



Code Like a Snake Charmer

Deploying Python Data Models in Azure

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Education

Texas A&M - MS in Analytics
LSU - BS in Spatial Analysis

Photographer

<http://jamey.photos>

Blog

<https://STATCowboy.com>

Code

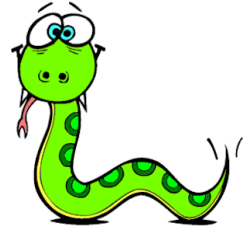
<https://github.com/STATCowboy/SnakeCharmer-Adv>
<https://github.com/STATCowboy/SnakeCharmer-DeployPython2Azure>

Agenda



1. Introduction to Python / Anaconda / IDEs
2. Python and Microsoft
3. Azure CLI
4. Azure App Services
5. Azure Functions
6. Docker & Flask
7. Azure Container Registry
8. Azure Container Instances
9. Azure Kubernetes Services
10. Azure Databricks & Azure Data Factory
11. Azure DevOps & Continuous Integration & Delivery (CI/CD) Pipelines

Introduction to Python



Why Python?

- Expansive Open Source Library of Data Science Tools (Giant Ecosystem)
- Easy language for new programmers
- Microsoft Support in tools like Azure Databricks, Azure Function Apps, Azure Machine Learning, SQL Server 2017+, Microsoft Machine Learning Server
- You can code on a Raspberry Pi (Who doesn't like Pi!)
- The most popular program languages (IEEE Language Rankings 2018 #1)
- Interpreted language, saves you time, no compilation and linking is necessary

Anaconda



Source: <http://www.anaconda.com>

Anaconda

<https://www.anaconda.com/download/>

Download the 64-bit Python 3.7 version (still can setup Python 2.7 environments)



You can use miniconda if you don't want the full environment.
(I have switched to it).

<https://docs.conda.io/en/latest/miniconda.html>

Anaconda

Conda Commands

- Export Conda Environment to YAML file to build a new environment
 - `conda env export > <filename>.yaml`
 - * activate the environment to export first
- Create Conda environment from YAML file
 - `conda env create -f <filename>.yaml -n <ENV NAME>`

<https://docs.conda.io/projects/conda/en/latest/user-guide/tasks/manage-environments.html>

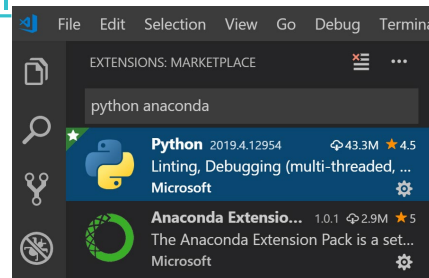
Visual Studio Code



VS Code Python Shortcuts

<https://code.visualstudio.com/docs/python/python-tutorial>

- Command Palette (CP) – `ctrl+Shift+P`
- Select Python Interpreter (in CP) – Python: Select Interpreter
- Run Selection/Line in Python Terminal – `shift+Enter`
- Install pylint for Highlighting Syntax – `conda install pylint` (run in all env)
- Install Python and Anaconda Extensions and Azure Extensions
- IPython console support in Python Interactive window



Azure CLI

Command-line tool for managing Azure resources

<https://docs.microsoft.com/en-us/cli/azure/?view=azure-cli-latest>



Azure App Services

Web Apps on a Fully Managed Platform

<https://azure.microsoft.com/en-us/services/app-service/>

<https://docs.microsoft.com/en-us/azure/python/tutorial-deploy-app-service-on-linux-01>



Azure Functions

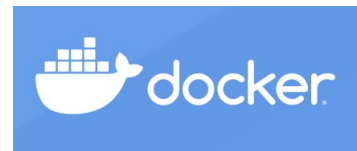
Serverless Compute Platform



<https://azure.microsoft.com/en-us/services/functions/>

<https://azure.microsoft.com/en-us/blog/announcing-the-general-availability-of-python-support-in-azure-functions/>

Docker & Flask

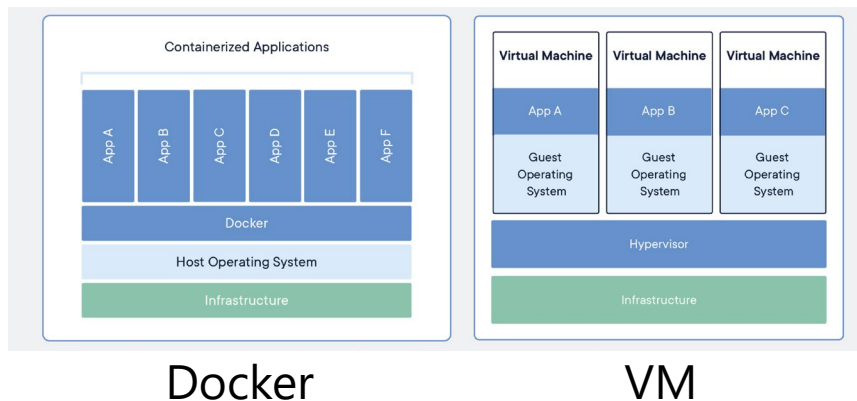


Software delivered as Lightweight Containers – Docker
Small core Web Framework in Python - Flask

