**CLOUD COMPUTING LAB**



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**Roll No: BSE-2023-074**

**Section: V-B**

***LAB 10***

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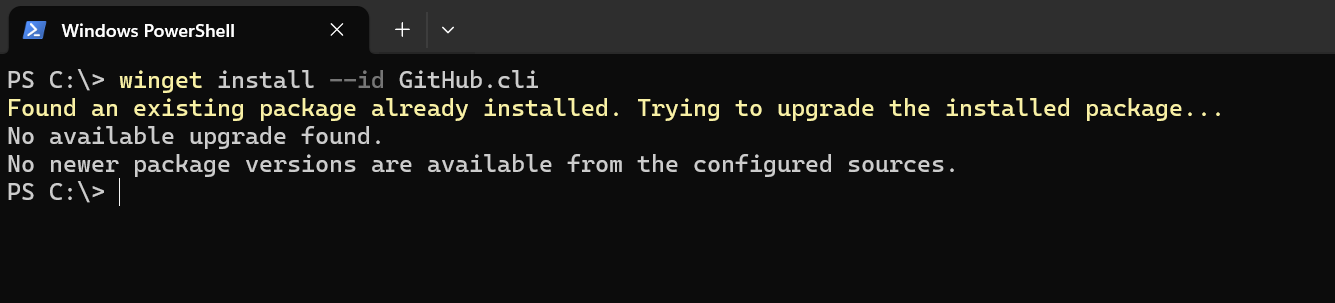
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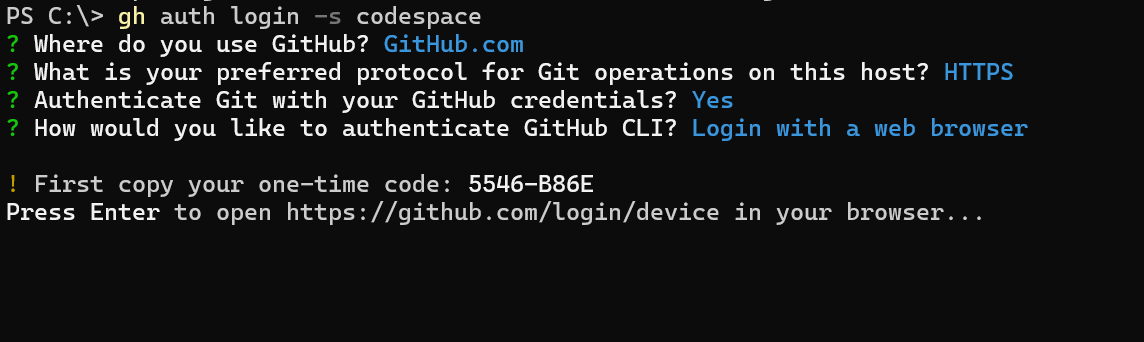
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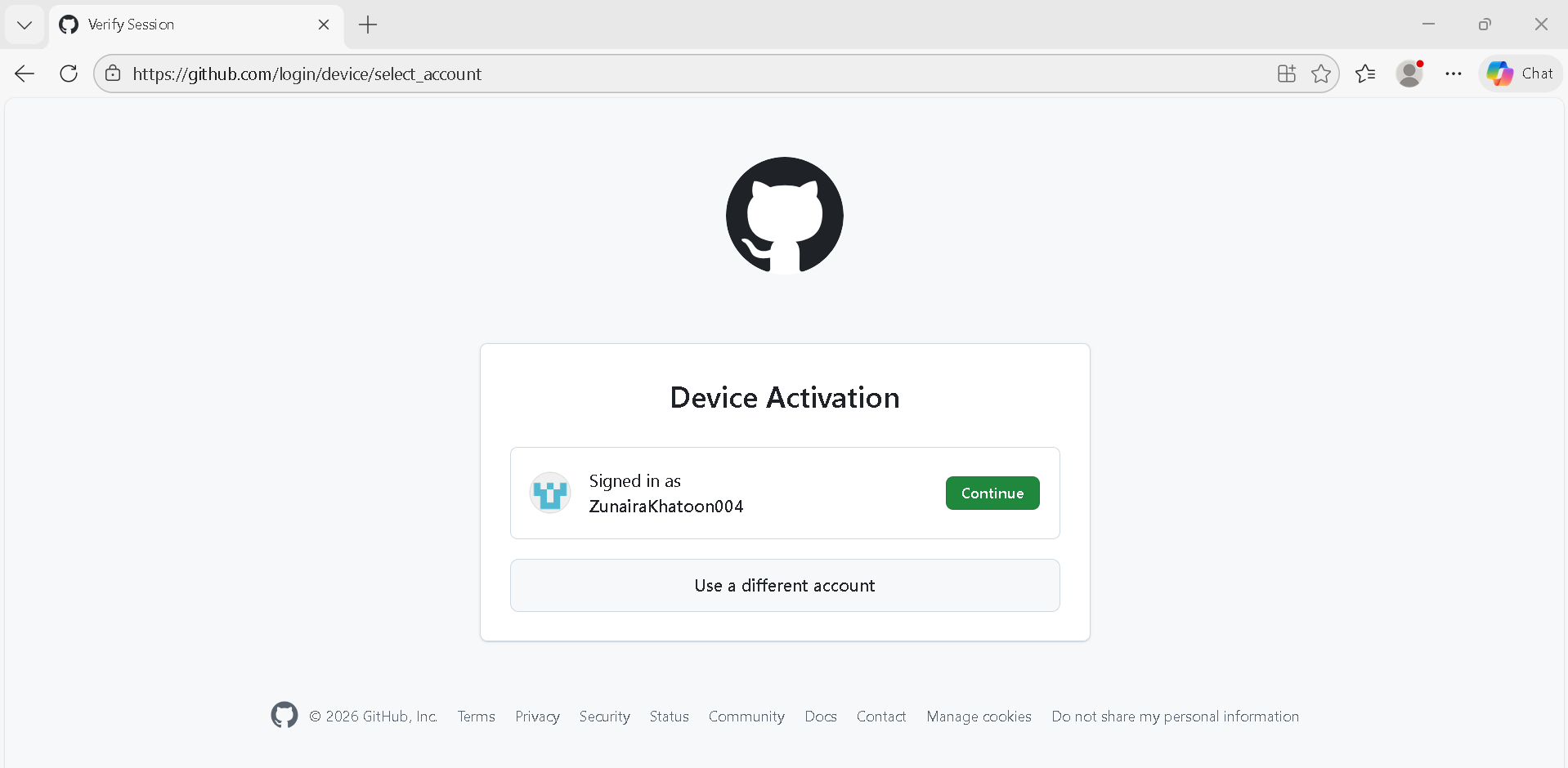
# [**Task 1: GH CLI installation, authentication, Codespaces (in Codespace)**](https://github.com/WaqasSaleem97/CC_F25/tree/main/Lab_Tasks/Lab_10#task-1--github-cli-codespace-setup-authentication)

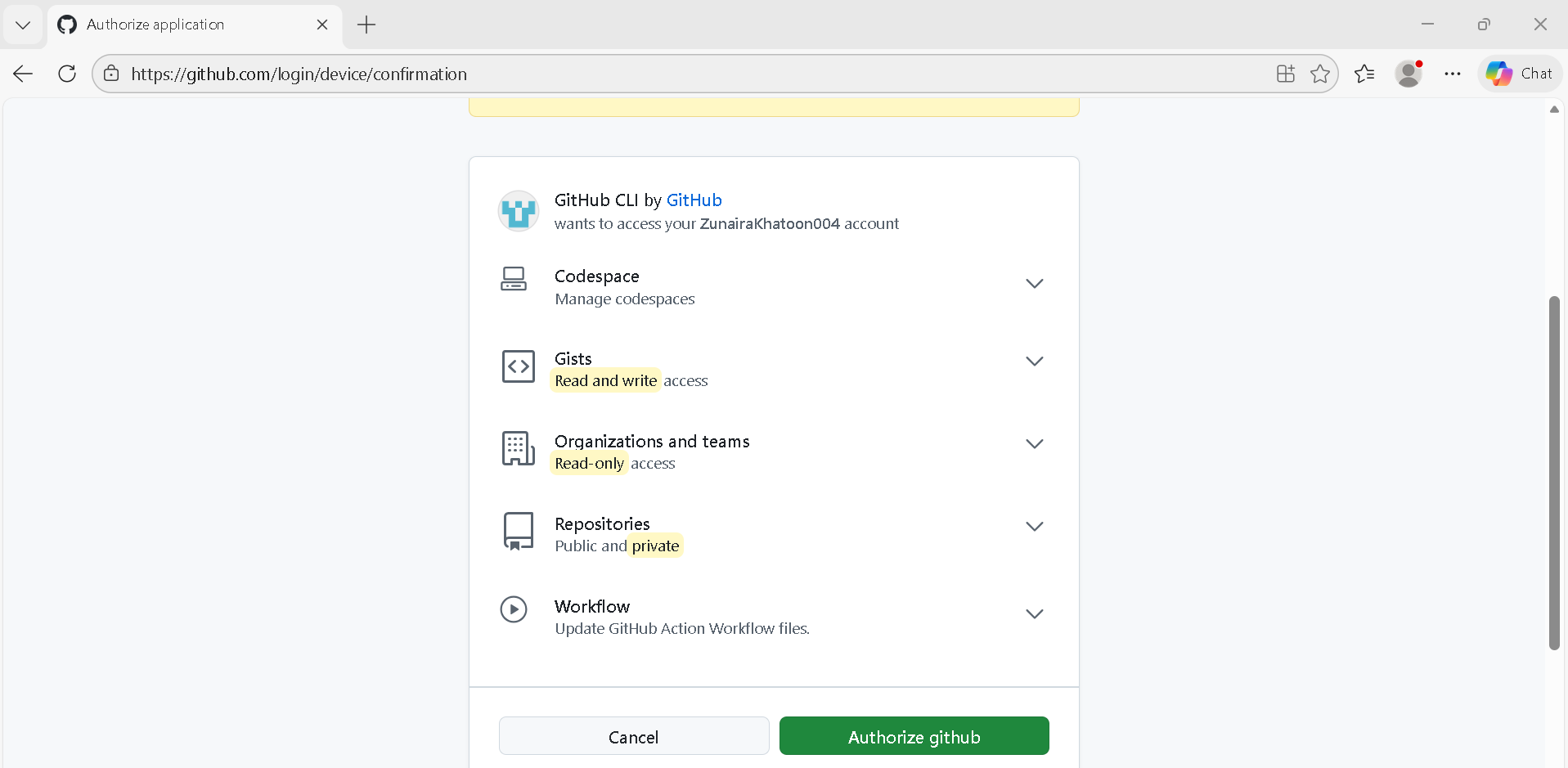
1. Install GitHub CLI:

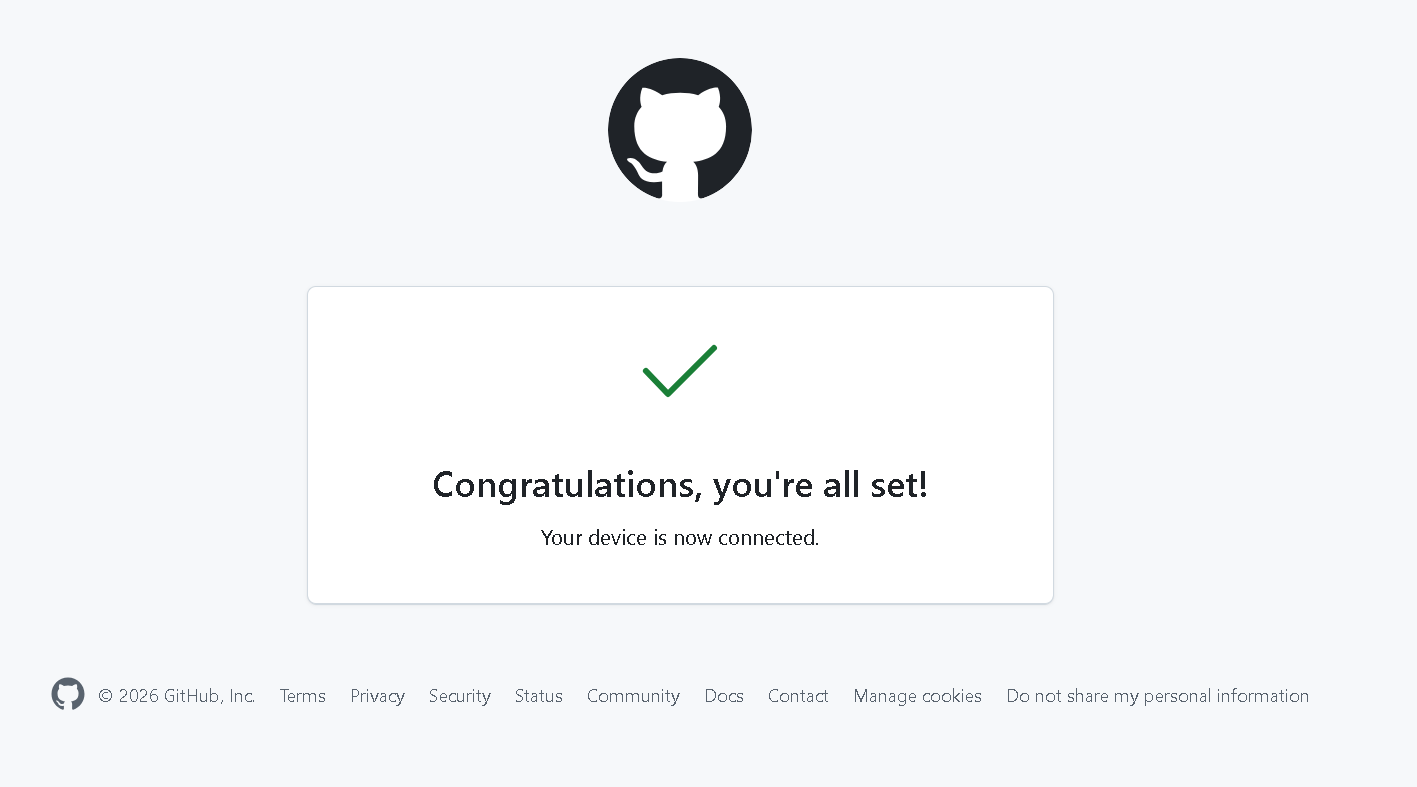


1. Authenticate GH CLI for Codespaces:

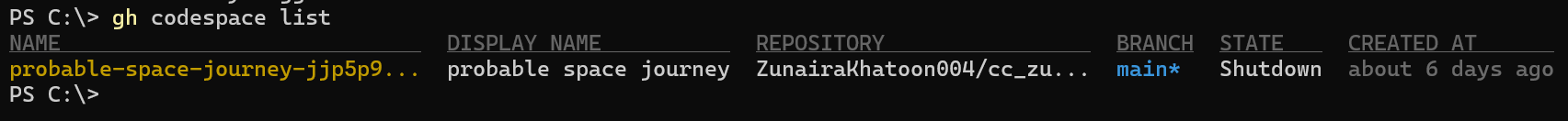




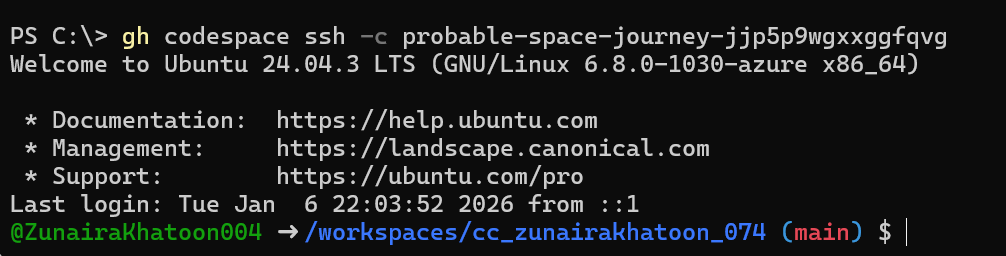




1. List available codespaces:



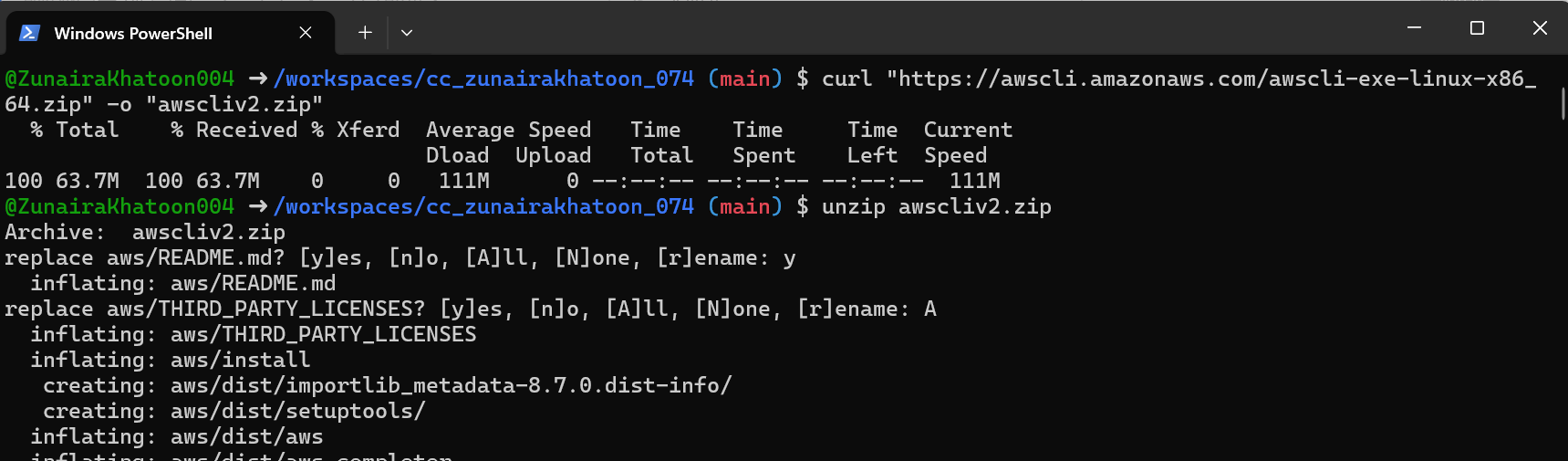
1. Connect to a codespace via SSH:

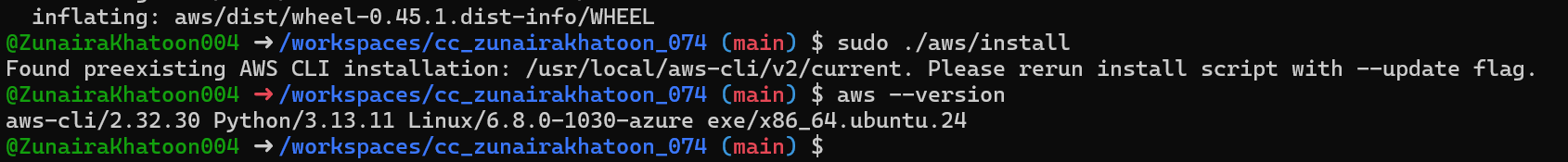


# [**Task 2: AWS CLI install/configure, Terraform install & verify, create main.tf provider block**](https://github.com/WaqasSaleem97/CC_F25/tree/main/Lab_Tasks/Lab_10#task-2--install-aws-cli-terraform-cli-provider-setup)

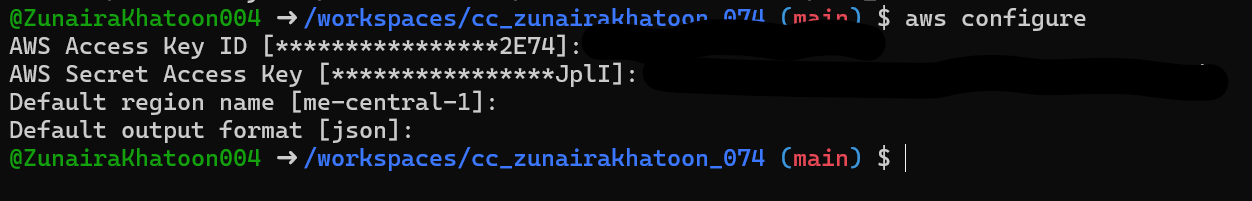
## A. Install AWS CLI (Skip if already installed)

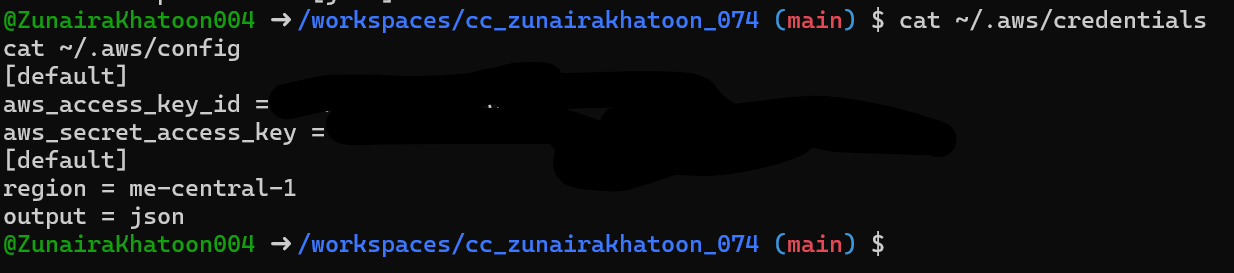
1. In Codespace shell, install AWS CLI:



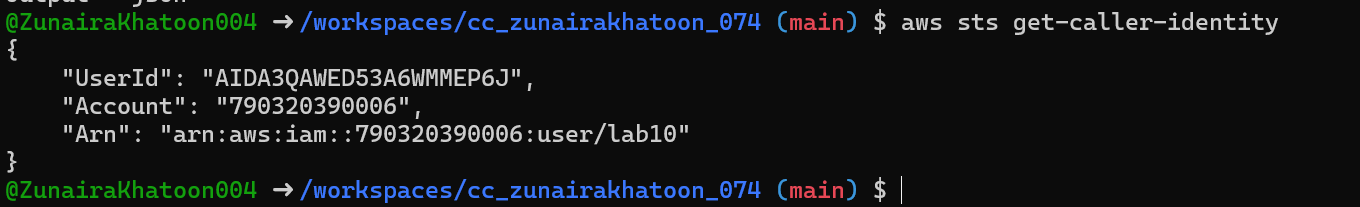


1. Configure AWS CLI:





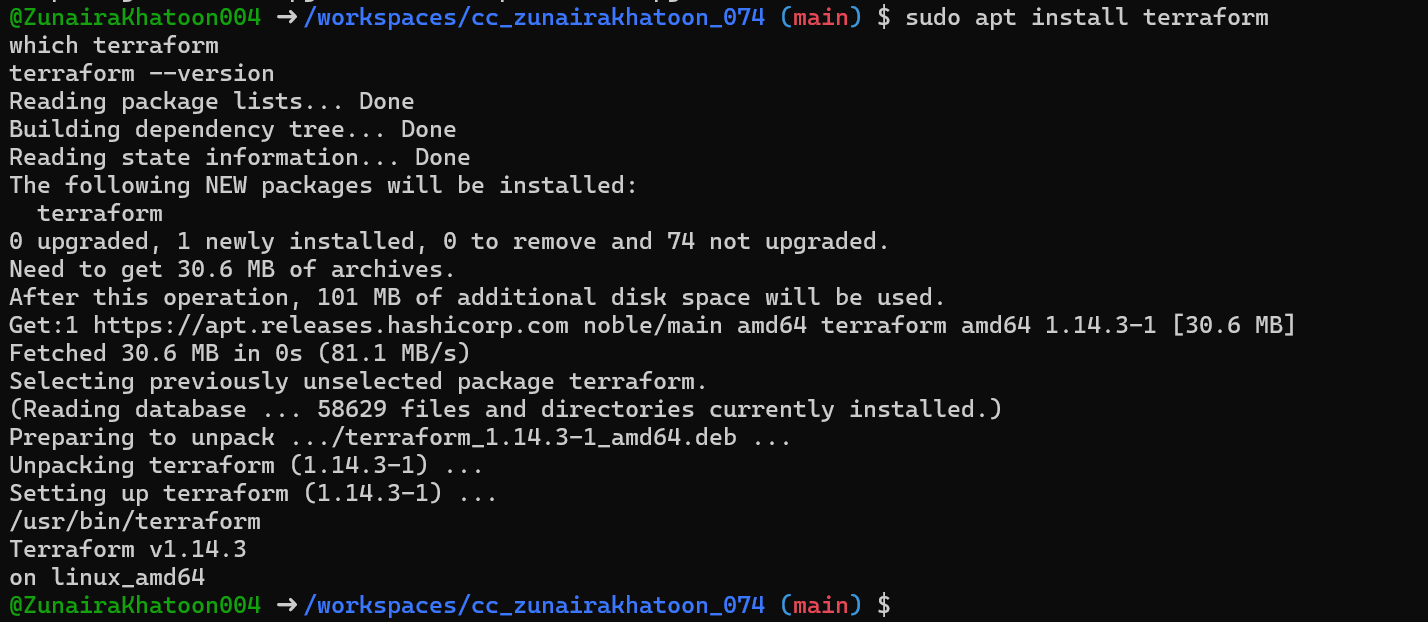
1. Verify AWS CLI connectivity:



## B. Install Terraform CLI

1. Install Terraform CLI:



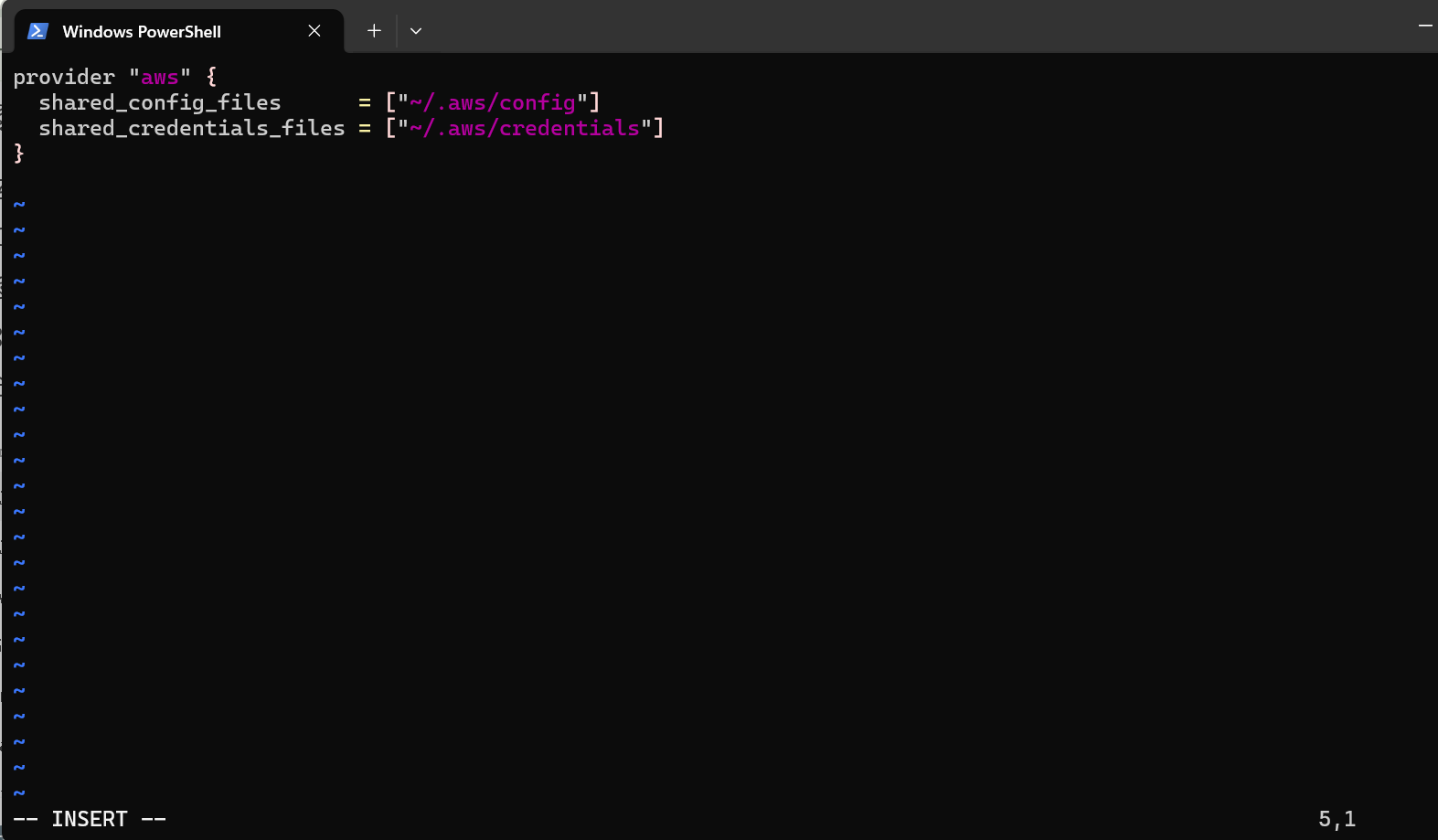


## C. Provider Configuration (main.tf)

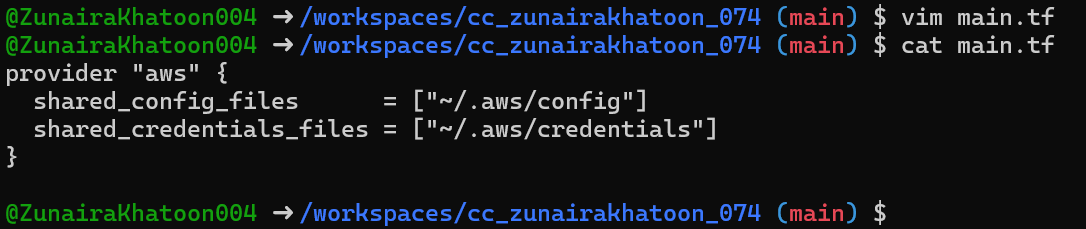
* Create main.tf using Vim:



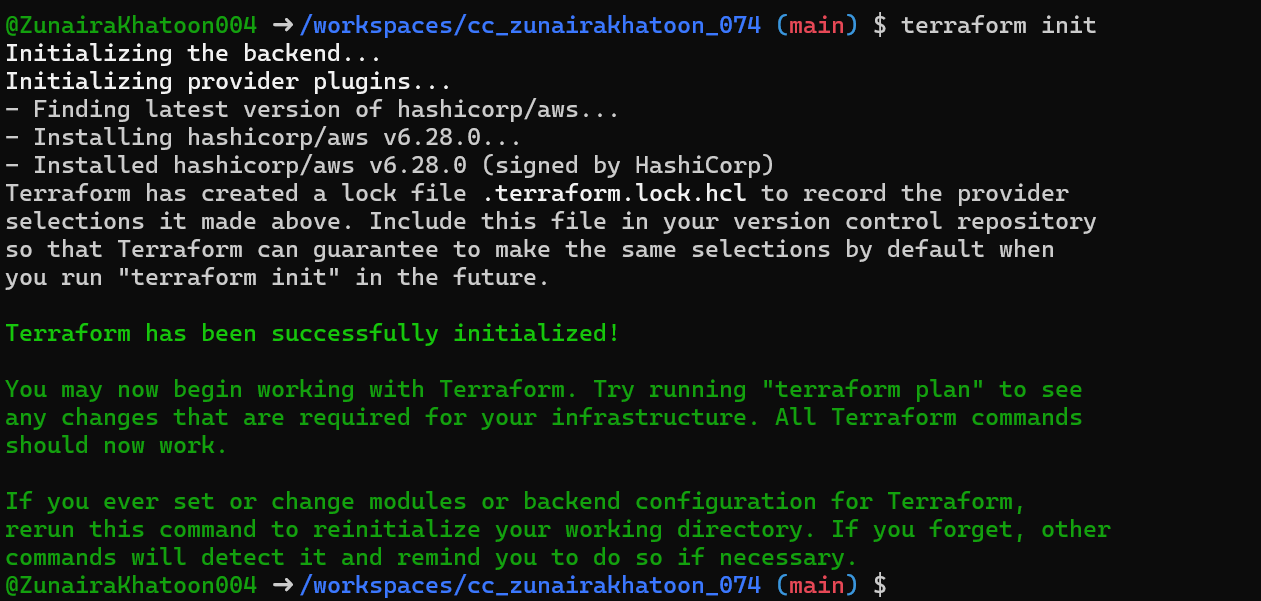
* Inside main.tf, write:



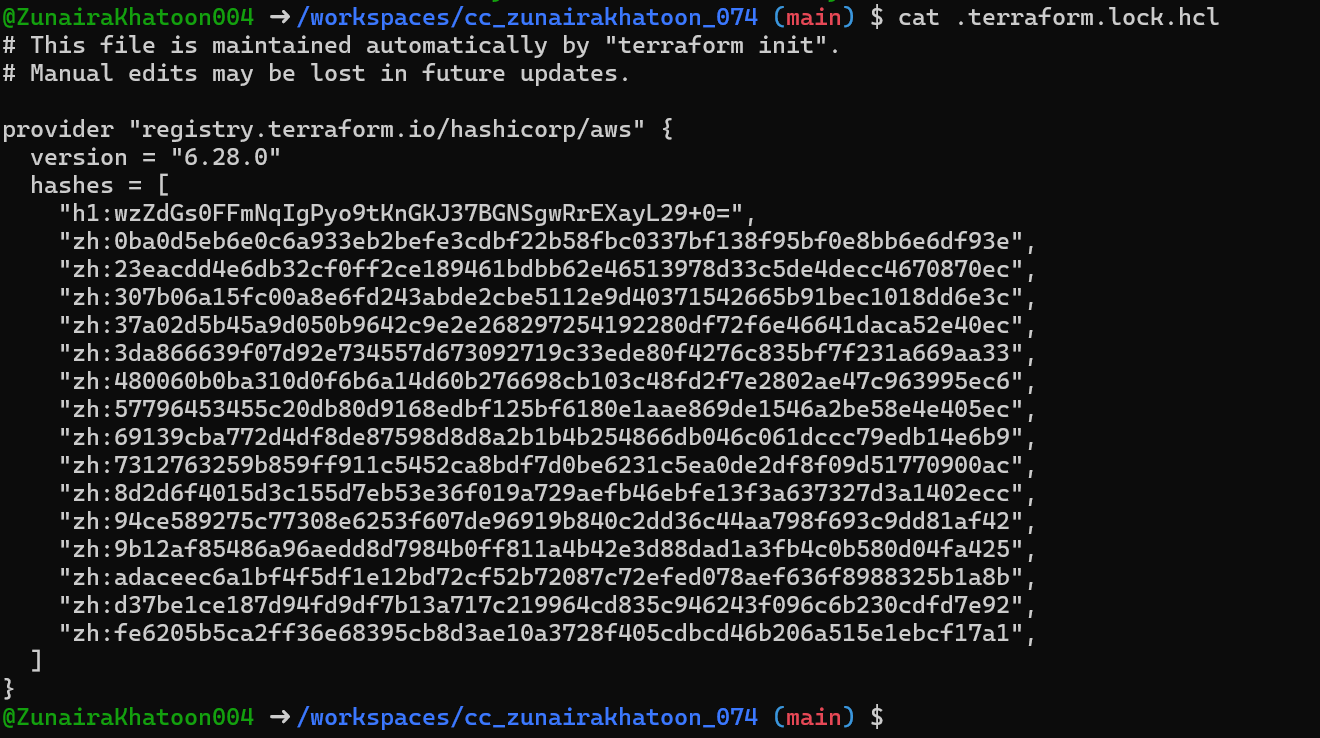
* Save and quit:



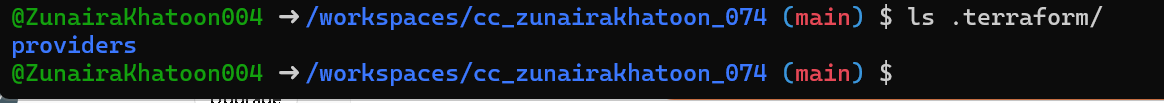
* Initialize Terraform:



* Show contents of .terraform.lock.hcl:

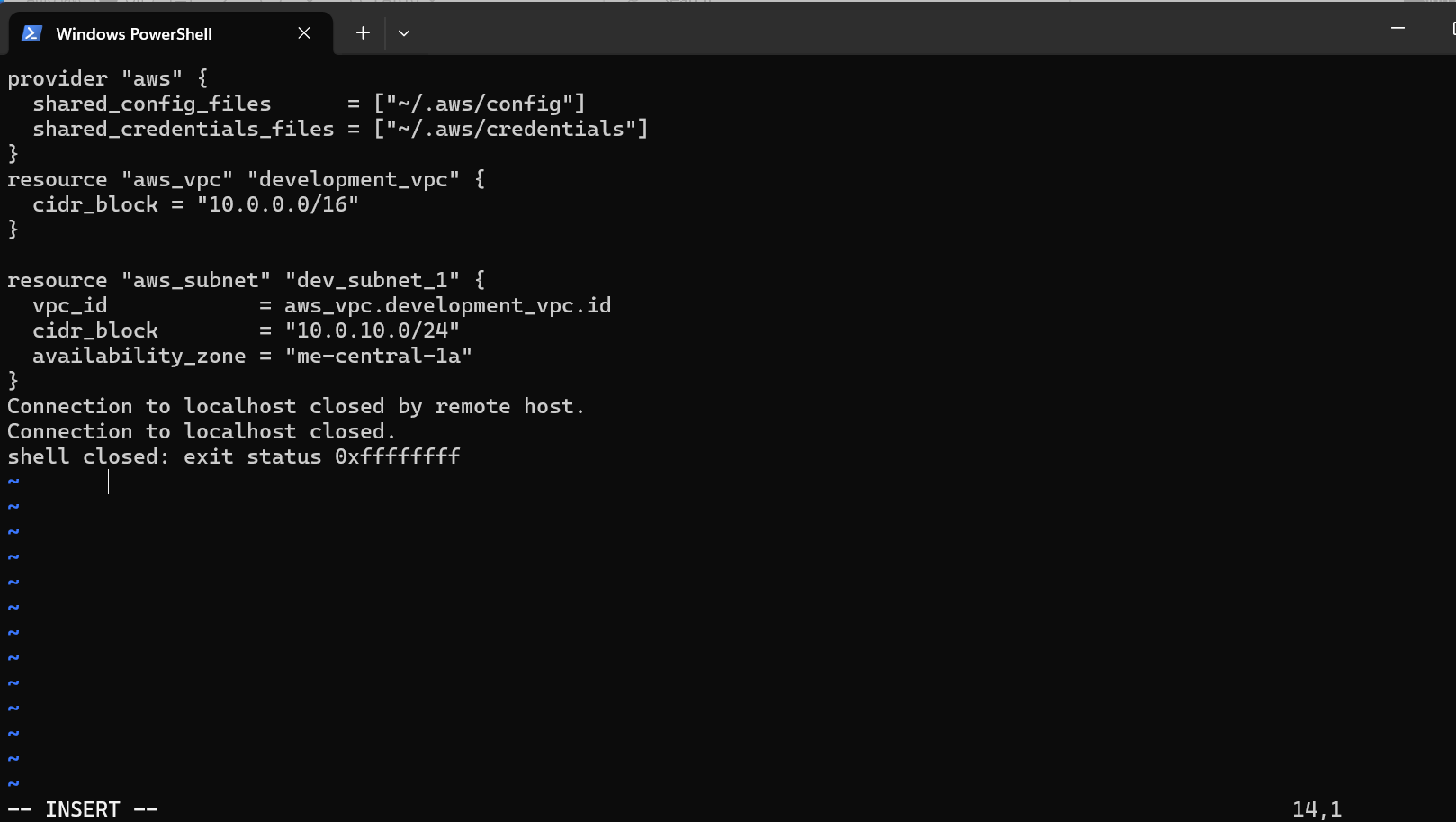


* Show contents of .terraform/ directory:

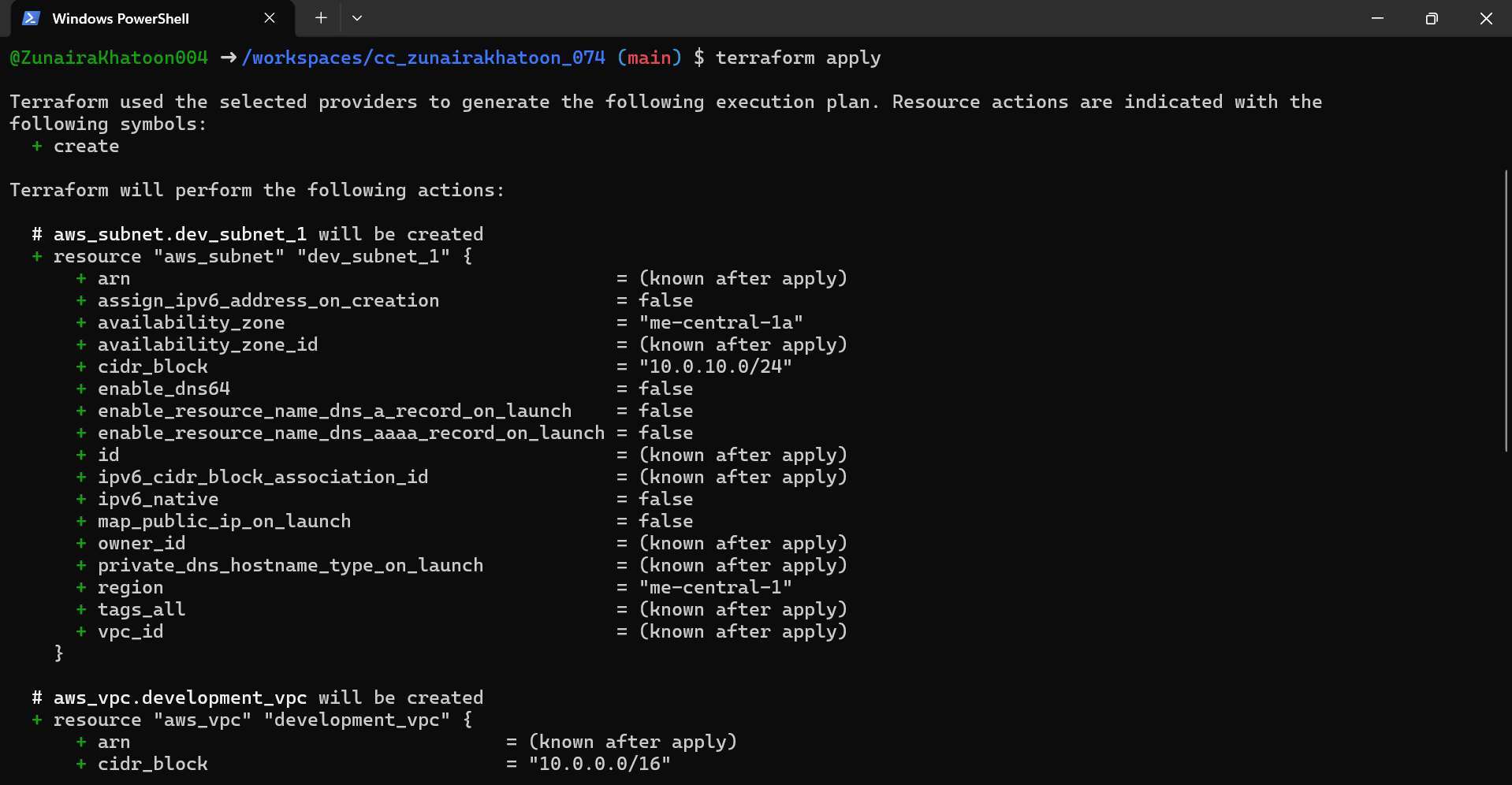


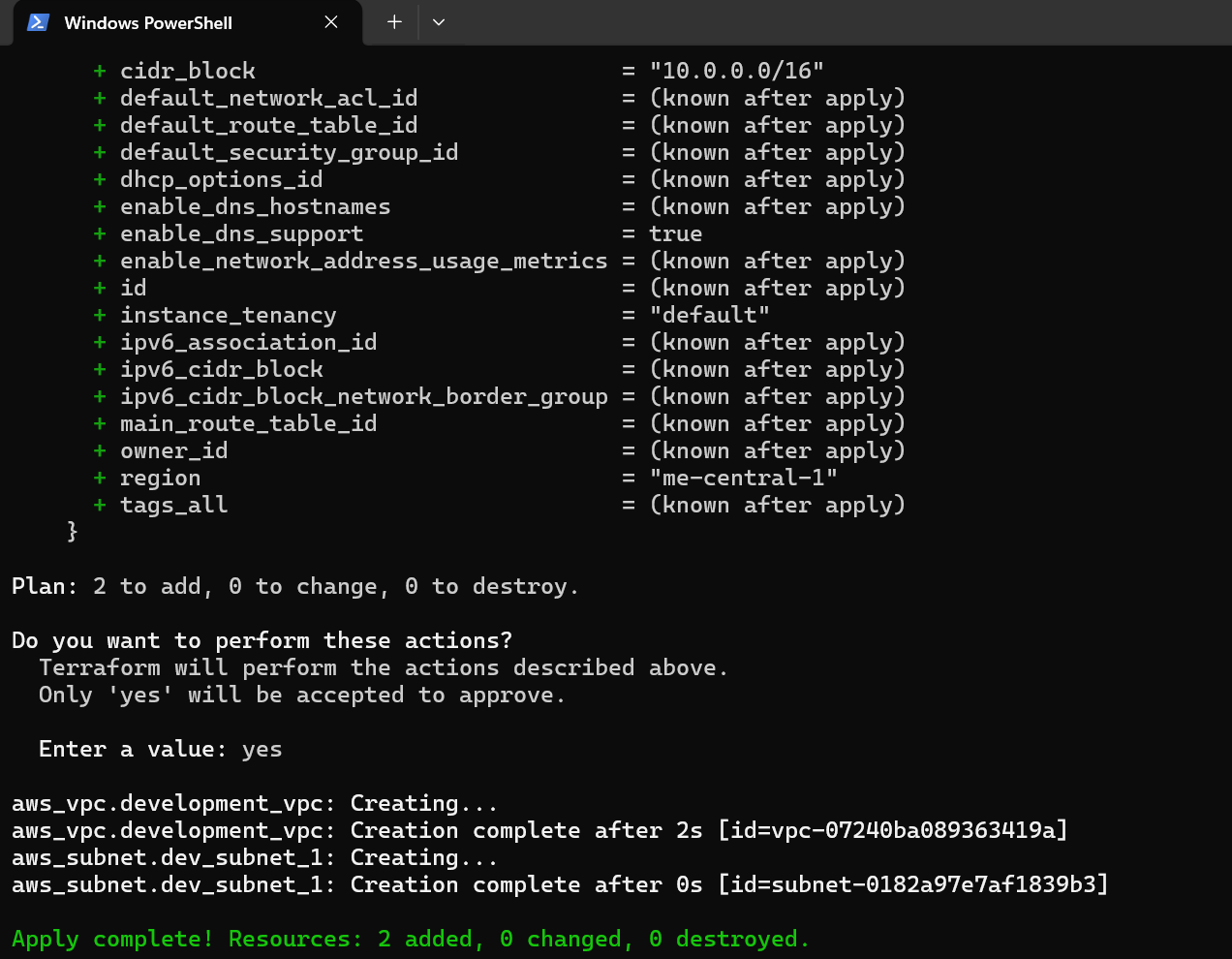
# [**Task 3: VPC/Subnet resource creation via Terraform, verification with CLI filters**](https://github.com/WaqasSaleem97/CC_F25/tree/main/Lab_Tasks/Lab_10#task-3--vpc-subnet-creation-initialization-verification)

1. Edit main.tf to add:

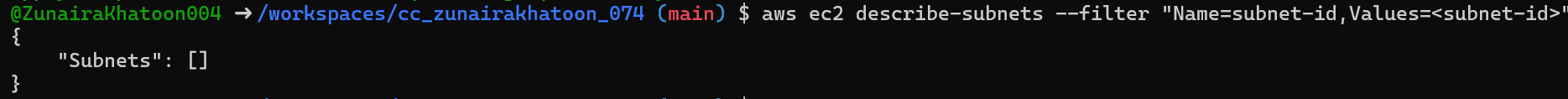


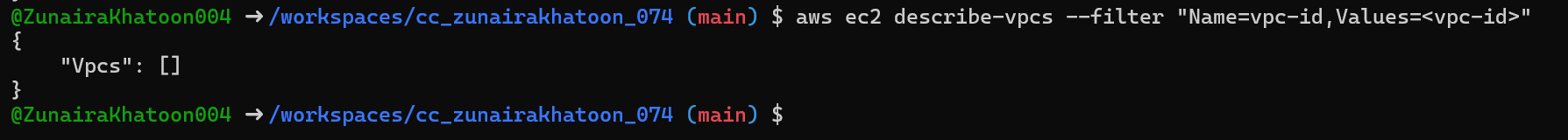
1. Run:





1. Verify resources using AWS CLI:





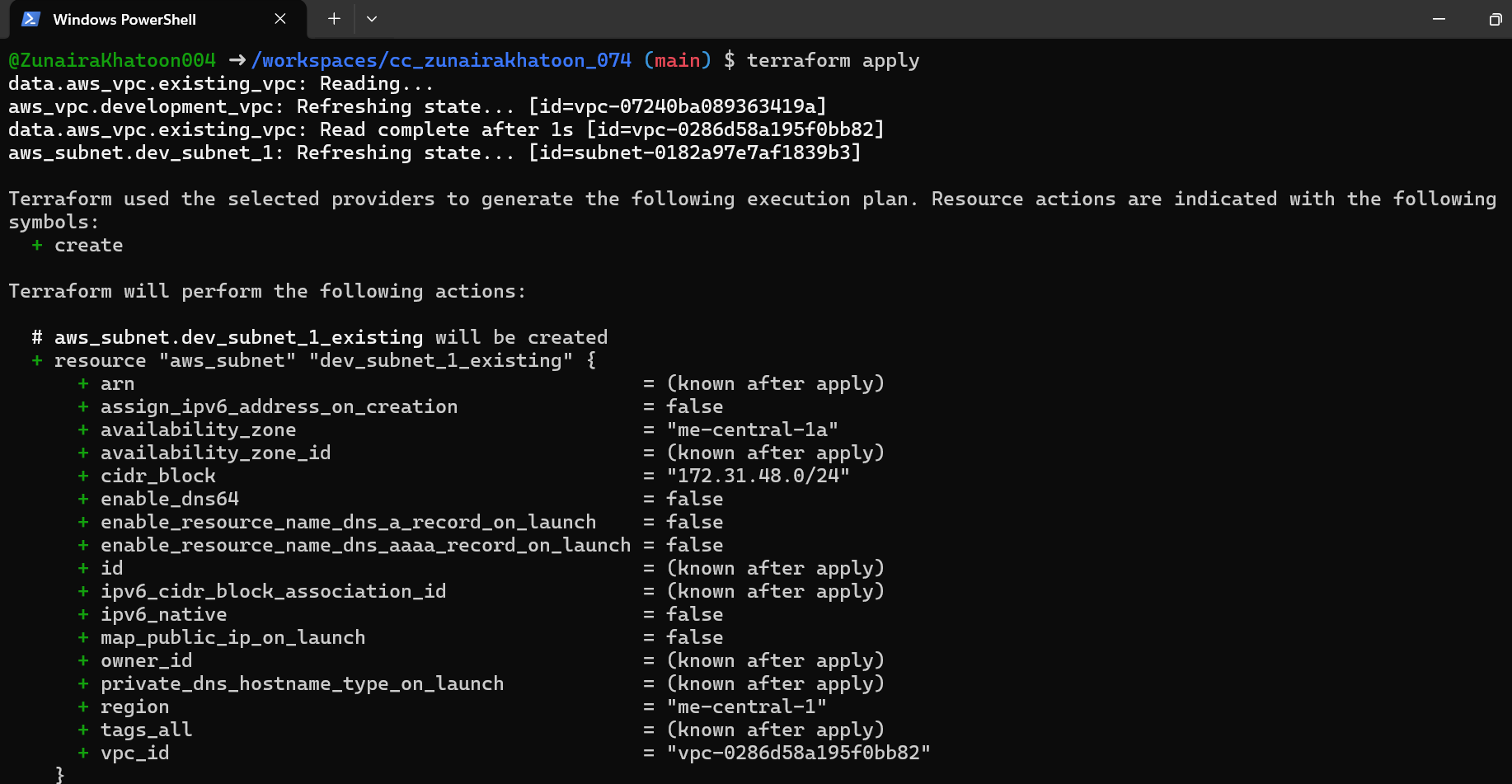
# [**Task 4: Data sources, targeted destroy/refresh/apply, resource tagging**](https://github.com/WaqasSaleem97/CC_F25/tree/main/Lab_Tasks/Lab_10#task-4--datasource-targeted-destroy-tags)

## A. Data Source & Resource Creation

1. Add to main.tf:

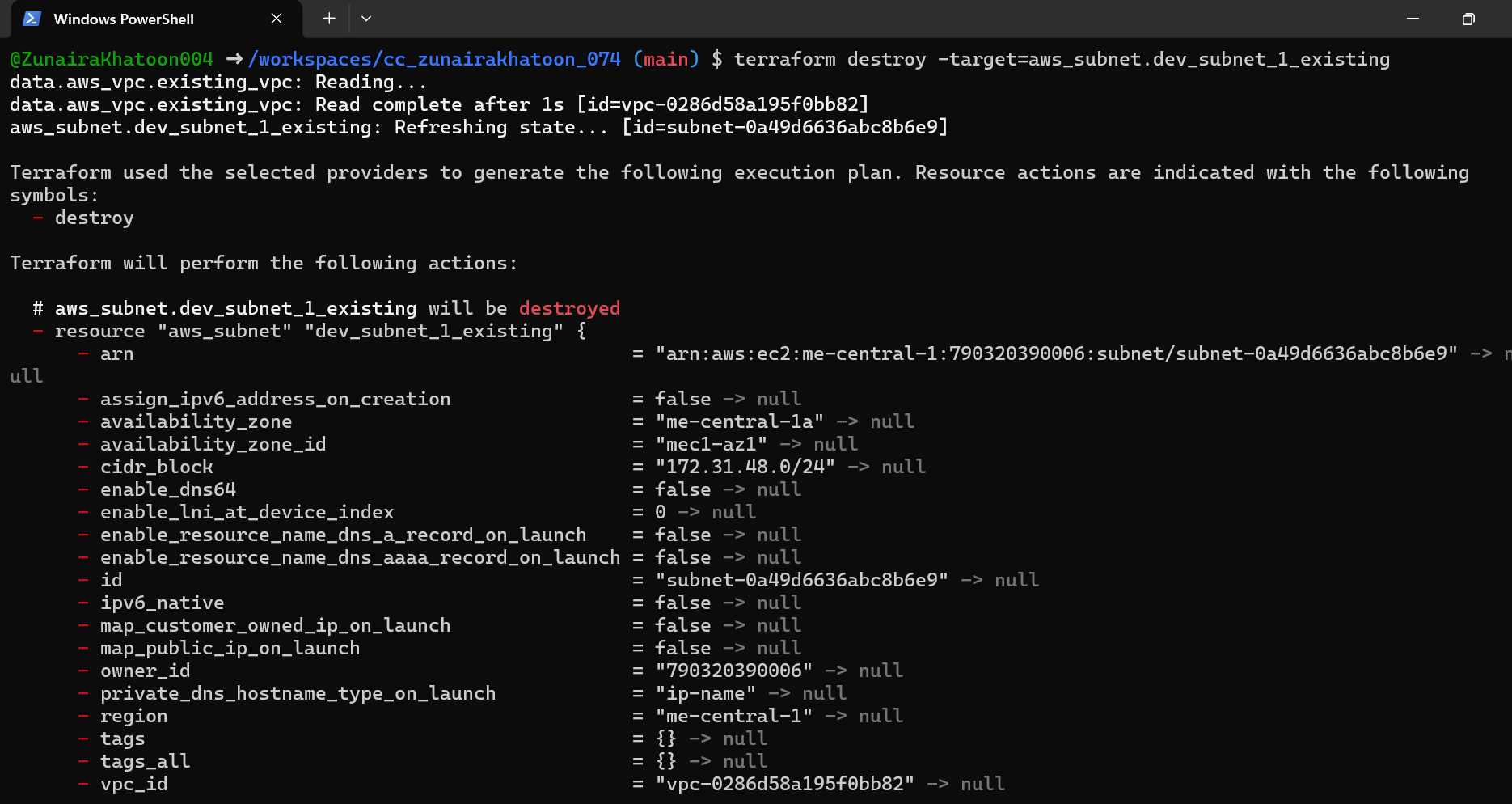


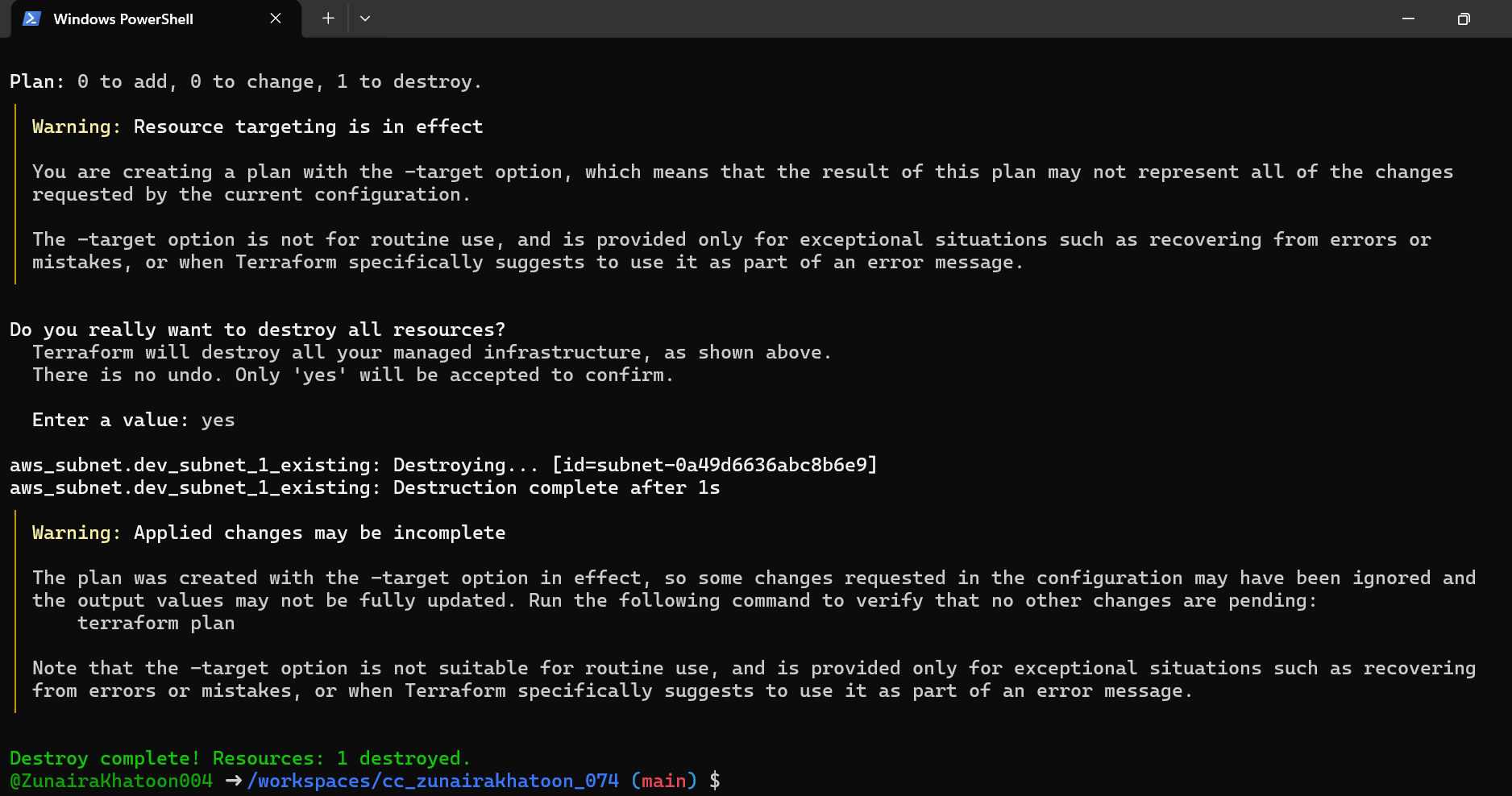
1. Apply configuration:



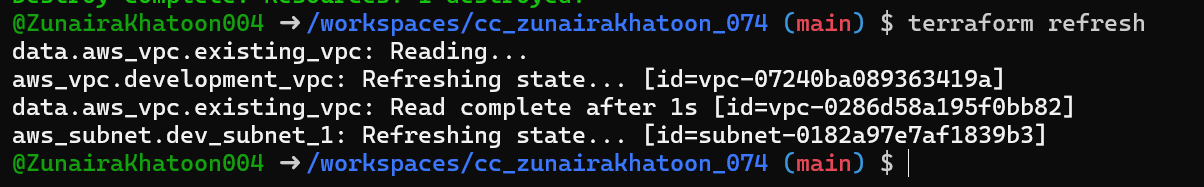
## B. Targeted Destroy & Refresh

1. Destroy only one resource:

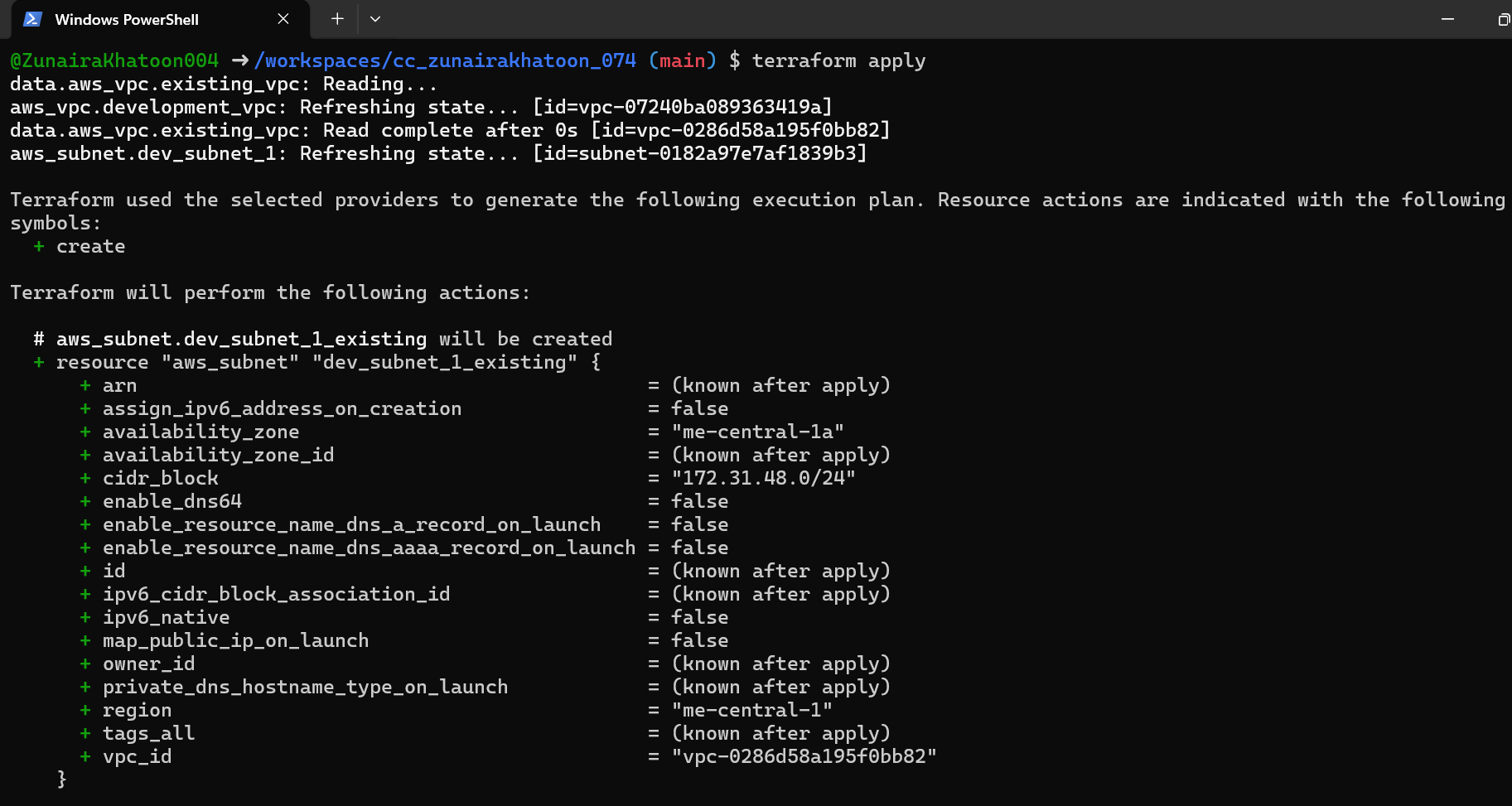




1. Refresh state:

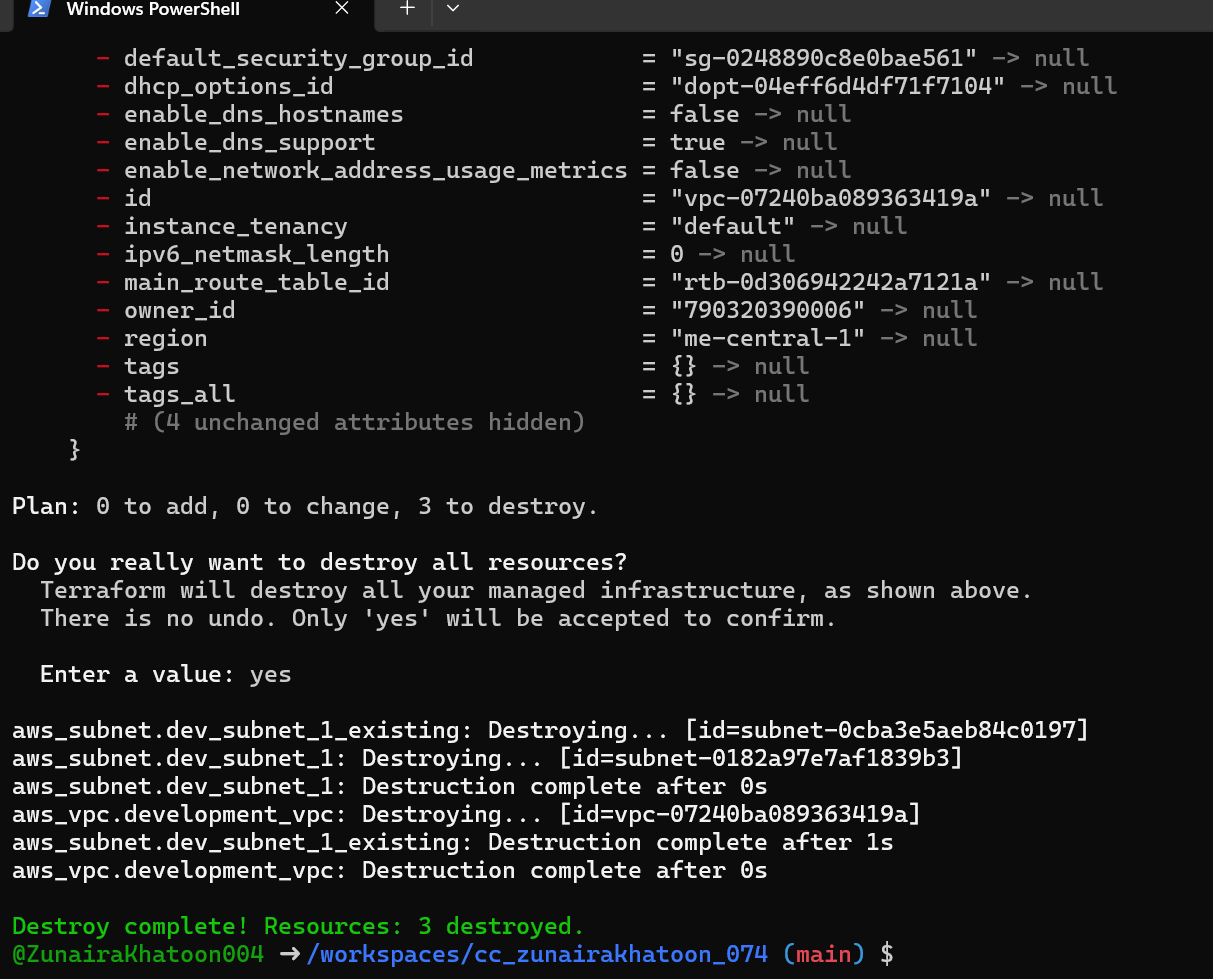


1. Re-apply configuration:

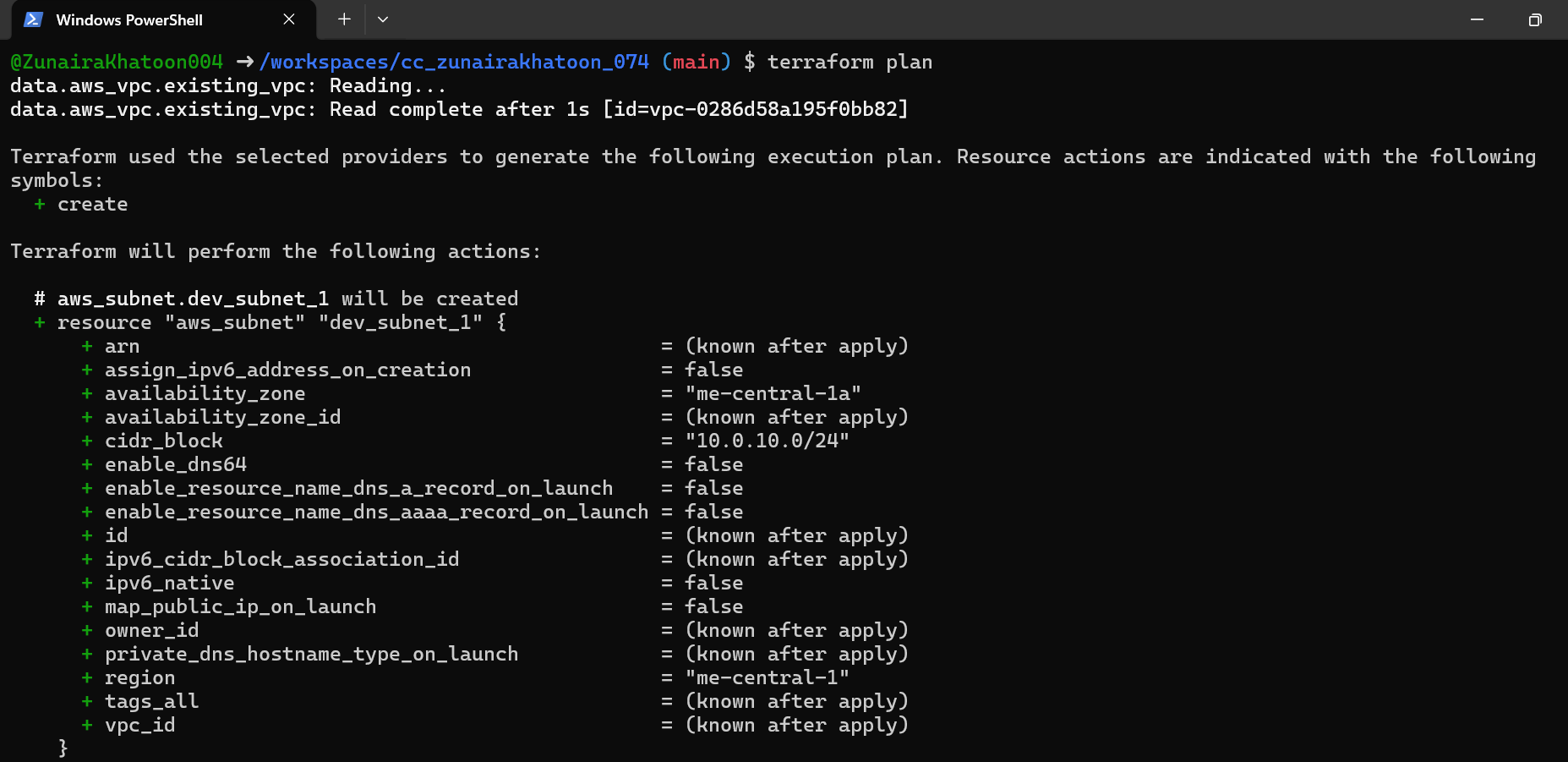


1. Destroy all resources:

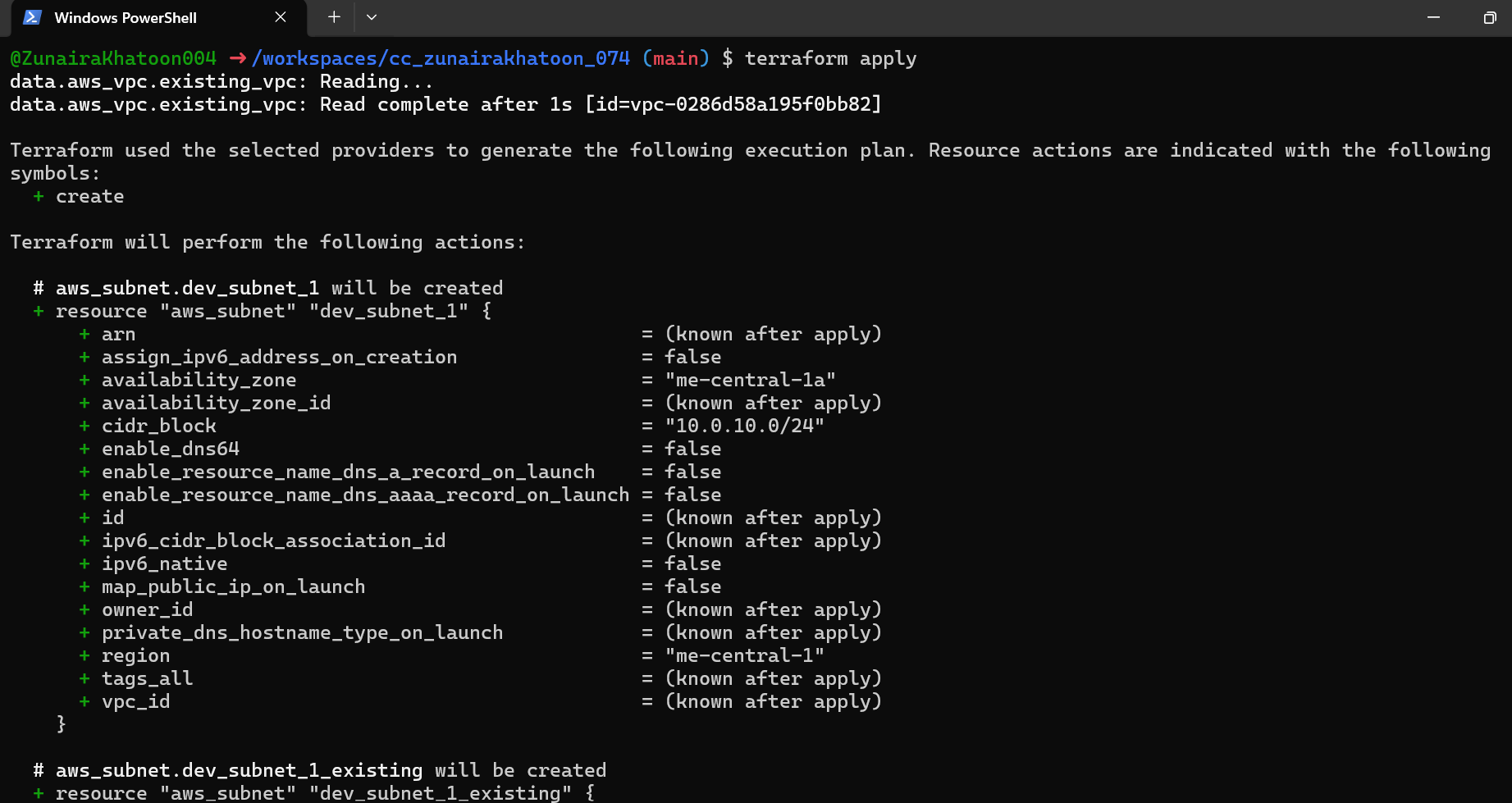
Terraform destroy



1. Plan configuration:

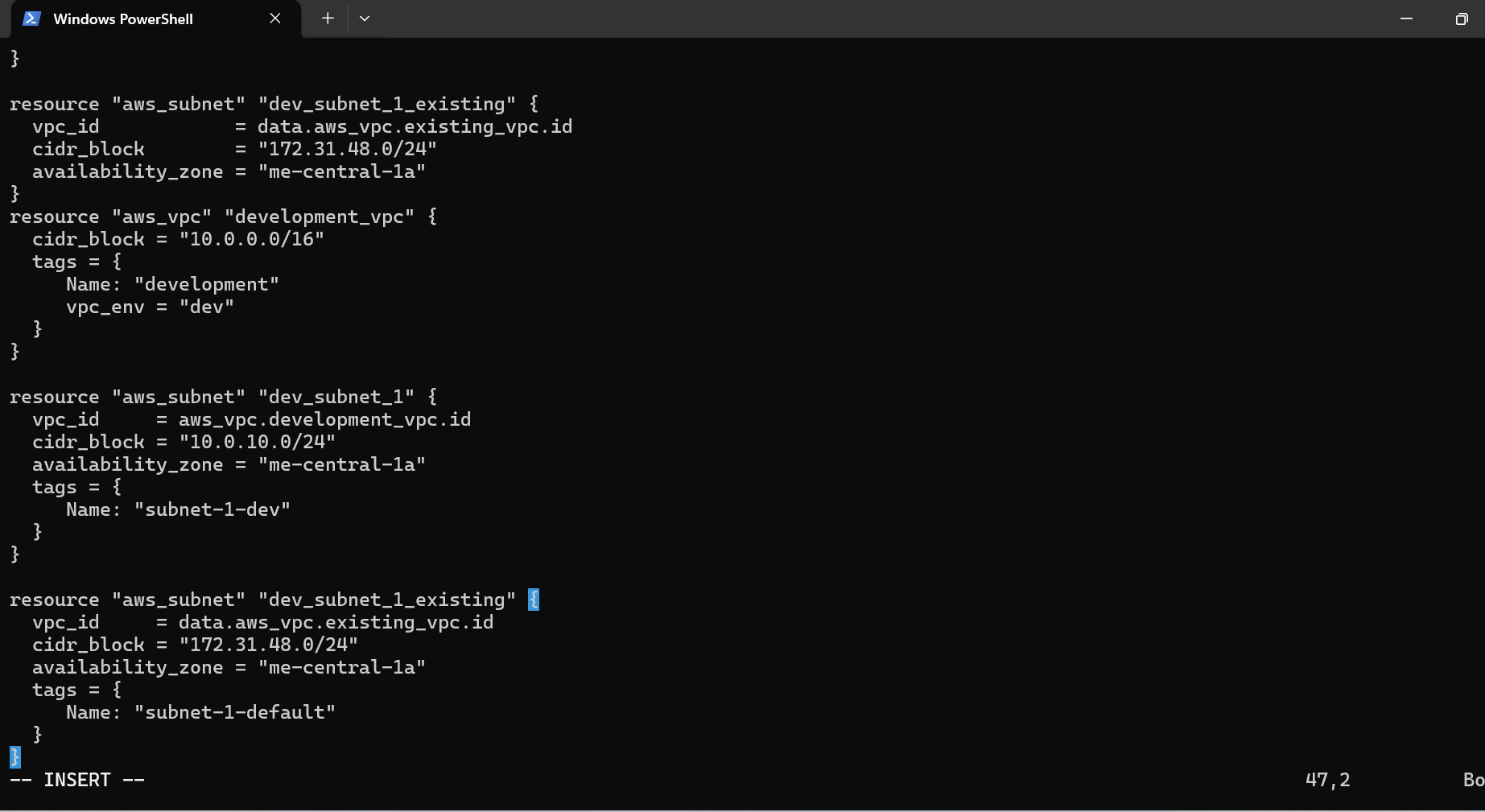


1. Apply again:

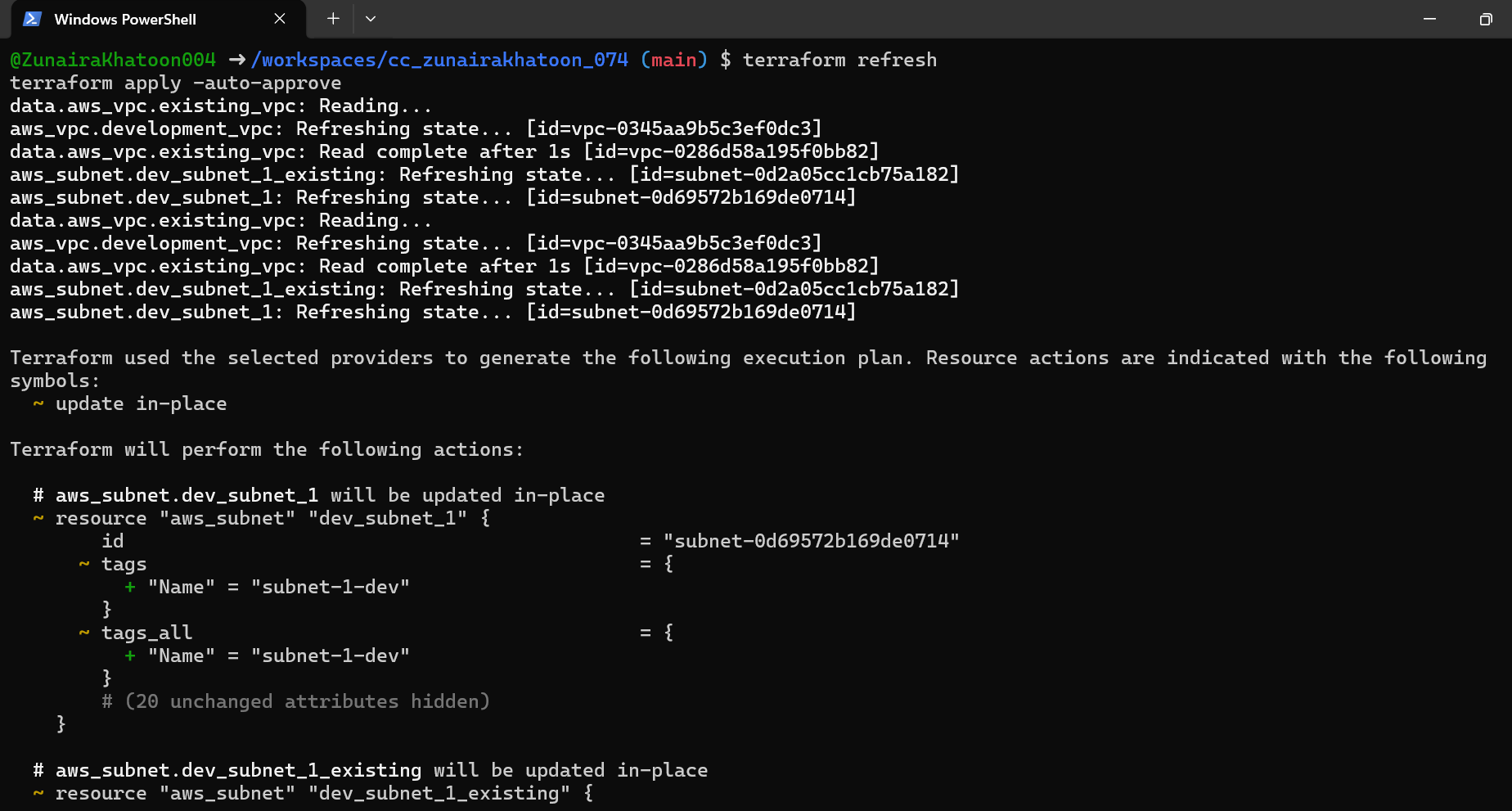


## C. Tagging Resources

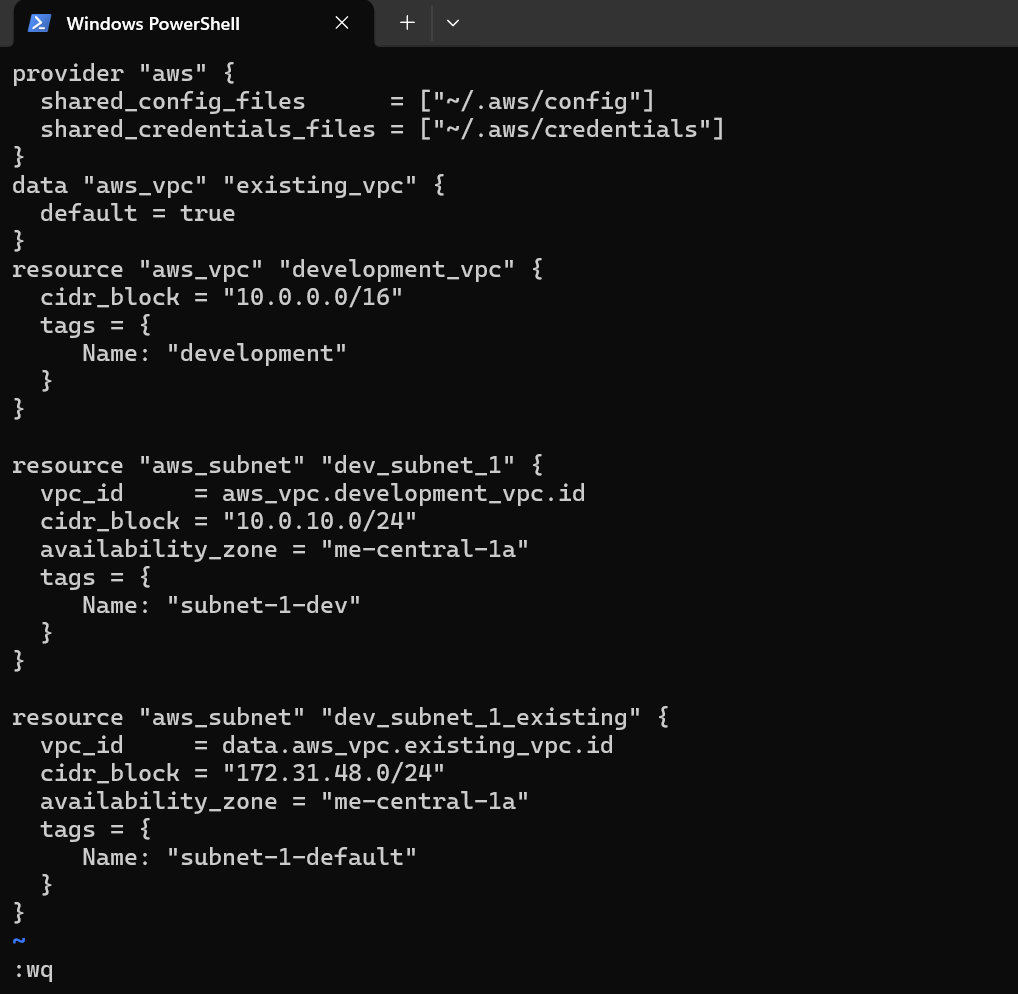
