Terraform - Hands-On - Practice Assessment 1

Part 1 - Multiple Choice Questions: (*Highlight the correct answer in bold*)

1. **What language is Terraform using?**

   b. HCL

2. **Terraform can be run on which of the following operating systems?**

   d. All of the above

3. **Is Terraform available as a single executable binary?**

   a. Yes

4. **What file extension is used for Terraform configuration file?**

   a. .tf

5. **Which of the following is NOT a text editor for creating Terraform files?**

   d. Microsoft Word

6. **Which of these is NOT a Terraform command?**

   b. Compile

7. **Which command is used to initialize a working directory containing Terraform configuration files?**

   a. terraform init

8. **Before running `terraform apply`, which command should be executed to see the planned actions?**

   b. terraform plan

9. **Terraform's `plan` command is used for what purpose?**

c. To preview changes

10. **The command to find Terraform's version is:**

b. terraform version

11. **What is the purpose of the `terraform show` command?**

a. To display the current state or saved plan

12. **Which of the following is a valid Terraform resource type?**

d. All of the above

13. **What is the `terraform destroy` command used for?**

a. To remove all previously created infrastructure

14. **What is Terraform mainly used for?**

b. Infrastructure as Code

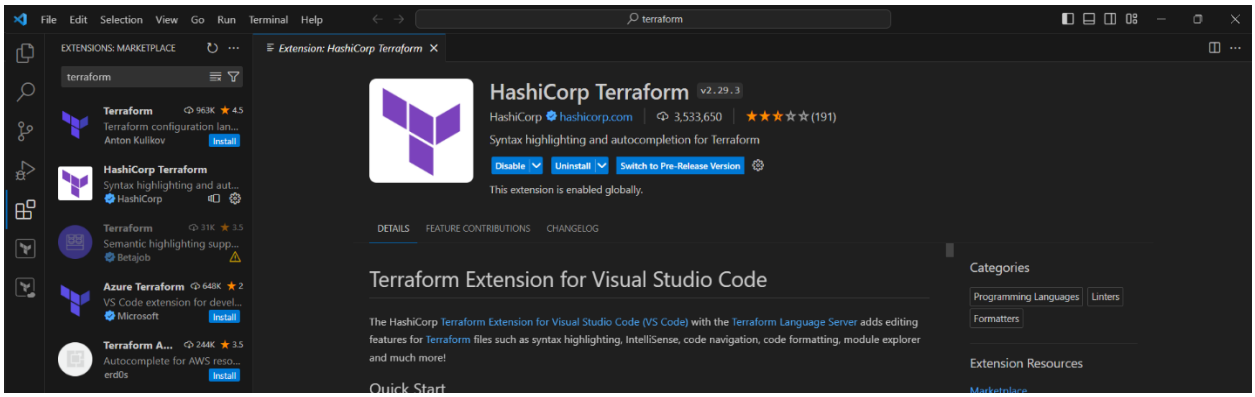
15. **Which file is used by Terraform to track the current state of the infrastructure?**

a. terraform.tfstate

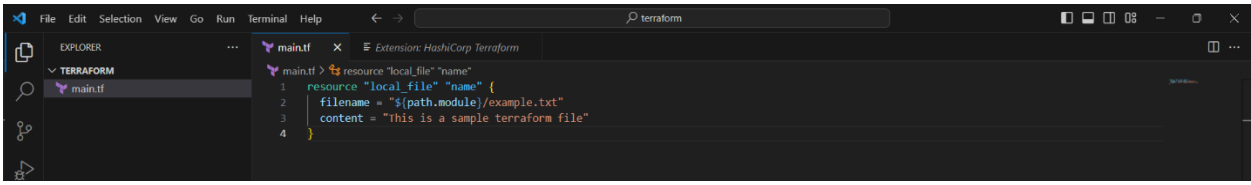
Part 2 – Hands-On Labs

Lab 1: Setting Up a Terraform Project in Visual Studio Code

- **Install Visual Studio Code**
  - If you do not already have Visual Studio Code, download and install it from the official website.
- **Install Terraform Extension in VS Code**
  - Open Visual Studio Code.
  - Go to Extensions
  - Search for "Terraform" and install the extension by HashiCorp.



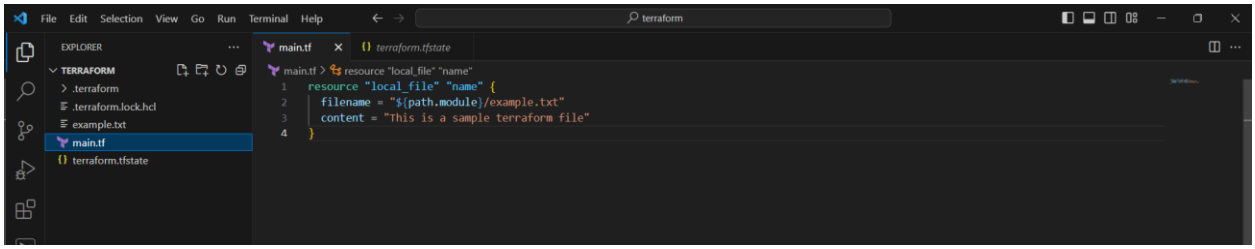
- **Create a New Project Folder**
  - Create a new folder on your computer where you will store your Terraform files.
  - Open this folder in Visual Studio Code (File > Open Folder).
- **Initialize a New Terraform Configuration File**
  - Create a new file in the folder with the **`.tf`** extension, for example, **`main.tf`**.
  - Write a simple Terraform configuration or leave it blank for now.



