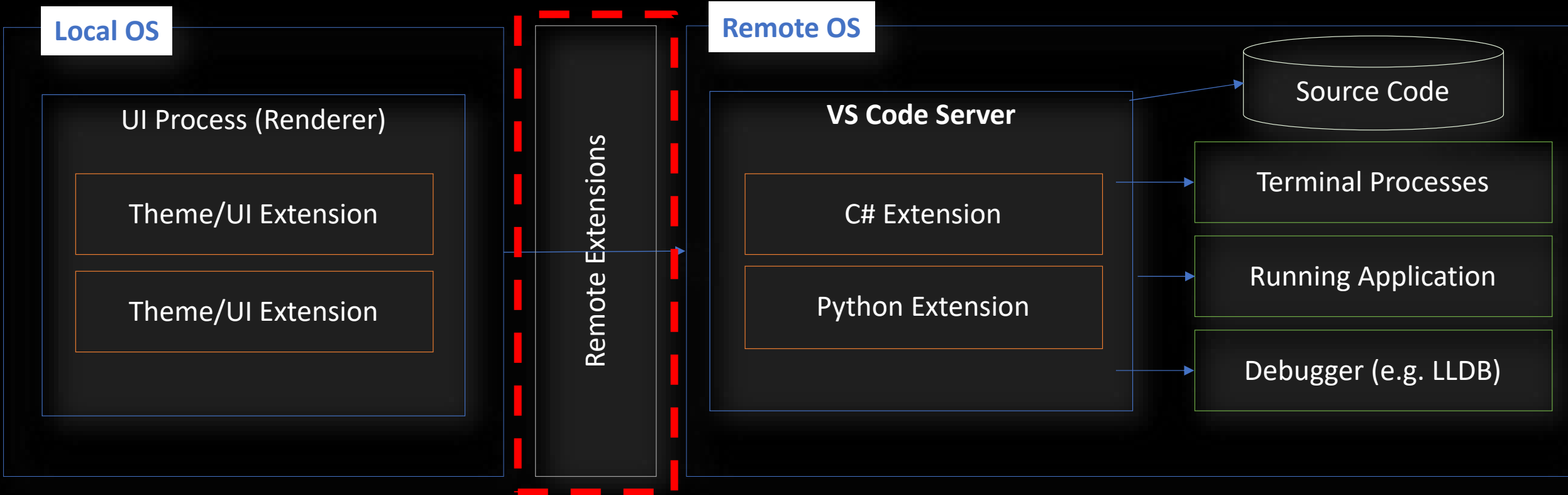
- *Facebook*: Mono repo, team members use huge VM as a remote dev box
- *Data scientists*: Leverage specialized VMs (e.g., GPU heavy servers)
- *Cloud-based tools*: codesandbox, gitpod, codepen, stackblitz

## Poor development experiences

- *VMs*: Terminal + vim or file syncing
- *Tools*: Need to replicate context locally
- *Remote desktop*: Typing, mouse lag, hard to set up on Linux
- *Browser only* tooling solutions



# Develop in context of the remote host



Remote extensions connect the local VS Code to the remote server

# Remote development extensions

## Remote—WSL (Windows Subsystem for Linux)

- Full Linux distro on Windows
- Isolated development environment(s)

## Remote—SSH

- Develop on remote VMs
- Security, better battery life and performance, unique platform requirements
- Standard SSH infrastructure, requires SSH Server

## Remote—Containers

- A better attach to running Containers
- Sandbox, reproducible development environments
- Configure with `devcontainer.json`

## Visual Studio Codespaces

- Microsoft managed VM/Container
- Web and Desktop access
- Configure with `devcontainer.json`
- Self hosted Codespaces

