

CA - Experiment 12 - Final Practical Exercise and Wrap-Up

✓ Build and Deploy a Complete DevOps Pipeline, Discussion on Best Practices and Q&A

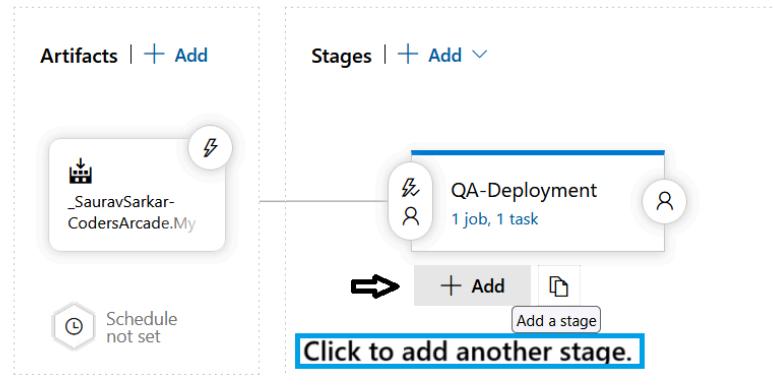
Objectives of Experiment 12 🚀💡

1. Complete the **final stage of the CI/CD pipeline** by deploying the `.war` file to the **Production Server (prodDemoCA)** using Azure DevOps Release Pipeline 🏁☁️
2. Set up and configure a **production-ready release pipeline** connected to the build artifacts 📦📦
3. Deploy the web application to the **Azure App Service (prodDemoCA)** as the production environment 🌎🚀
4. Perform **post-deployment validation** using Java-Selenium automation with **JUnit test cases** ✅📝
5. Update the automation script with your **production app URL** for live testing 🌐🌐
6. Enable the **Continuous Deployment Trigger (CD trigger)** to automate deployment on every GitHub push ⚡⚡
7. Observe automatic **Release creation (e.g., Release-4)** right after build completion and artifact publishing 🔄✍️
8. Learn how to handle **multi-stage pipelines** for QA and Production environments effectively 🎬💼
9. Ensure App Services (`demoCA` and `prodDemoCA`) are running during release execution 🌎💻
10. Experience the **full DevOps workflow**: Code → Build → Release → Deploy → Test, all done automatically 💻🔧🎉

✓ Here are the steps to follow for the Final Practical Exercise in DevOps VTU Experiment 12

1. You need to navigate to your Project & the Release Pipeline that you created in Experiment 11 as shown below:
2. Now you can follow these steps for Experiment 12 as shown below:

The screenshot shows the Azure DevOps interface for the 'TestProject'. The left sidebar highlights the 'Releases' section. The main area displays 'Release-1' under the 'QA-Deployment' stage. A blue callout box points to the 'Release-1' card with the instruction: 'Navigate to the same Release Pipeline that was successfully executed in the Experiment 11.' Another blue callout box points to the 'QA-Deploy...' button with the note: 'Note: The same Web Apps (demoCA & ProdDemoCA) (in my case), choose yours accordingly, should be started and in running state.'



The screenshot shows the 'Select a template' interface. At the top, there is a search bar with the placeholder 'Search' and a button labeled 'Click Here' with a downward arrow pointing to the list below. The list is titled 'Featured' and contains several deployment templates:

- Azure App Service deployment**: Deploy your application to Azure App Service. Choose from Web App on Windows, Linux, containers, Function Apps, or WebJobs.
- Deploy a Java app to Azure App Service**: Deploy a Java application to an Azure Web App.
- Deploy a Node.js app to Azure App Service**: Deploy a Node.js application to an Azure Web App.
- Deploy a PHP app to Azure App Service and Azure Database for MySQL**: Deploy a PHP application to an Azure Web App and database to Azure Database for MySQL.
- Deploy a Python app to Azure App Service and Azure database for MySQL**: Deploy a Python Django, Bottle, or Flask application to an Azure Web App and database to Azure Database for MySQL.
- Deploy to a Kubernetes cluster**: Deploy, configure, update your containerized applications to a Kubernetes cluster.
- IIS website and SQL database deployment**: Deployment Group: Deploy ASP.NET or ASP.NET Core web applications to an IIS Website and SQL database on physical or virtual machines (VM).

At the bottom right of the template list, there is a large blue 'Apply' button.

The screenshot shows the 'Stage' section of the pipeline configuration. A stage named 'Prod-Deployment' is selected, indicated by a blue border. The stage details show '1 job, 1 task'. To the right, a modal window titled 'Stage' displays the stage's properties. The 'Stage name' field contains 'Prod-Deployment', which is highlighted with a red arrow pointing to a 'Rename the stage' button. Below it, the 'Stage owner' is listed as 'Nandini Sarkar'. A large callout box on the right side provides the following instructions:

1. The same steps will be repeated but this time, the Web App will be "prodDemoCA" for the "Prod Deployment".
2. This is what happens in the industry.
3. First QA-Deployment-> Quality Assurance
4. Then Prod-Deployment-> Production Release

The screenshot shows the 'View stage tasks' interface for the 'Prod-Deployment' stage. A large callout box at the bottom right contains the instruction: 'Add the tasks' with an upward arrow icon.

The screenshot shows the 'Step 1' configuration for the 'Prod-Deployment' stage. On the left, the 'Run on agent' section shows 'Run on agent' selected. In the center, the 'Deploy Azure App Service' task is configured. The 'App type' dropdown is set to 'Web App on Windows', with a red arrow pointing to a 'Change to Linux' button. To the right, a 'Select & Authorize' section is shown, with a red arrow pointing to a 'Select & Authorize' button. A note at the bottom states: 'This setting is required.'

Stage name

Parameters ⓘ | ⚙️ [Unlink all](#)

Azure subscription * ⚙️ | [Manage](#) ⚙️

① Scoped to subscription 'Azure subscription 1'

App type ⚙️

App service name * ⚙️

DemoCA

ProdDemoCA  **Select the other Web App**

MVIT

QA-Environment

DevOps-RNSIT

**"ProdDemoCA" in my case.
Choose yours from the dropdown.**

Prod-Deployment
Deployment process

Run on agent  **Step 2** +

Deploy Azure App Service  [Azure App Service deploy](#)

Should look exactly like this screen.