Lab 2: Basic Local File Operation

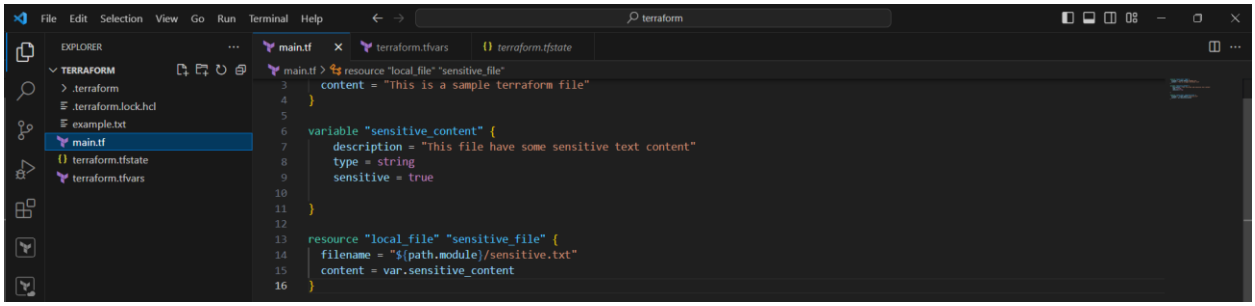
- **Define a Local File Resource**
  - In **`main.tf`**, start by defining a resource to create a local file. For example:

- **Initialize Terraform**
  - Open the terminal in VS Code (Terminal > New Terminal).
  - Run **`terraform init`** to initialize the Terraform project. This command sets up Terraform to run your configuration.
- **Apply Configuration**
  - Run **`terraform apply`** to apply your configuration.
  - Confirm the action in the terminal when prompted.
  - This step will create a file named **`example.txt`** with the content "Hello, Terraform!" in your project directory.

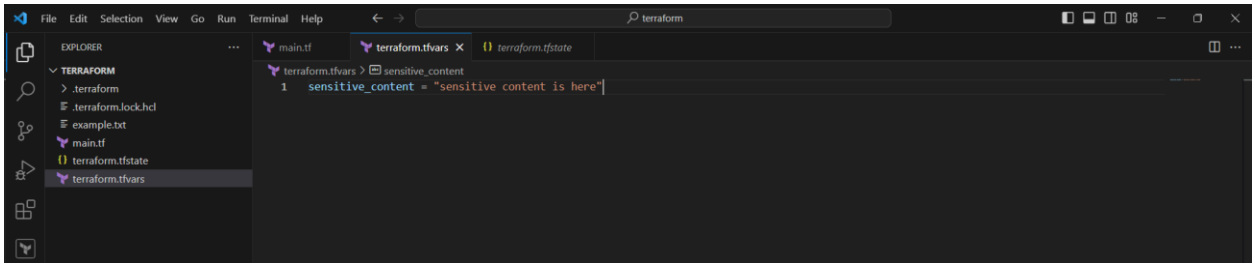


Lab 3: Handling Sensitive File Operations

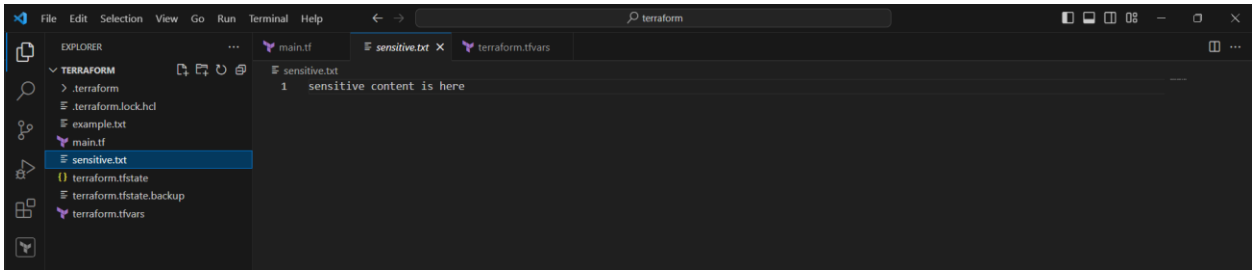
- **Create a Sensitive File Resource**
  - Now, let us handle a sensitive file operation. For example, you might want to create a file that contains sensitive information.
  - In **`main.tf`**, add a new resource block:
- **Define Variables**
  - Create a new file named **`variables.tf`** and define a variable for the sensitive content:



- **Add Sensitive Content**
  - Create a **`terraform.tfvars`** file to store the value of the sensitive content.
  - Add your sensitive content in **`terraform.tfvars`**, like:



- **Re-run Terraform Apply**
  - Run **`terraform apply`** again in your terminal.
  - Confirm the action when prompted.
  - Terraform will now create another file named **`sensitive.txt`** with the sensitive content, and it will treat the content as sensitive in its output.
- **Verify the Files**
  - Check your project directory. You should see two new files: **`example.txt`** and **`sensitive.txt`**, each with the specified content.



Conclusion and Best Practices

- Always use version control (like Git) to manage your Terraform files.
- Avoid committing sensitive data, like **`terraform.tfvars`** with sensitive default values, to version control.
- Add .gitignore file to the terraform project
- Commit the files to your Kanini Private git repository with proper commit message.
- Regularly refer to Terraform documentation for best practices and updates.

Useful Links:

Local Provider: https://registry.terraform.io/providers/hashicorp/local/latest/docs

Providers: https://registry.terraform.io/browse/providers

Use Cases: https://developer.hashicorp.com/terraform/tutorials/applications