# Launching an EC2 Instance using Terraform on AWS (Step-by-Step)

## ✅ Step 1: Install Terraform in Windows

1. Go to https://developer.hashicorp.com/terraform/install  
2. Download the appropriate Windows binary (e.g., terraform\_1.10.5\_windows\_386.zip or 64-bit version)  
3. Extract the ZIP file to a folder.

## ✅ Step 2: Move terraform.exe

Move the extracted terraform.exe to the following directory:  
C:\Program Files\Terraform

## ✅ Step 3: Add Terraform to System Path

1. Search 'Edit the system environment variables' in the Windows search bar.  
2. Click 'Environment Variables'.  
3. Under 'System variables', find and click 'Path' → 'Edit'.  
4. Click 'New' and add: C:\Program Files\Terraform  
5. Click OK on all dialogs.

## ✅ Step 4: Verify Terraform Installation

1. Open Command Prompt as Administrator.  
2. Run: terraform version  
Expected Output: Terraform v1.10.5 (or the version you installed)

## ✅ Step 5: Create an IAM User in AWS

1. Go to AWS Console → IAM  
2. Click 'Users' → 'Add users'  
3. Enable 'Programmatic Access'  
4. Attach the 'AdministratorAccess' policy  
5. Click 'Create user'  
6. Save the Access Key ID and Secret Access Key (Download .csv or copy)

## ✅ Step 6: Write Terraform Script

1. Open PowerShell and navigate to your project directory:  
 cd C:\Users\<YourUsername>\Documents\TerraformProject  
2. Run: notepad main.tf  
3. Paste the following code and save the file:  
  
provider "aws" {  
 region = "ap-south-1"  
 access\_key = "YOUR\_ACCESS\_KEY"  
 secret\_key = "YOUR\_SECRET\_KEY"  
}  
  
resource "aws\_instance" "example" {  
 ami = "ami-00bb6a80f01f03502"  
 instance\_type = "t2.micro"  
 tags = {  
 Name = "AshwinUbunutInstance"  
 }  
}

## ✅ Step 7: Initialize Terraform

Run: terraform init  
  
Expected Output:  
Initializing the backend...  
Initializing provider plugins...  
Terraform has been successfully initialized!

## ✅ Step 8: Run Terraform Plan

Run: terraform plan  
  
Expected Output:  
An execution plan has been generated...  
Plan: 1 to add, 0 to change, 0 to destroy.

## ✅ Step 9: Apply Configuration

Run: terraform apply  
  
Type 'yes' when prompted.  
  
Expected Output:  
aws\_instance.example: Creating...  
aws\_instance.example: Creation complete...  
Apply complete! Resources: 1 added.

## ✅ Step 10: Destroy EC2 Instance

To remove the instance:  
  
Run: terraform destroy  
  
Type 'yes' when prompted.  
  
Expected Output:  
aws\_instance.example: Destroying...  
Destroy complete! Resources: 1 destroyed.