Stage name

Parameters ⓘ | ⚙️ [Unlink all](#)

Azure subscription * ⚙️ | [Manage](#) ⚙️

① Scoped to subscription 'Azure subscription 1'

App type ⚙️

App service name * ⚙️

This field is linked to 1 setting in 'Deploy Azure App Service'

Startup command ⚙️

Agent job (1)

Remove

No changes here

Display name *

Run on agent

Agent selection ^

Agent pool (1) | [Pool information](#) | [Manage](#) (2)

Hosted Windows 2019 with VS2019



Demands (1)

Name	Condition	Value
+ Add		

Execution plan ^

Parallelism (1)

None Multi-configuration Multi-agent

Timeout * (1)

All pipelines > Release-1

Save Create release View releases ...

Pipeline Tasks (1) Variables Retention Options History

Prod-Deployment
Deployment process

...

Run on agent
Run on agent

+

Deploy Azure App Service
Azure App Service deploy



Step 3



Azure App Service deploy (1)

View YAML Remove

Task version 4.*



Display name *

Deploy Azure App Service

Connection type * (1)

Azure Resource Manager

Azure subscription * (1) | [Manage](#) (2)

Scoped to subscription 'Azure subscription 1'

App Service type * (1)

Web App on Linux



Verify

App Service name * (1)

ProdDemoCA



Verify

Deploy to Slot or App Service Environment (1)

Package or folder * (1)

Web App on Linux

App Service name * ProdDemoCA

Deploy to Slot or App Service Environment (i)

Package or folder * \$(System.DefaultWorkingDirectory)/**/*.war 

Runtime Stack (i)

Startup command (i)

Post Deployment Action v

Application and Configuration Settings v

Control Options v

Output Variables v

Because we are deploying "war" file.

Save   Create release  View releases ...

Web App on Linux

App Service name * ProdDemoCA

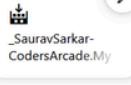
Deploy to Slot or App Service Environment (i)

Package or folder * \$(System.DefaultWorkingDirectory)/**/*.war

All pipelines >  Release-1  Create release  ...

Pipeline Tasks Variables Retention Options History

Artifacts | + Add



_SauravSarkar-CodersArcade.My

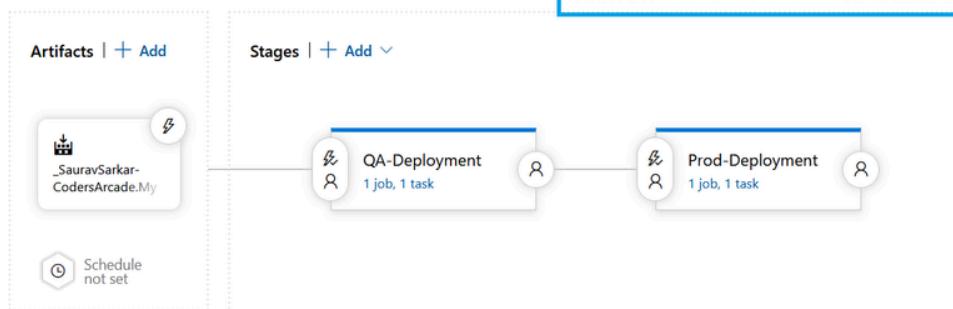
Stages | + Add v



QA-Deployment 1 job, 1 task

Prod-Deployment 1 job, 1 task

**1. This is how your "Release Pipeline" should look like after adding the tasks.
2. The initial task from Experiment 11 -> QA-Deployment.
3. The latest task from Experiment 12 -> Prod-Deployment.**

**Click on "Create release" to create a new release.****Create a new release**

Release-1



Pipeline ^

Click on a stage to change its trigger from automated to manual.

This time there will be two stages.

Stages for a trigger change from automated to manual.

Artifacts ^

Select the version for the artifact sources for this release

Source alias	Version
_SauravSarkar-CodersArcade.My...	20250520.1

Release description

Click here to create and start the Release.**Create****Cancel**

Here

Release-2 has been created

You should be able to view this new release "Release-2" created.

← Click "Release-2" to View Logs

Pipeline Tasks Variables Retention Options History

Artifacts | + Add

Schedule not set

Stages | + Add

QA-Deployment 1 job, 1 task

Prod-Deployment 1 job, 1 task

```
graph LR; QA[QA-Deployment] --> Prod[Prod-Deployment]
```

Release

Manually triggered by Nandini Sarkar 20/5/2025, 12:30 pm

Artifacts

SauravSarkar-CodersA... 20250520.1 master

Stages

QA-Deployment Queued Waiting in Hosted Windows ...

Prod-Deployment Not deployed

1 ↑ 2 ↑

The two stages will start in this new release "Release-2".

```
graph LR; QA[QA-Deployment] --> Prod[Prod-Deployment]
```

Release-1 > Release-2 > QA-Deployment ✓ Succeeded

← Pipeline Tasks Variables Logs Tests | Deploy Cancel Refresh Download all logs Edit ...

Deployment process
Succeeded

Run on agent
Succeeded

Run on agent

Pool: Hosted Windows 2019 with ... · Agent: Hosted Agent

Started: 20/5/2025, 12:31:13 pm · 53s

Initialize job	succeeded	8s
Download artifact - _SauravSarkar-CodersArcade.MyWebApp-AzureDevOps - drop	succeeded	2s
Deploy Azure App Service	succeeded	41s
Finalize Job	succeeded	<1s

The two stages "QA-Deployment" and "Prod-Deployment" will complete one by one.
Click to view the logs.
All green ✓ means the stages have completed successfully.

Release-1 > Release-2 > Prod-Deployment ✓ In progress ← In the dropdown you can select the stage.

← Pipeline Tasks Variables Logs Tests | Deploy Cancel Refresh Download all logs Edit ...