1. Modify main.tf to add tags:



1. Run:



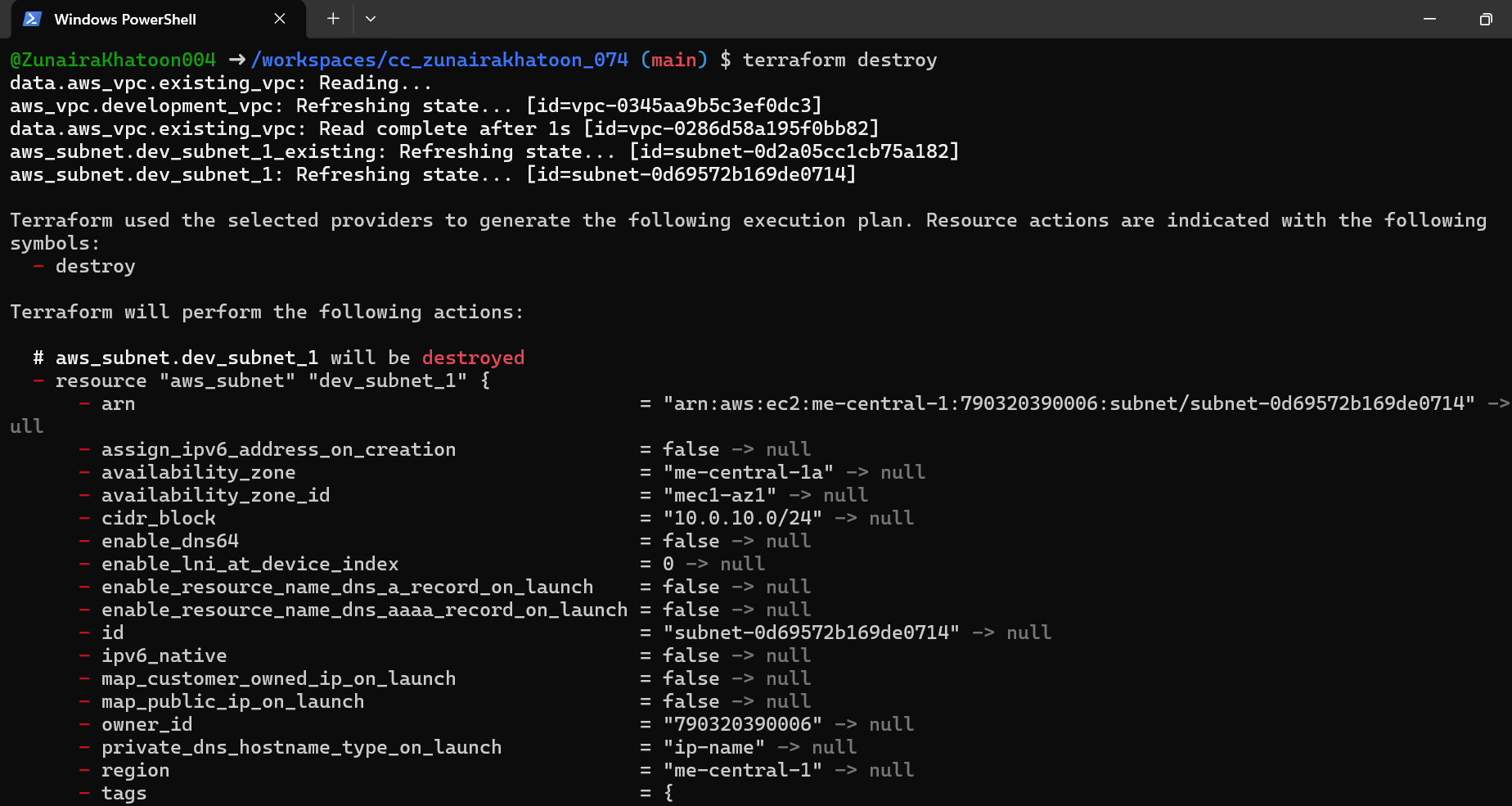
1. Remove vpc\_env = "dev" tag from development\_vpc resource, re-plan/apply:

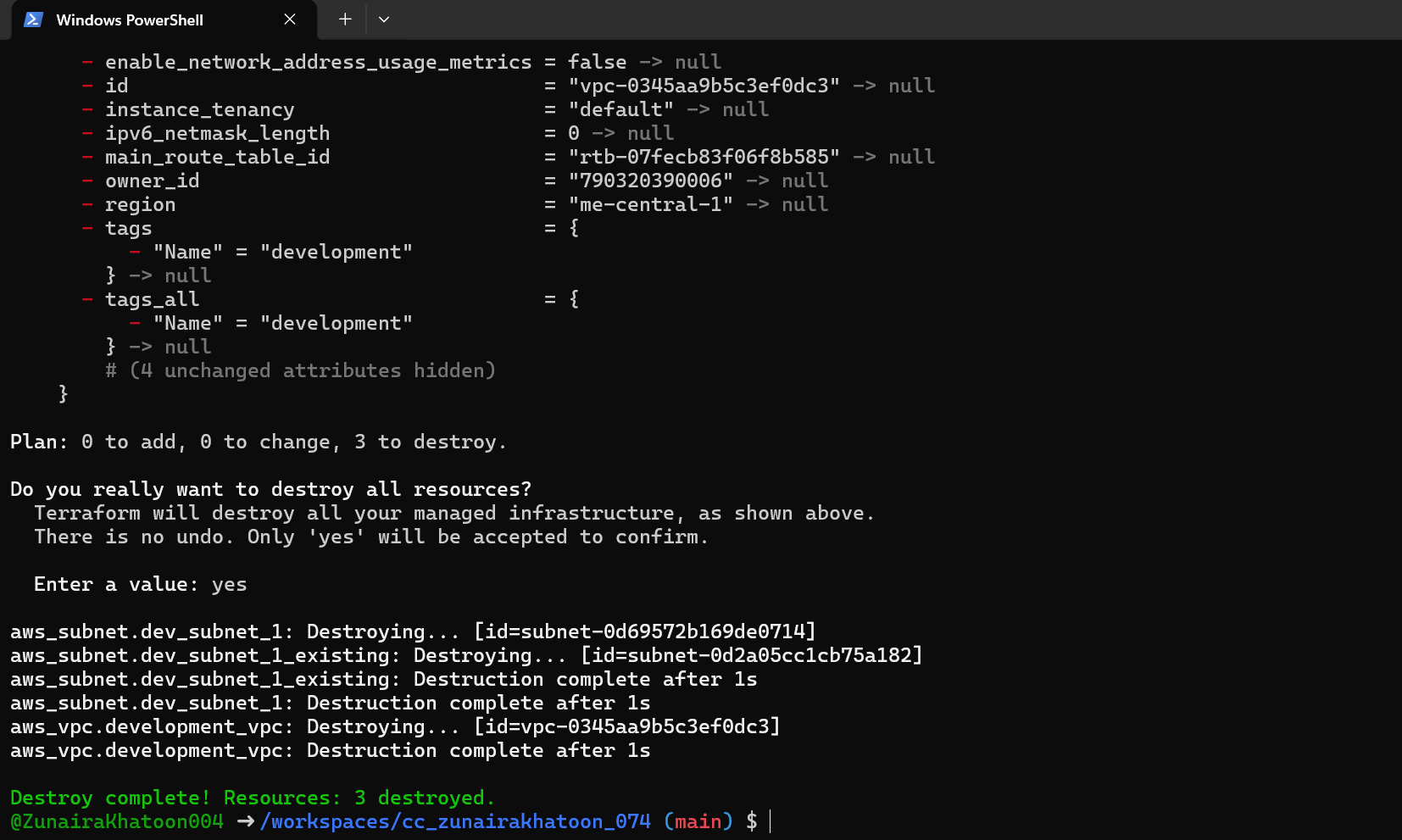




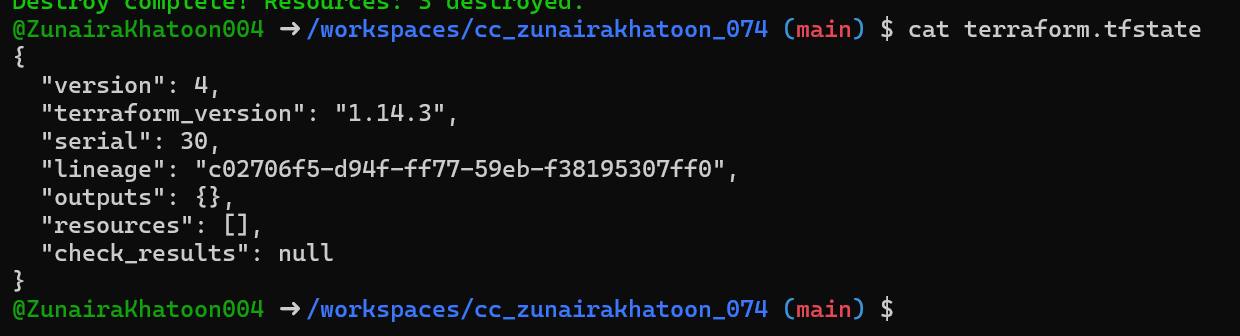
# [**Task 5: State file inspection, backup handling, terraform state commands**](https://github.com/WaqasSaleem97/CC_F25/tree/main/Lab_Tasks/Lab_10#task-5--state-file-inspection-commands)

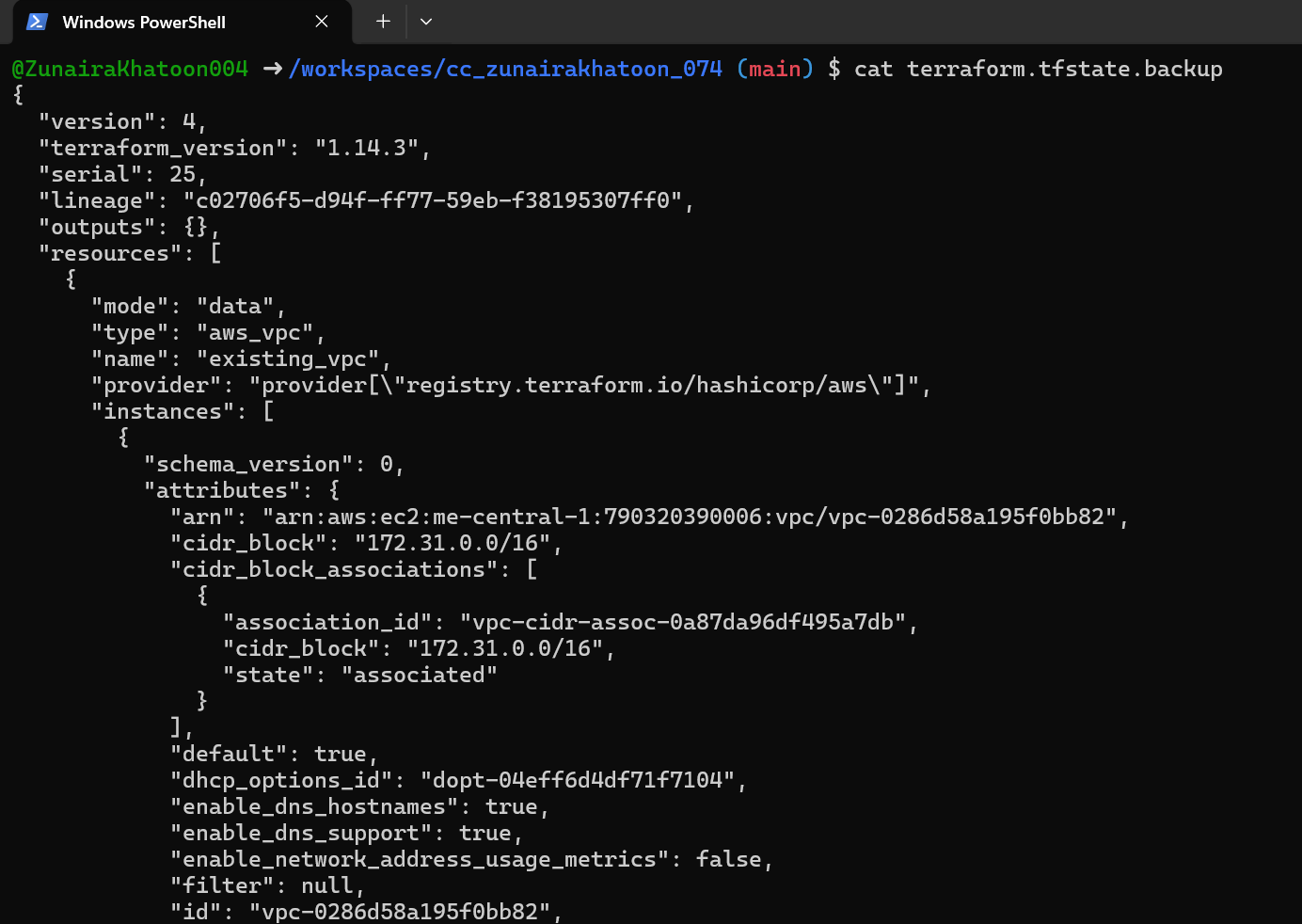
1. Destroy all resources:





1. Inspect state files after destroy:



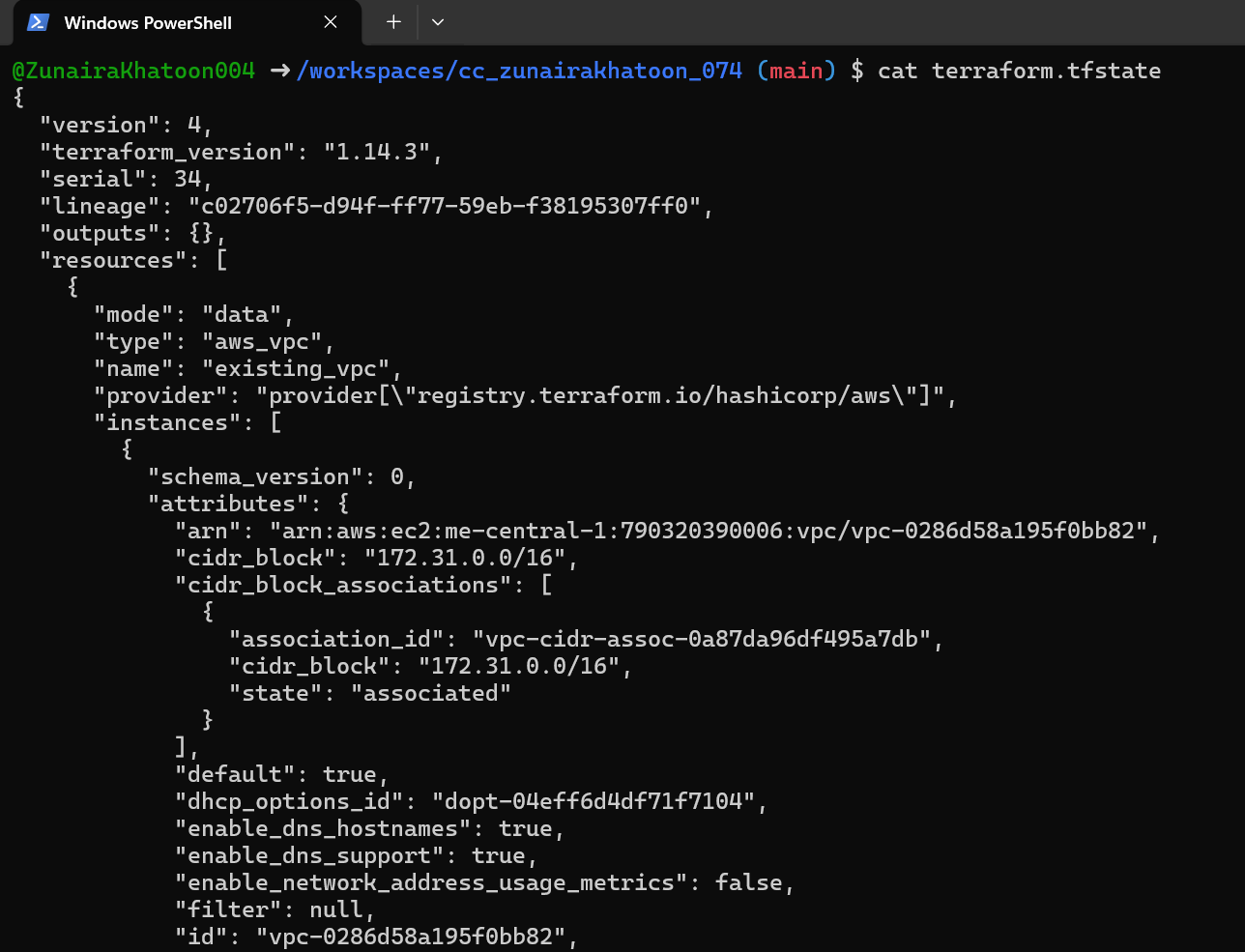


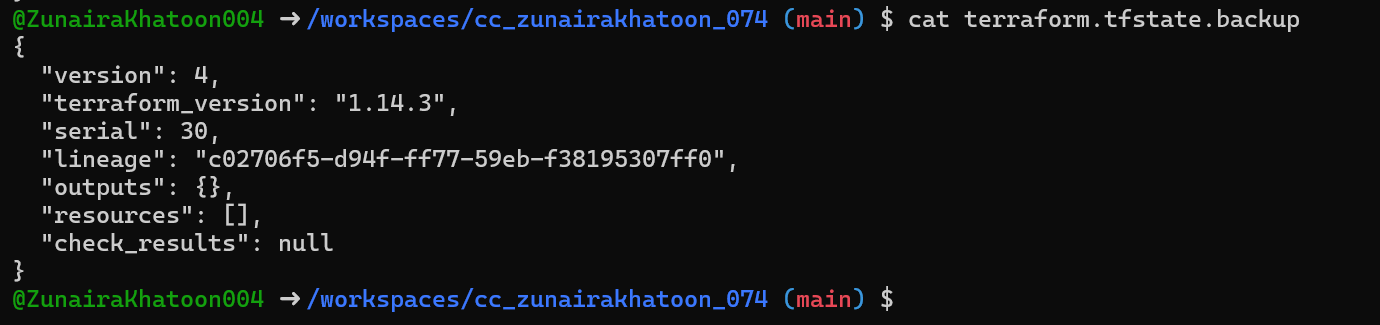
1. Recreate resources:



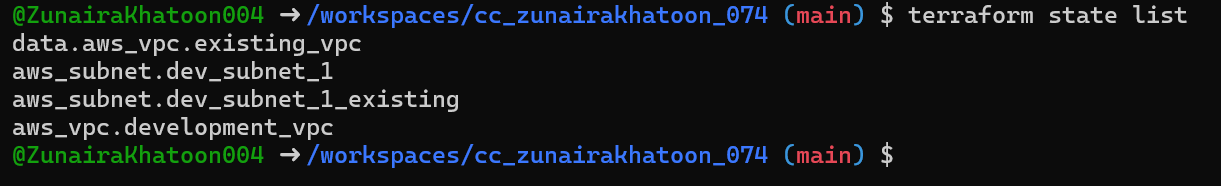


1. View state files:

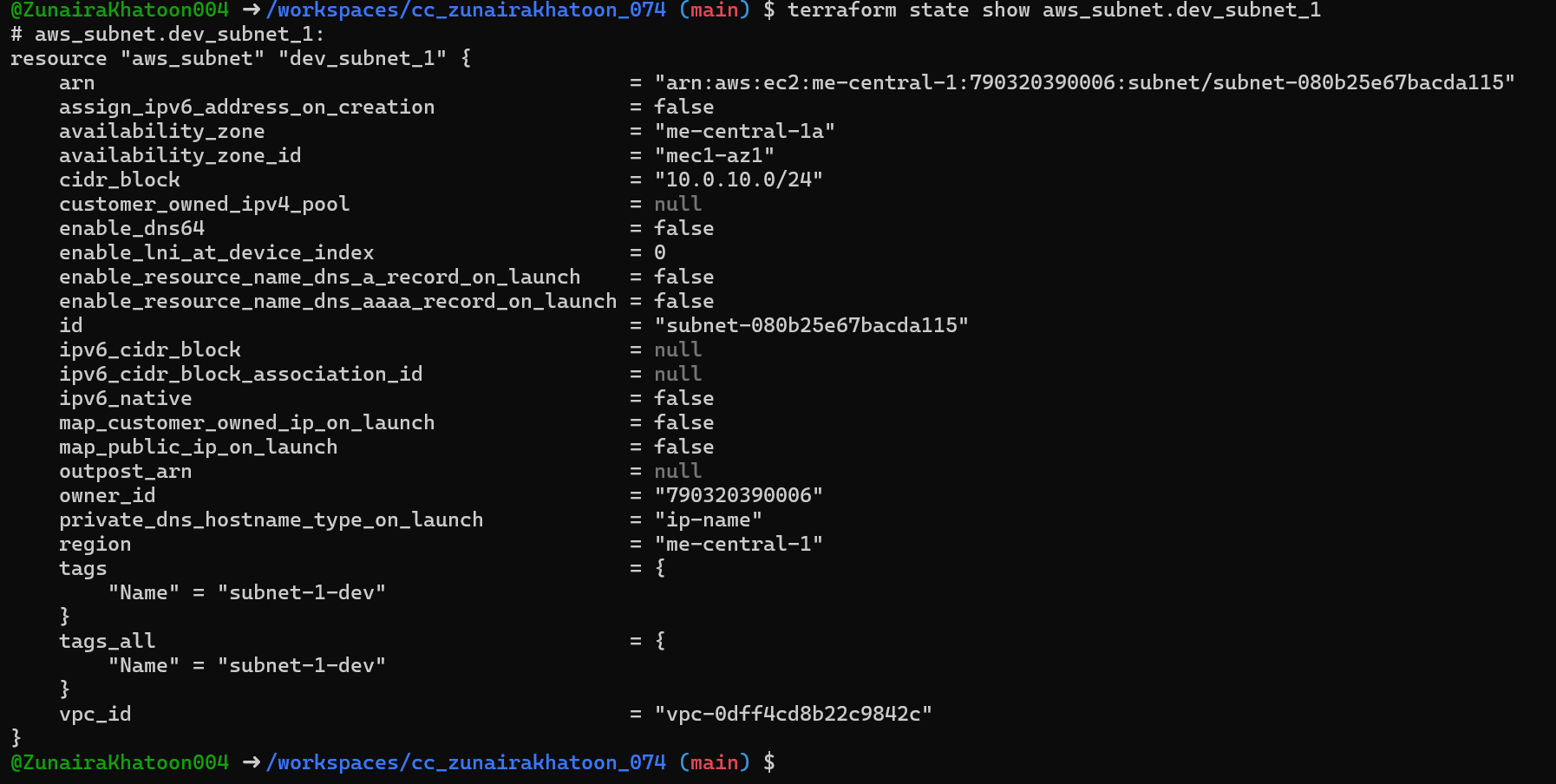




1. List resources:

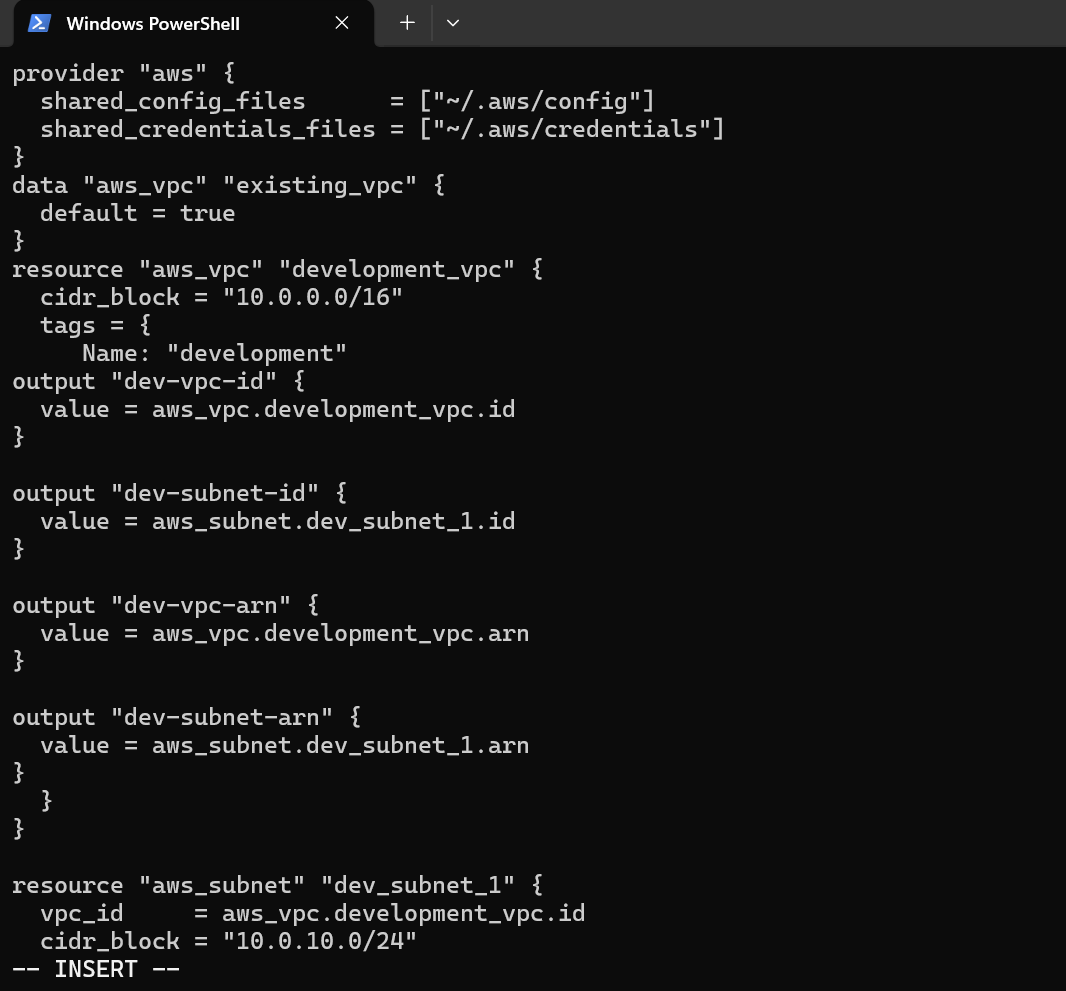


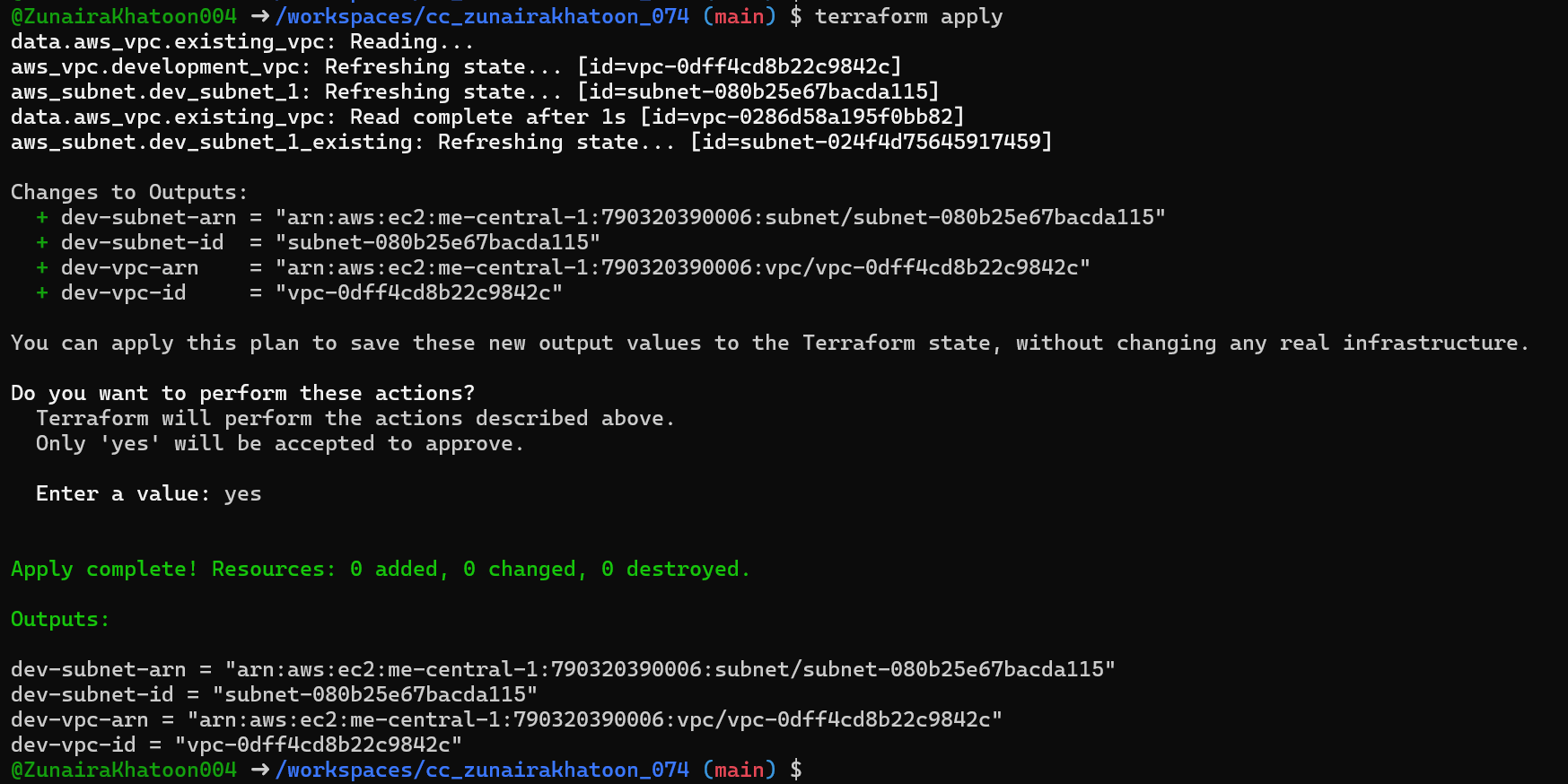
1. Show full attributes:



# [**Task 6: Terraform output blocks: return values (id, arn, attributes)**](https://github.com/WaqasSaleem97/CC_F25/tree/main/Lab_Tasks/Lab_10#task-6--terraform-outputs--attributes-reporting)

1. Add outputs in main.tf:





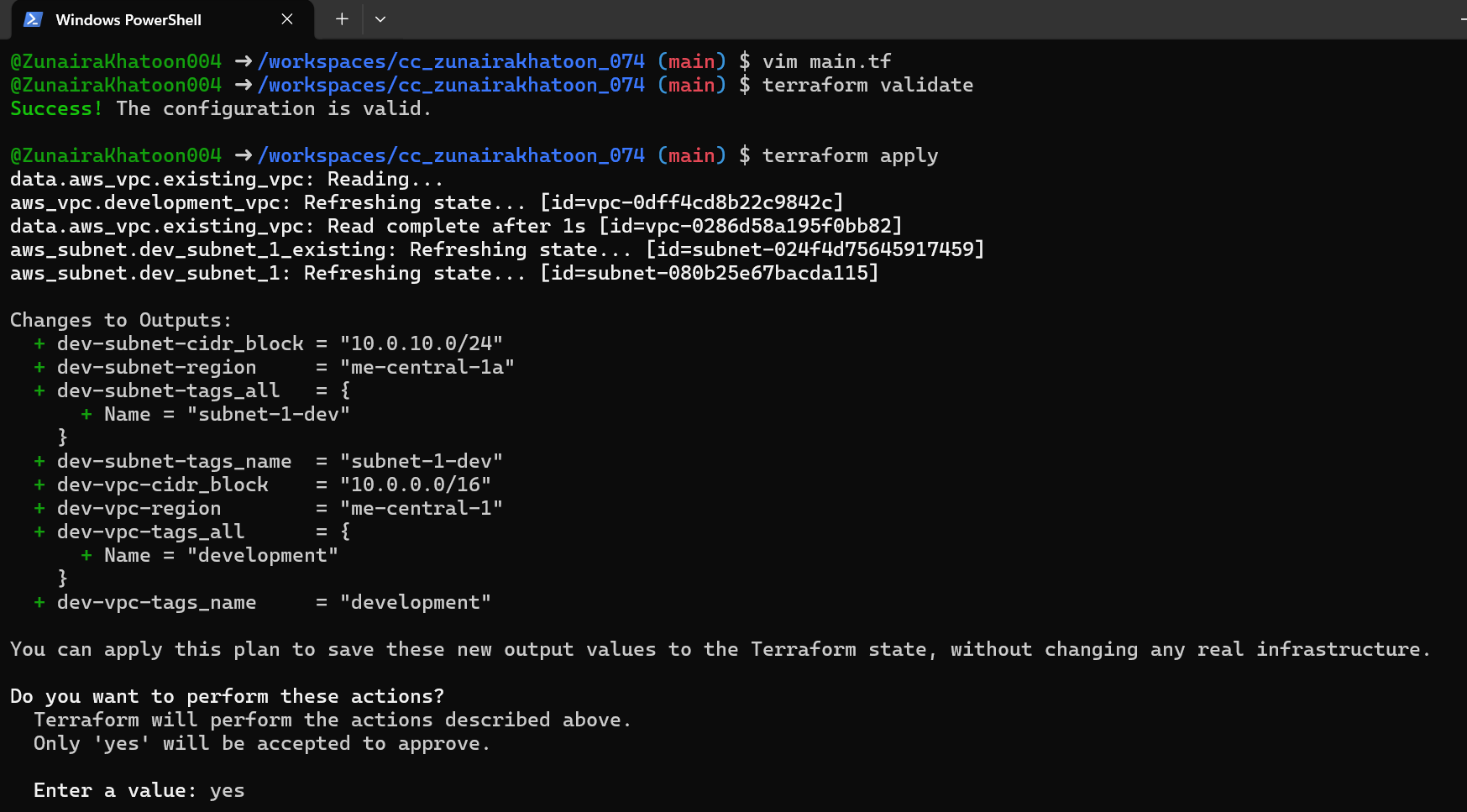
1. **Return ALL of the following output attributes from your VPC and Subnet resources:**

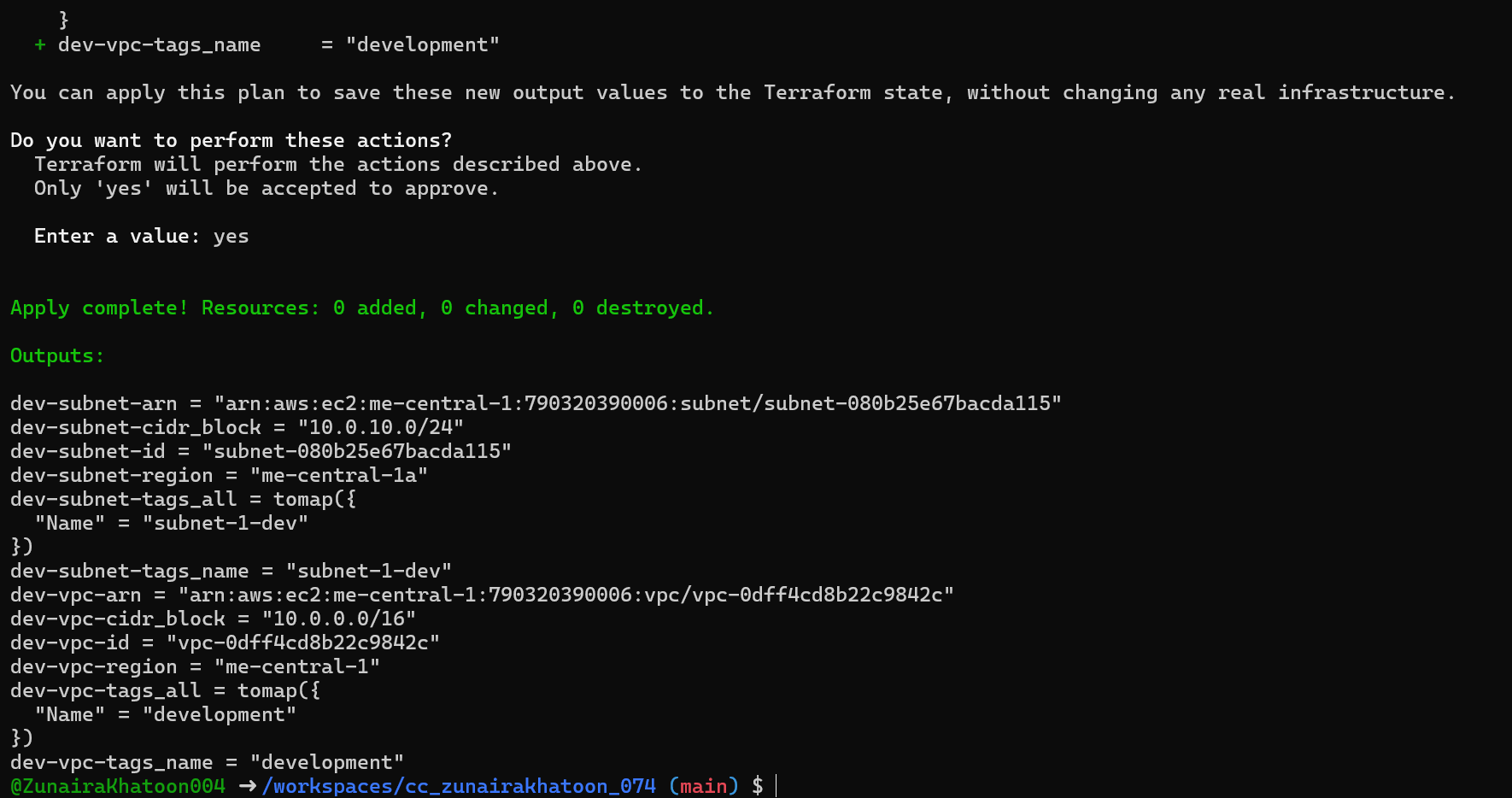
a) cidr\_block

b) region

c) tags.Name

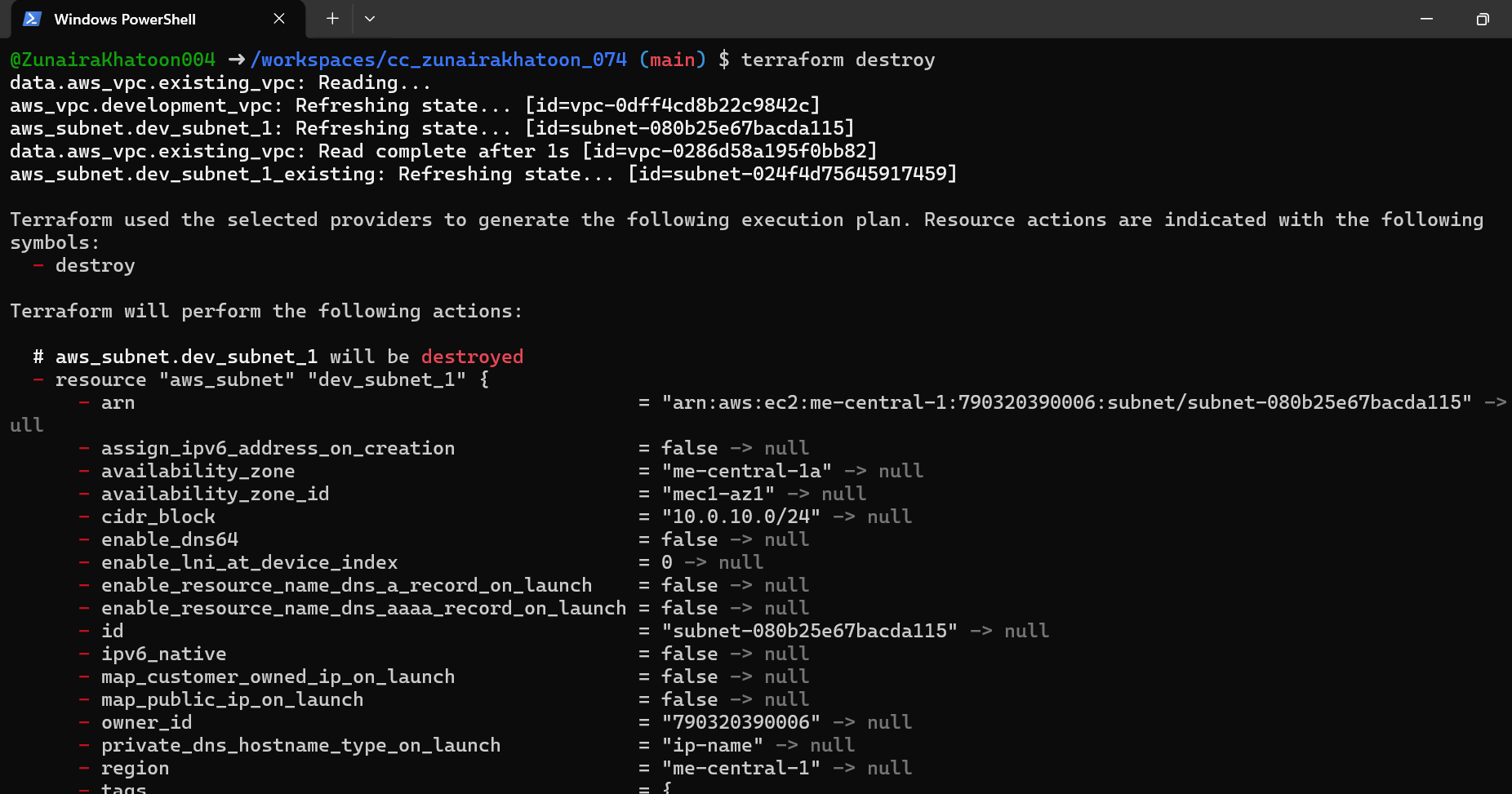
d) tags\_all

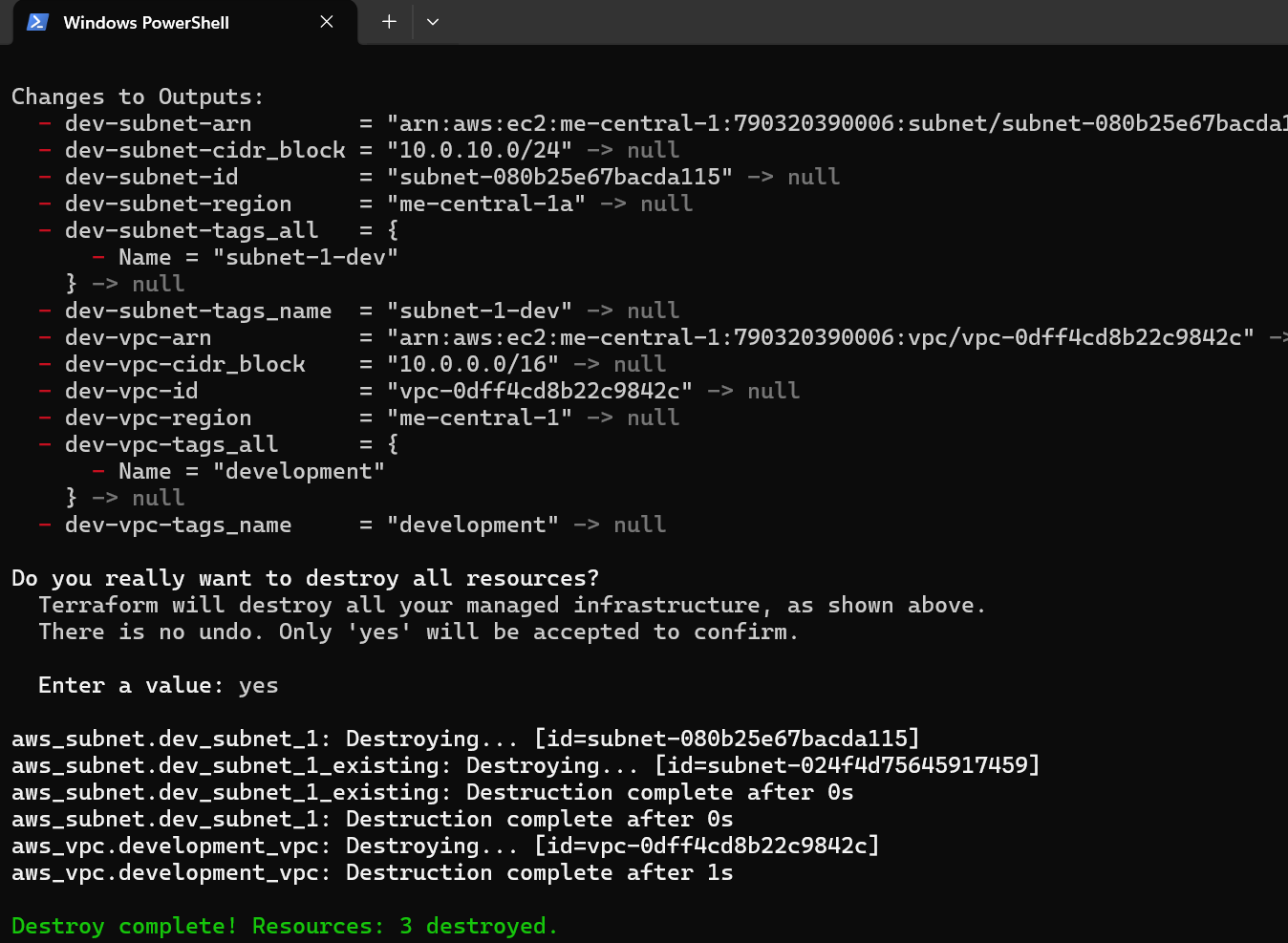




# [**Cleanup: Remove all resources, inspect state files**](https://github.com/WaqasSaleem97/CC_F25/tree/main/Lab_Tasks/Lab_10#cleanup--delete-resources-state-verification)

1. Destroy all resources:





1. Inspect state files:

