Purpose: Manage configuration files using Git for multiple servers.

Features:

1. **Backup:** Copies local configuration files to a Git repository preserving their permissions, group, and user.
2. **Update / Restore:** Pulls updates / restore from the repository and applies them to the system.
3. **Version Control:** Tracks changes to configuration files located in various system directories using Git.

Use Cases :

1. Track and version multiple configuration files in Git.
2. Backup configuration files (useful if someone accidentally messes up and you need to restore them).

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Source Code & Notes : https://github.com/vishalk17/devops/tree/main/scripts/config_backup_restore_script

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Script Name: config_backup_restore.sh

This Bash script, **config_backup_restore.sh** is designed for managing configuration or other files on a Linux system. The script **provides three options for the user**:

1. Update the repository with local configuration files.
1. Pull updates from the repository and apply them.
1. Exit the script.

The user's choice determines which action is executed.

Script Overview

The same script, named `config_backup_restore.sh`, can be placed in all branches of the repository representing different server names. The only differences between each script will be the branch name and file paths.

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For Explanation take this as an example :
https://github.com/vishalk17/devops/blob/main/scripts/config_backup_restore_script/config_backup_restore.sh

Variables and Functions

- **BRANCH**: Specifies the Git branch to use for operations (e.g., "web-41" for branch web-41).
- **PATHS**: An array of file paths to be copied and updated. (Note: The files may vary from server to server.)
- **update_repo()**: Updates the repository with local configuration files.
- **apply_updates()**: Pulls updates from the repository and prompts the user to apply them.
- **display_menu()**: Displays a menu and handles user input.

Function Descriptions :

update_repo()

This function:

- Records ownership and permissions information in ownership.txt for each file in the PATHS array.
- Copies each file to the repository, preserving the directory structure.
- Adds and commits changes to the Git repository with a commit message that includes the current IST date and time.
- Pushes changes to the specified branch.

apply_updates()

This function:

- Pulls the latest changes from the specified Git branch.
- Prompts the user to decide whether to apply the pulled updates.
- If confirmed, copies the files from the repository to their respective system paths.
- Restores file ownership and permissions based on the previously recorded ownership.txt file.

Notes :

- Always ensure you are on the correct branch before running the script.
- You can edit the paths of files in the script as needed.

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Demo :
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Configs files backup :

```bash
#!/bin/bash

# Specify the branch name for Git operations
BRANCH="vishalk17-server"  # Replace with your preferred branch name

# Define the list of paths to be copied
PATHS=(
    "/etc/mysql/mysql.cnf"
    "/etc/logrotate.d/jenkins"
    "/home/vishal/fluentd/enable"
)
```

```
● vishal@vishalk17:~/vishal/vish$ ls
  config_backup_restore.sh
● vishal@vishalk17:~/vishal/vish$ tree

  .
  └── config_backup_restore.sh

  0 directories, 1 file
○ vishal@vishalk17:~/vishal/vish$ 
```

```
vishal@vishalk17:~/vishal/vish$ sudo bash config_backup_restore.sh
[sudo] password for vishal:
Menu:
1. Update repository with local configuration files
2. Pull updates from repository and apply to system paths
3. Exit
Enter your choice [1-3]: 
```

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```
vishal@vishalk17:~/vishal/vish$ sudo bash config_backup_restore.sh
Menu:
1. Update repository with local configuration files
2. Pull updates from repository and apply to system paths
3. Exit
Enter your choice [1-3]: 1
[vishalk17-server 8fe51ef] Automated backup on 2024-08-14 11:24:54 IST
 4 files changed, 65 insertions(+)
 create mode 100644 etc/logrotate.d/jenkins
 create mode 100644 etc/mysql/mysql.cnf
 create mode 100755 home/vishal/fluentd/enable
 create mode 100644 ownership.txt
Username for 'https://github.com': vishalk17
Password for 'https://vishalk17@github.com':
Enumerating objects: 13, done.
Counting objects: 100% (13/13), done.
Delta compression using up to 8 threads
Compressing objects: 100% (7/7), done.
Writing objects: 100% (12/12), 1.73 KiB | 885.00 KiB/s, done.
Total 12 (delta 0), reused 0 (delta 0), pack-reused 0
To https://github.com/vishalk17/ntcarfte-config
   348ed82..8fe51ef  vishalk17-server -> vishalk17-server
Changes pushed to branch vishalk17-server successfully.
Script Completed.
vishal@vishalk17:~/vishal/vish$ []
```