Deployment process
In progress

Run on agent
In progress

Run on agent

Pool: Hosted Windows 2019 with ... · Agent: Hosted Agent

Started: 20/5/2025, 12:32:23 pm · 3s

Initialize job

```
Current agent version: '4.255.0'  
Operating System  
Microsoft Windows Server 2019  
10.0.17763  
Datacenter  
  
Runner Image  
Image: windows-2019  
Version: 20250511.1.0  
Included Software: https://github.com/actions/runner-images/blob/win19/20250511.1/images/windows/Windows2019-Readme.md  
Image Release: https://github.com/actions/runner-images/releases/tag/win19%2F20250511.1  
  
Runner Image Provisioner  
2.0.437.1  
  
Current image version: '20250511.1.0'  
Agent running as: 'vssAdministrator'  
Prepare release directory.  
ReleaseId=2, TeamProjectId=fc23551b-2252-403f-8efa-72bda5f84eaa, ReleaseDefinitionName=Release-1  
Release folder: D:\a\1\a  
Environment variables available are below. Note that these environment variables can be referred to in the task (in the ReleaseDefinition) by replacing "_" with "." e.g. AGENT_NAME environment variable can be referenced using Agent.Name in the ReleaseDefinition:  
[AGENT_CLOUDID] --> [6e122598-1d31-4705-bf2c-8db8697062ae]  
[AGENT_DISABLELOGPLUGIN TESTFILEPUBLISHERPLUGIN] --> [true]
```

Release-1 > Release-2 > Prod-Deployment < In progress

Pipeline Tasks Variables Logs Tests Deploy Cancel Refresh Download all logs Edit ...

Deployment process
in progress

Run on agent
In progress

Run on agent
Pool: Hosted Windows 2019 with ... · Agent: Hosted Agent

Started: 20/5/2025, 12:32:23 pm
18s

Initialize job · succeeded 8s

Download artifact - _SauravSarkar-CodersArcade.MyWebApp-AzureDevOps - drop · succeeded 3s

Deploy Azure App Service 6s

```
Starting: Deploy Azure App Service
=====
Task      : Azure App Service deploy
Description : Deploy to Azure App Service a web, mobile, or API app using Docker, Java, .NET, .NET Core, Node.js, PHP, Python, or Ruby
Version   : 4.256.0
Author    : Microsoft Corporation
Help      : https://aka.ms/azureappservicetroubleshooting
=====
Got service connection details for Azure App Service:'ProdDemoCA' ←
```

This is the other Web App
ProdDemoCA in my case

Run on agent
Pool: Hosted Windows 2019 with ... · Agent: Hosted Agent

Started: 20/5/2025, 12:32:23 pm
1m 25s

Initialize job · succeeded 8s

Download artifact - _SauravSarkar-CodersArcade.MyWebApp-AzureDevOps - drop · succeeded 3s

Deploy Azure App Service 1m 13s

```
Starting: Deploy Azure App Service
=====
Task      : Azure App Service deploy
Description : Deploy to Azure App Service a web, mobile, or API app using Docker, Java, .NET, .NET Core, Node.js, PHP, Python, or Ruby
Version   : 4.256.0
Author    : Microsoft Corporation
Help      : https://aka.ms/azureappservicetroubleshooting
=====
Got service connection details for Azure App Service:'ProdDemoCA'
Package deployment using WAR Deploy initiated.
Deploy logs can be viewed at https://proddemoca-dhepf6etf3fthzh9.scm.canadacentral-01.azurewebsites.net/api/deployments/0ba597dd-eb81-4800-af46-25df23902036/log
Successfully deployed web package to App Service.
```

Wait for the App Service URL

Deploy Azure App Service

Previous task | Next task | X

```
1 2025-05-20T07:02:35.2924447Z ##[section]Starting: Deploy Azure App Service
2 2025-05-20T07:02:35.2937564Z =====
3 2025-05-20T07:02:35.2937900Z Task : Azure App Service deploy
4 2025-05-20T07:02:35.2937996Z Description : Deploy to Azure App Service a web, mobile, or API app using Docker, Java, .NET, .NET Core
5 2025-05-20T07:02:35.2938147Z Version : 4.256.0
6 2025-05-20T07:02:35.2938291Z Author : Microsoft Corporation
7 2025-05-20T07:02:35.2938410Z Help : https://aka.ms/azureappservicetroubleshooting
8 2025-05-20T07:02:35.2938502Z =====
9 2025-05-20T07:02:36.2762839Z Got service connection details for Azure App Service:'ProdDemoCA'
10 2025-05-20T07:02:45.3339156Z Package deployment using WAR Deploy initiated.
11 2025-05-20T07:03:42.6465327Z Deploy logs can be viewed at https://proddemoca-dhepf6etf3fthzh9.scm.canadacentral-01.azurewebsites.net/
12 2025-05-20T07:03:42.6466457Z Successfully deployed web package to App Service.
13 2025-05-20T07:04:24.0481005Z Successfully updated App Service configuration details
14 2025-05-20T07:04:27.6875235Z Successfully added release annotation to the Application Insight : ProdDemoCA
15 2025-05-20T07:04:31.4998946Z Successfully updated deployment History at https://proddemoca-dhepf6etf3fthzh9.scm.canadacentral-01.azurewebsites.net
16 2025-05-20T07:04:32.4409141Z App Service Application URL: https://proddemoca-dhepf6etf3fthzh9.canadacentral-01.azurewebsites.net
17 2025-05-20T07:04:33.8404749Z ##[section]Finishing: Deploy Azure App Service
```

This is our App Service Application URL
You can see this time it's **proddemoca**

Copy this URL -> In Any Browser

Up arrow icon

```
2025-05-20T07:04:27.6875235Z Successfully added release annotation to the Application Insight : ProdDemoCA
2025-05-20T07:04:31.4998946Z Successfully updated deployment History at https://proddemoca-dhepf6etf3fthzh9.scm.canadacentral-01.azurewebsites.net
2025-05-20T07:04:32.4409141Z App Service Application URL: https://proddemoca-dhepf6etf3fthzh9.canadacentral-01.azurewebsites.net
2025-05-20T07:04:33.8404749Z ##[section]Finishing: Deploy Azure App Service
```

Up arrow icon

□ ← → C G https://proddemoca-dhepf6etf3fthzh9.canadacentral-01.azurewebsites.net/MyWebApp/ ↵ /MyWebApp after the URL →

□ ← → C G prodemoca-dhepf6etf3fthzh9.canadacentral-01.azurewebsites.net/MyWebApp/ ↵

The App Service Application URL should display the Web Application "index.jsp" from the Eclipse Project

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↑ Release-1 > Release-2 > Prod-Deployment ✓ Succeeded ← Complete CI-CD Pipeline Has Succeeded

Pipeline Tasks Variables Logs Tests Deploy Cancel Refresh Download all logs Edit ...