<https://www.docker.com/>

<https://www.docker.com/resources/what-container>

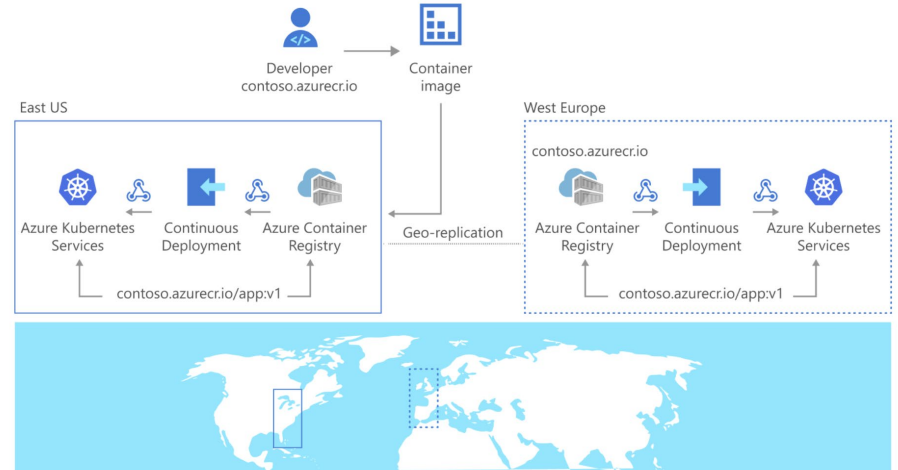
<https://www.fullstackpython.com/flask.html>



Azure Container Registry

Registry of Docker and OCI images in Azure

<https://azure.microsoft.com/en-us/services/container-registry/>



Azure Container Instances

Run Containers on Azure without Managing Servers

<https://azure.microsoft.com/en-us/services/container-instances/>

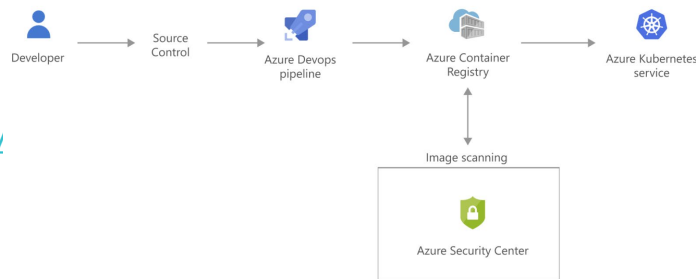
<https://docs.microsoft.com/en-us/azure/container-instances/container-instances-quickstart>



Azure Kubernetes Services

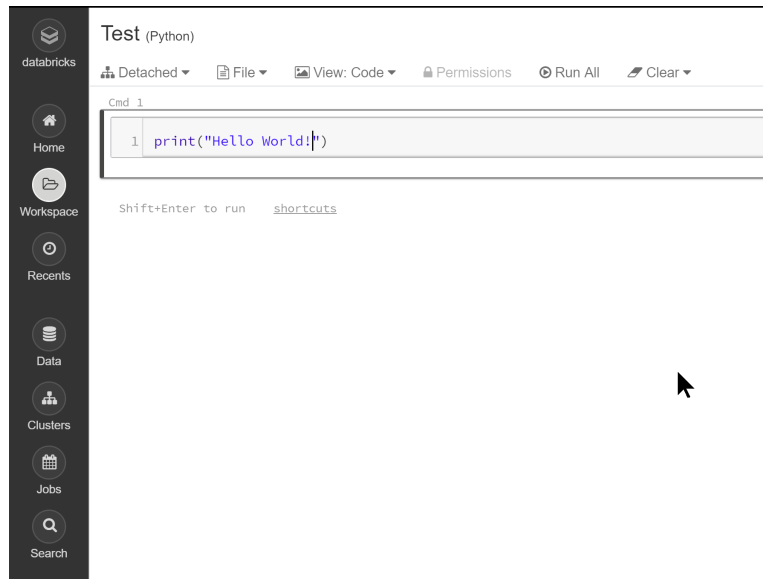
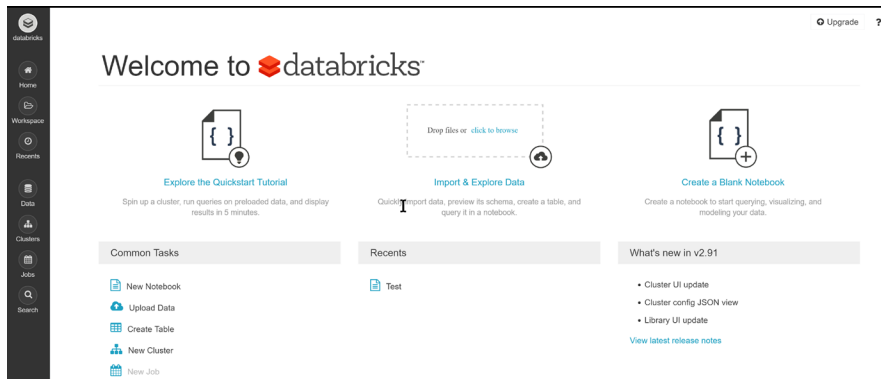
Deploy/Manage Containerized Apps in Kubernetes in Azure

<https://azure.microsoft.com/en-us/services/kubernetes-service/>



Python and Azure Databricks

Workbooks



Azure DevOps & CI/CD Pipelines



Modern Dev Services in Azure



Azure Boards

Deliver value to your users faster using proven agile tools to plan, track, and discuss work across your teams.

<https://dev.azure.com>



Azure Test Plans

Test and ship with confidence using manual and exploratory testing tools.



Azure Pipelines

Build, test, and deploy with CI/CD that works with any language, platform, and cloud. Connect to GitHub or any other Git provider and deploy continuously.



Azure Artifacts

Create, host, and share packages with your team, and add artifacts to your CI/CD pipelines with a single click.



Azure Repos

Get unlimited, cloud-hosted private Git repos and collaborate to build better code with pull requests and advanced file management.

Extensions Marketplace

Access extensions from Slack to SonarCloud to 1,000 other apps and services—built by the community.

DEMO

MS & Python





Thank You

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