

# Git & Shell Scripting Exercises

## Exercise 1: proj2 – Script with multiple modifications and Git commits

```
mkdir proj2
cd proj2
nano script1.sh

# script1.sh (first version)
#!/bin/bash
echo "Welcome to the World of Linux"

chmod +x script1.sh
./script1.sh

git init
git add script1.sh
git commit -m "Initial commit - Welcome message script"

# Modify script (even/odd check)
#!/bin/bash
echo "Welcome to the World of Linux"
read -p "Enter a number: " num
if (( num % 2 == 0 )); then
    echo "The number is Even"
else
    echo "The number is Odd"
fi

git add script1.sh
git commit -m "Added even/odd number check"

# Modify script (invalid input check)
#!/bin/bash
echo "Welcome to the World of Linux"
read -p "Enter a number: " num
if (( num <= 0 )); then
    echo "Invalid Input"
elif (( num % 2 == 0 )); then
    echo "The number is Even"
else
    echo "The number is Odd"
fi

git commit -am "Added invalid input check"

# Modify script (>20 check)
if (( num > 20 )); then
    echo "The number entered is greater than 20"
else
    echo "The number entered is less than 20"
fi

git commit -am "Added >20 check"

# Rollback
git log --oneline
git checkout <commit_id> -- script1.sh
git commit -am "Reverted script to remove >20 check"
```

## Exercise 2: GitHub Repo – factorial script

```
# factorial.sh
#!/bin/bash
read -p "Enter a positive number: " num
if (( num <= 0 )); then
    echo "Invalid input. Enter positive number only."
    exit 1
```

```

fi
fact=1
for ((i=1; i<=num; i++)); do
    fact=$((fact * i))
done
echo "Factorial of $num is $fact"

# Commit & push
git add factorial.sh
git commit -m "Added input validation"
git push origin main

```

### Exercise 3: project1 – word search script

```

# script1.sh
#!/bin/bash
read -p "Enter filename: " fname
read -p "Enter word to search: " word

if [[ -f "$fname" ]]; then
    if grep -q "$word" "$fname"; then
        grep "$word" "$fname"
    else
        echo "File does not contain the given word"
    fi
else
    echo "File does not exist"
fi

# .gitignore
project-info.txt

git add script1.sh .gitignore
git commit -m "Added file existence check"
git push origin main

```

### Exercise 4: Git Merge Conflict (linux1 repo)

```

# Final script after conflict resolution
#!/bin/bash
read -p "Enter a file name (Provide full path): " fname
echo "Options:"
echo "1. Scroll through the file - Both direction only"
echo "2. Scroll through the file - One direction only"
echo "3. Display first 10 lines"
echo "4. Display last 10 lines"

read -p "Enter choice: " choice
case $choice in
    1) cat "$fname" | less ;;
    2) cat "$fname" | more ;;
    3) head -n 10 "$fname" ;;
    4) tail -n 10 "$fname" ;;
    *) echo "Invalid choice" ;;
esac

# Commit & push after resolving conflicts
git add script.sh
git commit -m "Resolved merge conflict and finalized script"
git push origin main

```