Deployment process
Succeeded

Run on agent
Succeeded

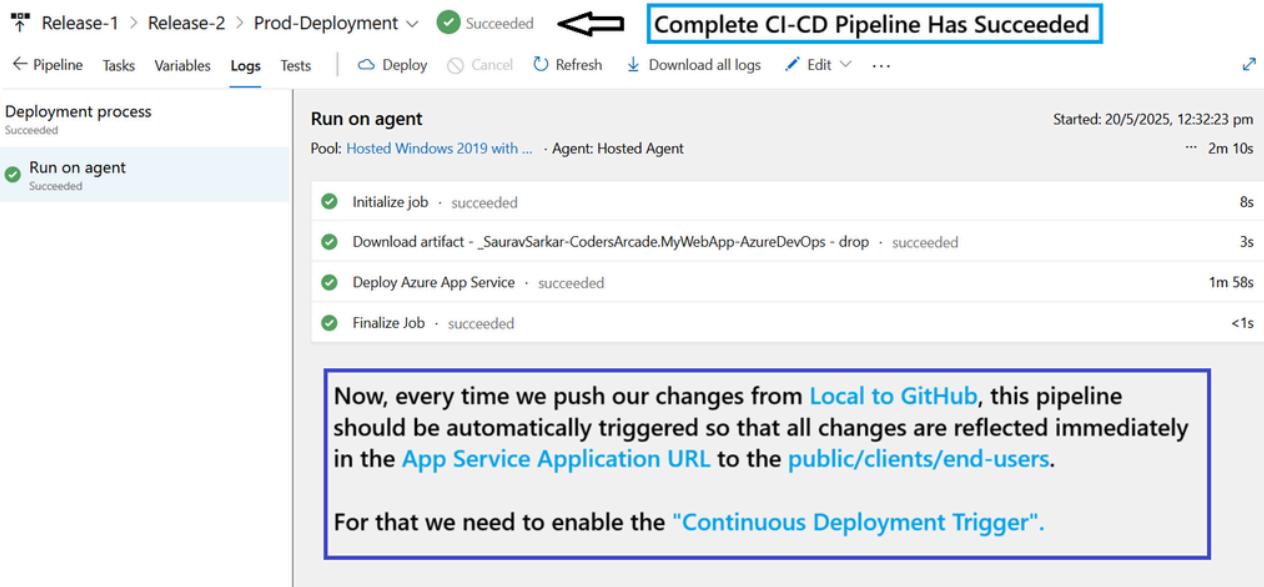
Run on agent

Started: 20/5/2025, 12:32:23 pm
... 2m 10s

Initialize job · succeeded 8s
Download artifact - _SauravSarkar-CodersArcade.MyWebApp-AzureDevOps - drop · succeeded 3s
Deploy Azure App Service · succeeded 1m 58s
Finalize Job · succeeded <1s

Now, every time we push our changes from Local to GitHub, this pipeline should be automatically triggered so that all changes are reflected immediately in the App Service Application URL to the public/clients/end-users.

For that we need to enable the "Continuous Deployment Trigger".



↑ Release-1 > Release-2

Pipeline Variables History Deploy Cancel Refresh Edit ...

This was manual

Release

Manually triggered by Nandini Sarkar 20/5/2025, 12:30 pm

Artifacts

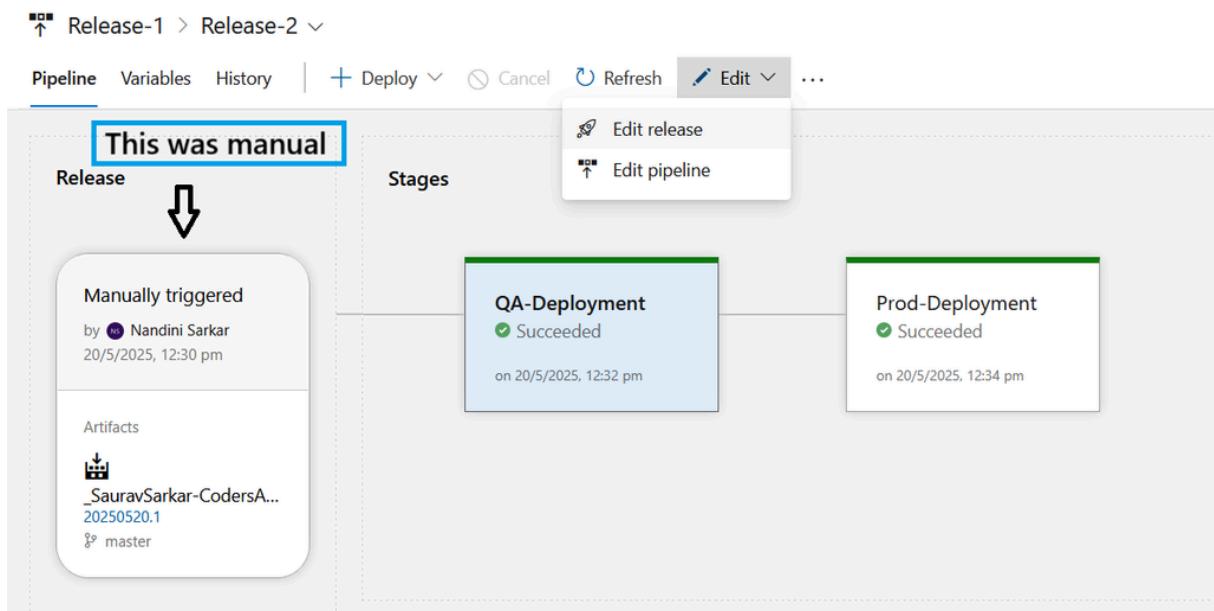
_SauravSarkar-CodersA... 20250520.1 master