```
vishal@vishalk17:~/vishal/vish$ ls
config_backup_restore.sh  etc  home  ownership.txt
vishal@vishalk17:~/vishal/vish$ tree
.
├── config_backup_restore.sh
├── etc
│   ├── logrotate.d
│   │   └── jenkins
│   └── mysql
│       └── mysql.cnf
├── home
│   └── vishal
│       └── fluentd
│           └── enable
└── ownership.txt

6 directories, 5 files
vishal@vishalk17:~/vishal/vish$ cat ownership.txt
644 root root /etc/mysql/mysql.cnf
644 root root /etc/logrotate.d/jenkins
775 vishal vishal /home/vishal/fluentd/enable
vishal@vishalk17:~/vishal/vish$ 
```

| ⑂ vishalk17-server ▾ | ⑂ 2 Branches ⬡ 0 Tags | | 🔍 Go to file | t | Add file ▾ | <> Code ▾ |

👤 vishalk17 Automated backup on 2024-08-14 11:24:54 IST		8fe51ef · 5 minutes ago	🕐 2 Commits
📁 etc	Automated backup on 2024-08-14 11:24:54 IST		5 minutes ago
📁 home/vishal/fluentd	Automated backup on 2024-08-14 11:24:54 IST		5 minutes ago
📄 config_backup_restore.sh	initial commit		26 minutes ago
📄 ownership.txt	Automated backup on 2024-08-14 11:24:54 IST		5 minutes ago

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Restoring or Updating Files from git if Lost or modified by mistake:

Let me delete those files for this demo, so we can restore them .

```
vishal@vishalk17:~/vishal/vish$ sudo rm -rf /etc/mysql/mysql.cnf /etc/logrotate.d/jenkins /home/vishal/fluentd/ena
ble
vishal@vishalk17:~/vishal/vish$ sudo ls /etc/mysql/mysql.cnf /etc/logrotate.d/jenkins /home/vishal/fluentd/enable
ls: cannot access '/etc/mysql/mysql.cnf': No such file or directory
ls: cannot access '/etc/logrotate.d/jenkins': No such file or directory
ls: cannot access '/home/vishal/fluentd/enable': No such file or directory
vishal@vishalk17:~/vishal/vish$
```

```
vishal@vishalk17:~/vishal/vish$ ls
config_backup_restore.sh  etc  home  ownership.txt
vishal@vishalk17:~/vishal/vish$
vishal@vishalk17:~/vishal/vish$ sudo bash config_backup_restore.sh
Menu:
1. Update repository with local configuration files
2. Pull updates from repository and apply to system paths
3. Exit
Enter your choice [1-3]: 2
Pulling latest updates from branch vishalk17-server...
Username for 'https://github.com': vishalk17
Password for 'https://vishalk17@github.com':
From https://github.com/vishalk17/ntcarfte-config
 * branch            vishalk17-server -> FETCH_HEAD
Already up to date.
Apply updated files now? [y/n]: y
Applying updates...
Script Completed.
vishal@vishalk17:~/vishal/vish$ []
```

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Verify :

```
vishal@vishalk17:~/vishal/vish$ sudo ls /etc/mysql/mysql.cnf /etc/logrotate.d/jenkins /home/vishal/fluentd/enable
/etc/logrotate.d/jenkins  /etc/mysql/mysql.cnf  /home/vishal/fluentd/enable
vishal@vishalk17:~/vishal/vish$ sudo ls -ltrs /etc/mysql/mysql.cnf /etc/logrotate.d/jenkins /home/vishal/fluentd/e
nable
4 -rw-r--r-- 1 root   root   682 Jun 15  2023 /etc/mysql/mysql.cnf
4 -rwxrwxr-x 1 vishal vishal 789 Sep  2  2023 /home/vishal/fluentd/enable
4 -rw-r--r-- 1 root   root   191 Mar 20 20:30 /etc/logrotate.d/jenkins
vishal@vishalk17:~/vishal/vish$ 
```

Conclusion : Files Successfully restored with their group , user and permissions

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