TODO

Watch existing videos on YouTube for recording ideas

Look into better microphone

Make fun and exciting intro video

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Hello! I'm Dylan Budgen, a seasoned Software Engineer from the United Kingdom with a passion for technical education.

Over the course of my career, I've had the privilege of instructing over a thousand students through engaging, hands-on workshops, equipping them with practical skills and knowledge to excel in the tech industry.

I understand that online learning can often feel daunting and monotonous. Drawing from my professional experiences, I design courses that mimic real-world scenarios, making your learning experience more relevant and exciting. This approach not only enhances engagement but also enables you to apply your newfound knowledge immediately in real-world situations.

I look forward to joining you on this exciting journey!

Mac

deployment steps

az login

az deployment group create --subscription udemy-courses --resource-group bicep-course --name deployment --template-file main.bicep

**--mode**

9f53062f-e565-443b-8eb8-63aeb88dc7fd

Software

Kap

Quicktime

**Screenium – paid**

handbrake app – converting videos

Equipment

Data types??

Deploying resource groups, deployment scopes Where should I show them deploying resource groups?

Resource scopes

Parents

Union

String functions

Arrays, default values

Variable array for container names?

Dependencies – implicit, explicit, Visualize dependencies

**Lesson 1: Introduction to Azure Bicep**

**Lesson 2: Creating your first Azure Bicep template**

**Lesson 3: Deploying resources with Azure Bicep**

**Lesson 4: Variables, parameters and outputs**

**Lesson 5: Bicep functions**

**Lesson 6: Working with modules in Azure Bicep**

**Lesson 7: Advanced Bicep concepts (loops, conditional deployments, existing resources)**

**Lesson 8: Advanced Bicep functions (files, dates, lambdas)**

**Lesson 9: Testing and validating Azure Bicep templates**

**Lesson 10: Troubleshooting Azure Bicep deployments**

**Lesson 11: Real-world Project – deploying a function app with logging**

**Lesson 12: Preview features**

**Lesson 1: Introduction to Azure Bicep**

* What is Infrastructure as Code (IaC)? Why use IaC?
* What is ARM?
* Introduction to Bicep
* Why use Bicep over other IaC tools?
* Terraform vs bicep
* Setting up the environment for Bicep
  + VS code, bicep extension
* consistency in configurations across environments, no more ‘snowflake’ configurations
* reduced human error in deployments
* increased productivity of speed of changes
* prevents environments contention with ability to dynamically create new infra



Windows

<https://learn.microsoft.com/en-us/cli/azure/install-azure-cli-windows?tabs=azure-cli>

Mac

brew install azure-cli

az bicep install

**Lesson 2: Creating your first Azure Bicep template**

* Create your first Bicep file
* Converting bicep file to ARM template

**Lesson 3: Deploying resources with Azure Bicep**

* Overview of deployment options Azure CLI, PowerShell, Azure DevOps, etc.)
* Deployment of Bicep files with Azure CLI
* Deployment of Bicep files with PowerShell
* Integrating Bicep deployments of Bicep files with Azure DevOps Pipelines
  + <https://dev.azure.com/dylanbudgen/udemy-courses/_build/results?buildId=2&view=logs&j=12f1170f-54f2-53f3-20dd-22fc7dff55f9>
* What are deployment modes?
  + Validation, Incremental, Complete

**Lesson 4: Variables, parameters and outputs**

* Using variables in Bicep
* Using parameters in Bicep
  + Lower camel case
* Using outputs in Bicep
* Data types

**Lesson 5: Bicep functions**

* Introduction to Bicep functions
* Commonly used Bicep functions
  + Data type conversions?
  + Scope functions
  + Resource functions
  + Guid functions
  + Array functions
  + String functions
  + Numeric functions

**Lesson 6: Working with modules in Azure Bicep**

* What are Bicep modules?
* How to create and use Bicep modules.
  + Storage account, create one manually, then change to module
  + Explain that it creates new deployment
  + Explain the name different module and resource

**Lesson 7: Advanced Bicep concepts (loops, conditional deployments, existing resources)**

* Nested resources in Bicep
  + creation of single container in storage account module
* Loops in Bicep
  + Creating array of containers (follow up from parents)
* Explore different types of loops?
* Working with existing resources
  + role assignments (also show them with a different RG)
  + introduce with a single role assignment, then add loop for complex loops
* Managing dependencies in Bicep
  + RBAC module being run after the storage accounts deployed
  + Modules vs resources – show this by creating a storage account without the module
  + Dependency management with resources and modules
  + Implicit vs explicit (explicit is discouraged)
* Conditional deployments in Bicep
  + audit storage account with Boolean param
* Ternary operators in Bicep
  + The conditional deployment will need a local variable for storage account names in the RBAC module – follow up from last module
* **Logical operators**

**Lesson 8 – Advanced Bicep functions (files, dates, lambdas)**

* Date functions
* Lambda functions
* File functions

**LESSON 7 HAS CHANGED LOTS – MAYBE UPDATE THE REST**

**Lesson 9: Testing and validating Azure Bicep templates**

* Validating Bicep using Azure CLI
  + Using linter in vs code
  + Az bicep build
    - Reports warnings
* Testing Bicep and ARM templates
  + Arm-ttk (doesn’t look very simple)
  + Installation and running tests
  + Mention API versions and why you would wantto skip tests

**Lesson 10: Troubleshooting Azure Bicep deployments**

* Debugging Bicep deployments and troubleshooting common issues
* Understanding deployment logs and error messages
  + Template validation (predeployment) - Storage account wrong length
  + Runtime failure – invalid value for minimumTlsVersion
  + Mention that nested resources sometimes don’t produce good results, look at deployment logs
* Validating Bicep with Azure DevOps Pipelines
  + <https://dev.azure.com/dylanbudgen/udemy-courses/_build/results?buildId=2&view=logs&j=12f1170f-54f2-53f3-20dd-22fc7dff55f9>

**Lesson 10: Best Practices and Tips – SHOULD I INCLUDE THIS?**

* Bicep best practices
* Tips for writing efficient Bicep templates
* https://learn.microsoft.com/en-us/azure/azure-resource-manager/bicep/best-practices

**Lesson 11: Real-world project – deploying a function app**

* Building a real-world infrastructure setup using Bicep
  + Deploy using pipeline with variables?
* Think of how I can use advanced topics
  + Type the compute module with the wrong type of dependencies values, then correct it
  + Also show them that storageAccount.name is the deployment name

**Lesson 12: Preview features**

* Find the features
* Import
* <https://learn.microsoft.com/en-us/azure/azure-resource-manager/bicep/bicep-import-providers>
* Object types
* <https://learn.microsoft.com/en-us/azure/azure-resource-manager/bicep/user-defined-data-types>

# User-defined data types

**Lesson 11: Review and Next Steps**

Review of the course

Next steps for learning more about Bicep and IaC