Stages

QA-Deployment ✓ Succeeded on 20/5/2025, 12:32 pm

Prod-Deployment ✓ Succeeded on 20/5/2025, 12:34 pm

Edit release
Edit pipeline



Search all pipelines

+ New

Name

All pipelines

Release-1

All pipelines

Releases

Release-2 20250520.1 master

Release-1 20250520.1 master

Release pipeline

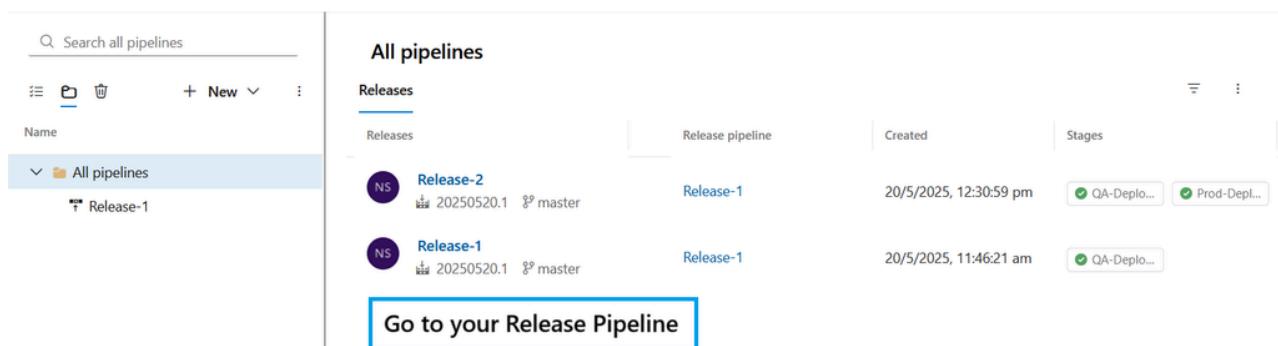
Created

Stages

QA-Deplo... Prod-Deplo...

QA-Deplo...

Go to your Release Pipeline



Release-1 > Release-2

Pipeline Variables History + Deploy Cancel Refresh Edit ...

Release

Manually triggered by Nandini Sarkar 20/5/2025, 12:30 pm

Artifacts

SauravSarkar-CodersA... 20250520.1 master

Stages

QA-Deployment Succeeded on 20/5/2025, 12:32 pm

Prod-Deployment Succeeded on 20/5/2025, 12:34 pm

Edit release Edit pipeline

Click Edit Pipeline

A screenshot of the Azure DevOps Release interface. At the top, it shows a navigation path: Release-1 > Release-2. Below this is a toolbar with Pipeline, Variables, History, Deploy, Refresh, Edit, and more. The main area is divided into Release and Stages sections. The Release section shows a manually triggered release by Nandini Sarkar on 20/5/2025 at 12:30 pm. The Stages section contains two stages: QA-Deployment and Prod-Deployment, both of which have succeeded. In the top right corner of the Stages section, there is a callout box with arrows pointing to the 'Edit release' and 'Edit pipeline' options in the top right corner of the interface.

T TestProject +

Overview Boards Repos Pipelines Pipelines Environments Releases ←

Library Or Click Here Task groups Deployment groups Test Plans Artifacts

A screenshot of the Azure DevOps sidebar menu. The menu items include Overview, Boards, Repos, Pipelines, Pipelines, Environments, Releases (which is highlighted with a blue background), Library, Task groups, Deployment groups, Test Plans, and Artifacts. A callout box with an arrow points to the 'Releases' option.

Q Search all pipelines

+ New

Release-1 Prod-Deployment

Release-1

Release-2 20250520.1 master 20/5/2025, 12:30:59 pm QA-Deplo... Prod-Deplo...

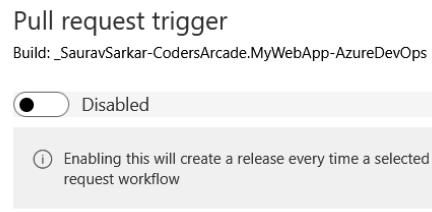
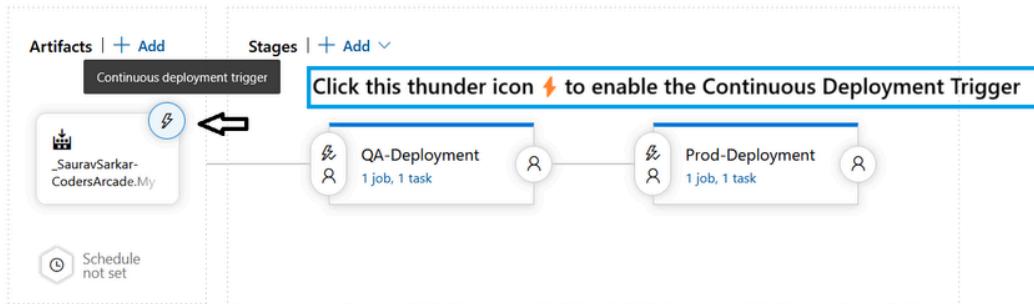
Release-1 20250520.1 master 20/5/2025, 11:46:21 am QA-Deplo...

Click Edit → Edit Create release

All releases

This was successful

A screenshot of the Azure DevOps Pipelines interface. At the top, there is a search bar for pipelines and a '+ New' button. Below this, a list of releases is shown. The first release is 'Release-1' with status 'Prod-Deployment'. The second release is 'Release-2' with status '20250520.1 master' and a creation date of '20/5/2025, 12:30:59 pm'. The third release is 'Release-1' with status '20250520.1 master' and a creation date of '20/5/2025, 11:46:21 am'. To the right of the releases, there are buttons for 'Edit', 'Create release', and a dropdown for 'All releases'. A callout box with an arrow points to the 'Edit' button. Another callout box with an arrow points to the third release entry. A final callout box with an arrow points to the text 'This was successful'.

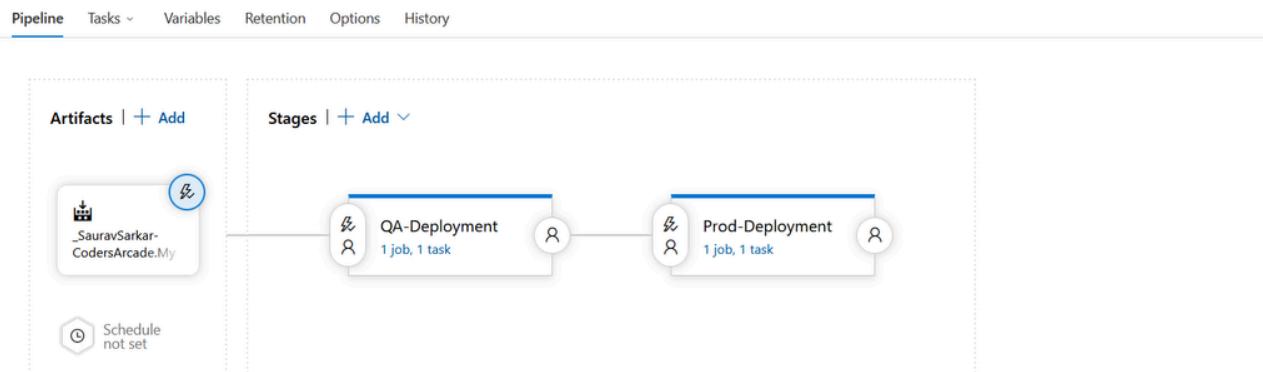


Build branch filters ⓘ

No filters added.

+ Add | ▾





This is the same Selenium-Java JUnit Test Project from Experiment 11

Paste the URL here in the :
driver.get("your_app_url_here");

Run the test & validate the title.

The screenshot shows the IntelliJ IDEA interface. On the left is the project structure with "Automation-Azure-DevOps" selected. Inside, there's a "test" folder containing a "java" subfolder with a file named "BrowserTest". The code editor shows Java code using Selenium and JUnit. A callout box points to the line `driver.get("https://proddemoca-dhepf6etf3fthzh9.canadacentral-01.azurewebsites.net/MyWebApp/");` with the instruction "Paste the URL here in the : driver.get("your_app_url_here");". Another callout box at the bottom right says "Run the test & validate the title.".



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 </div>
 <footer>
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 </footer>
</div>

```

<body>

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            </div>
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        </footer>
    </div>

```

```

MINGW64:/d/Eclipse/eclipse-workspace/MyWebApp MINGW64:/d/Eclipse/eclipse-workspace/MyWebApp (master)
$ git status
On branch master
Your branch is up to date with 'origin/master'.

Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
    modified:   target/m2e-wtp/web-resources/META-INF/maven/com.codersarcade/MyWebApp/pom.properties

Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git restore <file>..." to discard changes in working directory)
    modified:   src/main/webapp/index.jsp ←
    modified:   target/m2e-wtp/web-resources/META-INF/maven/com.codersarcade/MyWebApp/pom.properties

Saurav@Saurav MINGW64 /d/Eclipse/eclipse-workspace/MyWebApp (master) See the modifications. Add them
$ 

```

```

MINGW64:/d/Eclipse/eclipse-workspace/MyWebApp MINGW64:/d/Eclipse/eclipse-workspace/MyWebApp (master)
$ git add .
warning: in the working copy of 'src/main/webapp/index.jsp', LF will be replaced by CRLF the next time Git touches it

Saurav@Saurav MINGW64 /d/Eclipse/eclipse-workspace/MyWebApp (master)
$ git commit -m "Latest Commit- Changed the index.jsp file for validation in deployment- Continuous Trigger"
[master c043bc2] Latest Commit- Changed the index.jsp file for validation in deployment- Continuous Trigger ←
 2 files changed, 2 insertions(+), 2 deletions(-)

Saurav@Saurav MINGW64 /d/Eclipse/eclipse-workspace/MyWebApp (master) Observe the commit message
$ git push ←
Enumerating objects: 27, done.
Counting objects: 100% (27/27), done.
Delta compression using up to 16 threads
Compressing objects: 100% (8/8), done.
Writing objects: 100% (14/14), 1.00 KiB | 1.00 MiB/s, done.
Total 14 (delta 4), reused 0 (delta 0), pack-reused 0
remote: Resolving deltas: 100% (4/4), completed with 4 local objects.

Commit your changes & push to GitHub ↑

```

Pipelines

Recent All Runs Back in your Build Pipeline you will see a Job queued.

Recently run pipelines

Pipeline	Last run	
SauravSarkar-CodersArcade.MyWebApp...	#20250520.2 • Latest Commit- Changed the index.jsp file for validation in deployment- Conti...	⌚ Just now ← Now

← SauravSarkar-CodersArcade.MyWebApp-AzureDevOps

Runs Branches Analytics

Description	Stages
#20250520.2 • Latest Commit- Changed the index.jsp file for validation in ...	⌚ Just now ← This has started ←
⌚ Individual CI for 🌐 master ↴ c043bc20	⌚ 2h ago
#20250520.1 • Set up CI with Azure Pipelines	⌚ Manually triggered for 🌐 master ↴ f66e2d24 ↴ 27s

#20250520.2 • Latest Commit- Changed the index.jsp file for validation in deployment- Continuous Trigger

SauravSarkar-CodersArcade.MyWebApp-AzureDevOps

Summary Code Coverage

Individual CI by SauravSarkar-CodersArcade

Repository and version
SauravSarkar-CodersArcade/MyWebApp-AzureDevOps
master ↗ c043bc20

Time started and elapsed
Just now -

Related
0 work items
0 artifacts

Tests and coverage
Get started

Jobs

Name	Status	Duration
Job	Queued	Click ↙

View change

← Jobs in run #20250520.2

SauravSarkar-CodersArcade.MyWebApp-AzureDevOps

Jobs

Job

Job

1 Pool: Azure Pipelines
2 Image: ubuntu-latest
3 Queued: Just now [manage_parallel_jobs]
4
5 The agent request is not running because all potential agents are running other requests. Current position in queue: 1
6 ► Job preparation parameters

The Job with all tasks in build pipeline in Experiment 10 that we had created earlier to Copy war File & Publish Build Artifacts is under progress.

View the logs for errors.

Note: This is the Build Pipeline. This will complete first. Then the Release Pipeline will start automatically. This is because of the Continuous Deployment Trigger ⚡

← Jobs in run #20250520.2

SauravSarkar-CodersArcade.MyWebApp-AzureDevOps

Jobs

Job 22s

- Initialize job 3s
- Checkout SauravSarkar... 2s
- Maven 14s
- CopyFiles <1s
- PublishBuildArtifacts 1s
- Post-job: Checkout Sa... <1s
- Finalize Job <1s

Pool: Azure Pipelines
Image: ubuntu-latest
Queued: Today at 12:49 pm [manage_parallel_jobs]
Agent: Hosted Agent
Started: Just now
Duration: 22s

The agent request is already running or has already completed.
Job preparation parameters
1 artifact produced
Job live console data:
Starting: Job
Async Command Start: DetectDockerContainer
Async Command End: DetectDockerContainer
Async Command Start: DetectDockerContainer
Async Command End: DetectDockerContainer
Finishing: Job

You can see that the Build Pipeline has Succeeded ✓

Now go to Releases

Search all pipelines

Release-1 QA-Deployment

Release-1

Release-3 ←

Release-2

Release-1

Release-3

Release-2

Release-1

You can see a new Release named "Release-3" has started automatically. Click on the "Release-3" link to view the status and logs.

Release-1 > Release-3

Pipeline Variables History + Deploy Cancel Refresh Edit ...

Continuous deployment for Microsoft.VisualStudio... 20/5/2025, 12:51 pm

Artifacts _SauravSarkar-Co... 20250520.2 master

Stages

This time it is a Continuous Deployment Trigger.

QA-Deployment Succeeded on 20/5/2025, 12:53 pm

Prod-Deployment In progress Deploy Azure App Service 3/3 tasks 00:07

QA-Deployment Succeeded

Prod-Deployment Running

Release-1 > Release-3

Pipeline Variables History + Deploy Cancel Refresh Edit ...

Release

Continuous deployment for Microsoft.VisualStudio... 20/5/2025, 12:51 pm

Artifacts SauravSarkar-Co... 20250520.2 master

Stages

QA-Deployment ✓ Succeeded on 20/5/2025, 12:53 pm

Prod-Deployment ✓ Succeeded on 20/5/2025, 12:55 pm

Both the stages will succeed.

This screenshot shows the Azure DevOps Release interface. It displays a summary of the release, including a continuous deployment log and artifact details. The main focus is on the 'Stages' section, which shows two stages: 'QA-Deployment' and 'Prod-Deployment', both of which have succeeded. A prominent message box states 'Both the stages will succeed.'

Pipelines

Recent All Runs New pipeline Filter pipelines

This is a complete DevOps CI-CD Pipeline Automation with Complete Deployment Trigger Enabled.

Recently run pipelines

Pipeline	Last run
SauravSarkar-CodersArcade.MyWebApp...	#20250520.3 • Updated War File ⌚ Individual CI for 🚧 master

Change triggers a new Job in Pipeline Just now

This screenshot shows the Azure DevOps Pipelines interface. It highlights a recent pipeline run for 'SauravSarkar-CodersArcade.MyWebApp...' with the ID '#20250520.3'. A callout box points to the pipeline name with the text 'Change triggers a new Job in Pipeline' and 'Just now'. The interface also includes tabs for 'Recent', 'All', and 'Runs', along with a 'New pipeline' button and a 'Filter pipelines' search bar.

← SauravSarkar-CodersArcade.MyWebApp-AzureDevOps Edit Run pipeline

Runs Branches Analytics

Note: If the changes are not reflected, run mvn clean package, then push the changes.

Description	Stages	
#20250520.3 • Updated War File ⌚ Individual CI for 🚧 master ↴ d4a5bf8b	⌚ Latest Job Just now	
#20250520.2 • Latest Commit- Changed the index.jsp file for validation in ... ⌚ Individual CI for 🚧 master ↴ c043bc20	⌚ 10m ago ⌚ 29s	
#20250520.1 • Set up CI with Azure Pipelines ⌚ Manually triggered for 🚧 master ↴ f66e2d24	⌚ 2h ago ⌚ 27s	

This screenshot shows the Azure DevOps Pipeline Runs interface for the 'SauravSarkar-CodersArcade.MyWebApp-AzureDevOps' pipeline. It lists three runs: '#20250520.3', '#20250520.2', and '#20250520.1'. A callout box points to the first run with the text 'Note: If the changes are not reflected, run mvn clean package, then push the changes.' The interface includes tabs for 'Runs', 'Branches', and 'Analytics', along with edit and run pipeline buttons.

[← Jobs in run #20250520.3](#)

SauravSarkar-
CodersArcade.MyWebApp-
AzureDevOps

Jobs

Job	Duration
Initialize job	2s
Checkout SauravSarkar...	3s
Maven	21s
CopyFiles	<1s
PublishBuildArtifacts	<1s
Post-job: Checkout Sa...	<1s
Finalize Job	<1s

Job

```

1 Pool: Azure Pipelines
2 Image: ubuntu-latest
3 Queued: Today at 12:57 pm [manage_parallel_jobs]
4 Agent: Hosted Agent
5 Started: Just now
6 Duration: 29s
7
8 The agent request is already running or has already completed.
9 ▶ Job preparation parameters
44 └ 1 artifact produced
45 Job live console data:
46 Starting: Job
47 Async Command Start: DetectDockerContainer
48 Async Command End: DetectDockerContainer
49 Async Command Start: DetectDockerContainer
50 Async Command End: DetectDockerContainer
51 Finishing: Job

```

[View Logs](#)

Search all pipelines

Release-1 Prod-Deployment

New Release "Release-4" started.

Release-1

Releases Deployments Analytics

All releases

Releases	Created	Stages
Release-4 20250520.3	20/5/2025, 1:00:25 pm	QA-Deploy... Prod-Depl...
Release-3 20250520.2	20/5/2025, 12:51:58 pm	QA-Deploy... Prod-Depl...
Release-2 20250520.1	20/5/2025, 12:30:59 pm	QA-Deploy... Prod-Depl...
Release-1 20250520.0	20/5/2025, 11:46:21 am	QA-Deploy...

Release-1 > Release-4

Pipeline Variables History + Deploy Cancel Refresh Edit ...

Release

Continuous deployment for Microsoft.VisualStudio... 20/5/2025, 1:00 pm

Artifacts

SauravSarkar-Co... 20250520.3 master

Stages

QA-Deployment In progress Deploy Azure App Service 3/3 tasks 00:07

Prod-Deployment Not deployed

All stages will run and complete successfully.

Release-1 > Release-4

Pipeline Variables History + Deploy Cancel Refresh Edit ...

Release

Continuous deployment for Microsoft.VisualStudio... 20/5/2025, 1:00 pm

Artifacts _SauravSarkar-Co... 20250520.3 master

Stages

QA-Deployment Succeeded on 20/5/2025, 1:02 pm

Prod-Deployment Succeeded on 20/5/2025, 1:04 pm

This completes your complete DevOps CI-CD Pipeline in DevOps VTU Lab Experiment 12.

Important After completion of the experiment, please validate the URLs, the changes, and make sure to shut down the Azure App Service Web Apps. Or else, you will incur charges after your free credits have expired.

3. Now go to portal.azure.com/#home and stop the two Web Apps as shown below.

4. This is mandatory because otherwise you will incur charges after the free credits have expired [Important]

Home > DemoCA Web App

Search Overview

Activity log Access control (IAM) Tags Diagnose and solve problems Microsoft Defender for Cloud Events (preview) Recommended services (preview) Resource visualizer Deployment Settings Performance App Service plan Development Tools API Monitoring Automation Support + troubleshooting

Consider using Azure Front Door since your app receives incoming requests from multiple regions.

Essentials

Resource group (move)	: DevOps-Training	Default domain	: democa-f2fpgbxcpgnhzed.canadacentral-01.azurewebsites.net
Status	: Running	App Service Plan	: ASP-DevOpsTraining-9417 (B1: 1)
Location (move)	: Canada Central	Operating System	: Linux
Subscription (move)	: Azure subscription 1	Health Check	: Not Configured
Subscription ID	: fc30e602-810b-4838-8ac7-2dfbe9713ad8		
Tags (edit)	: Add tags		

Properties Monitoring Logs Capabilities Notifications (1) Recommendations

Web app

Name	DemoCA	Deployment Center	Deployment logs
Publishing model	Code	Last deployment	Loading deployments...
Runtime Stack	Java 17 Tomcat	Deployment provider	VSTSRM

Domains

Default domain	democa-f2fpgbxcpgnhzed.canadacentral-01.azurewebsites.net	Application Insights		
Custom domain	Add custom domain			Name: DemoCA Region: Canada Central
		Name: DemoCA Region: Canada Central		

Successfully stopped web app Verify

Successfully stopped web app DemoCA

Home >

ProdDemoCA Web App

Stop

Consider using Azure Front Door since your app receives incoming requests from multiple regions.

Overview

Activity log, Access control (IAM), Tags, Diagnose and solve problems, Microsoft Defender for Cloud, Events (preview), Recommended services (preview), Resource visualizer.

Resource group (move) : DevOps-Training, Status: Running, Location (move) : Canada Central, Subscription (move) : Azure subscription 1, Subscription ID : fc30e602-810b-4838-8ac7-2dfbe9713ad8, Tags (edit) : Add tags.

Default domain : proddemoca-dhepf6et3fhzh9.canadacentral-01.azurewebsites.net, App Service Plan : ASP-DevOpsTraining-9417 (B1: 1), Operating System : Linux, Health Check : Not Configured.

Properties Monitoring, Logs, Capabilities, Notifications (1), Recommendations.

Web app Name: ProdDemoCA, Publishing model: Code, Runtime Stack: Java 17 Tomcat.

Deployment Center Deployment logs, Last deployment, Deployment provider: VSTS RM.

Domains Default domain: proddemoca-dhepf6et3fhzh9.canadacentral-01.azurewebsites.net, Custom domain: Add custom domain.

Application Insights Name: ProdDemoCA, Region: Canada Central.

Add or remove favorites by pressing Ctrl+Shift+F.

Verify Successfully stopped web app ProdDemoCA

democa-f2fpbgxcpgnhzed.canadacentral-01.azurewebsites.net/MyWebApp/ Verify

Your App Service Application URL should be in this state after shutting down the **demoCA** Web App

Error 403 - This web app is stopped.

The web app you have attempted to reach is currently stopped and does not accept any requests. Please try to reload the page or visit it again soon.

If you are the web app administrator, please find the common 403 error scenarios and resolution [here](#). For further troubleshooting tools and recommendations, please visit [Azure Portal](#).

prodDemoCA-dhepf6etf3fthh9.canadacentral-01.azurewebsites.net/MyWebApp/  Verify

Your App Service Application URL should be in this state after shutting down the **ProdDemoCA** Web App

Error 403 - This web app is stopped.

The web app you have attempted to reach is currently stopped and does not accept any requests. Please try to reload the page or visit it again soon.

If you are the web app administrator, please find the common 403 error scenarios and resolution [here](#). For further troubleshooting tools and recommendations, please visit [Azure Portal](#).

Final Summary – Experiment 12: Full CI/CD Pipeline with Azure DevOps (Production Deployment)

-  Completed the **CI/CD pipeline** by configuring a **Release Pipeline** for deploying the final `.war` file to the **Production Server** (`prodDemoCA` Web App on Azure).
-  Used the same `.war` artifact generated in the Build Pipeline (Experiment 10), now pushed to **Production** via a separate **release stage**.
-  Deployed to the **prodDemoCA Azure App Service**, simulating a real-world Production environment.
-  Copied the generated **App Service URL** and updated it inside the `driver.get("your_app_service_url");` method in the automation script.
-  Reused the existing `BrowserTest.java` file and ran it with **JUnit** to perform a **simple title validation** — confirming successful deployment.
-  Enabled the **Continuous Deployment Trigger** () so that every time you push code to GitHub, it:
 -  Triggers the Build Pipeline
 -  Publishes artifacts
 -  Automatically starts a new **Release** (e.g., Release-4 after Release-3)
 -  Deploys to the Production Server
 -  Completes the automation test
-  Validated how any code change (once pushed) triggers the **full CI/CD cycle** from build → release → deployment → test without manual intervention.
-  Final reminder: Ensure the **Azure Web Apps (demoCA and prodDemoCA)** are started before releases get triggered, otherwise deployment will fail.

This wraps up the **complete DevOps CI/CD journey** across Experiments 10, 11, and 12 — from code build to production deployment with automation testing, all powered by Azure DevOps. 🚀💻⟳
