ASSIGNMENT -6(DAY 5&6)

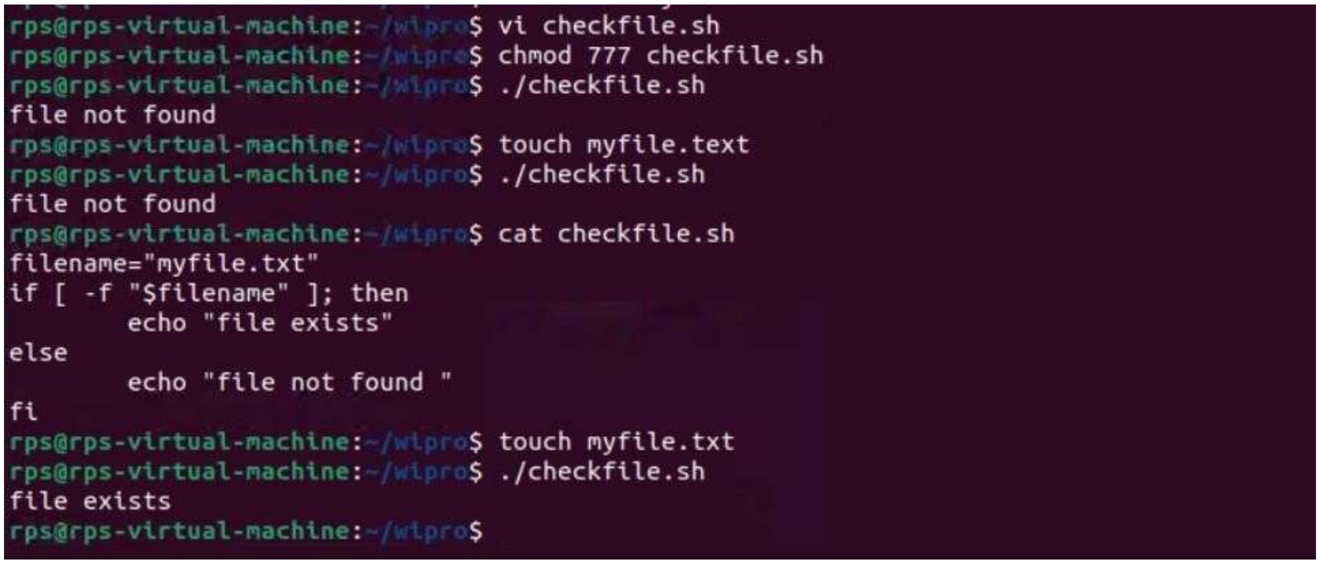
LINUX TOPIC

Assignment 1: Ensure the script checks if a specific file (e.g., myfile.txt) exists in the current directory. If it exists, print "File exists", otherwise print "File not found".

Solution:

```
#!/bin/bash

filename="myfile.txt"

if [ -f "$filename" ]; then

echo   "File   exists"   else

echo "File not found" fi
```

Output:



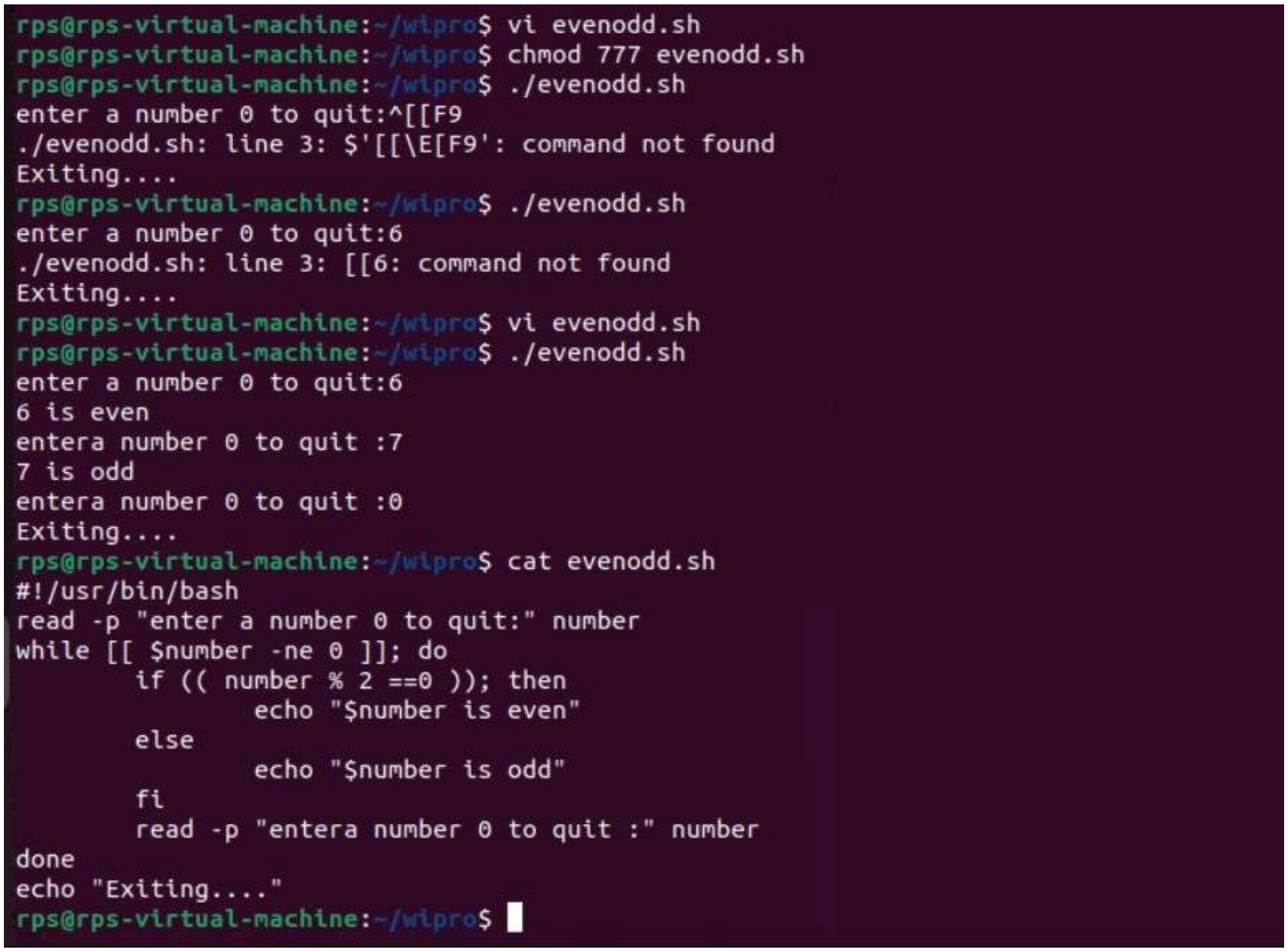
```
rps@rps-virtual-machine:~/wipro$ vi checkfile.sh
rps@rps-virtual-machine:~/wipro$ chmod 777 checkfile.sh
rps@rps-virtual-machine:~/wipro$ ./checkfile.sh
file not found
rps@rps-virtual-machine:~/wipro$ touch myfile.text
rps@rps-virtual-machine:~/wipro$ ./checkfile.sh
file not found
rps@rps-virtual-machine:~/wipro$ cat checkfile.sh
filename="myfile.txt"
if [ -f "$filename" ]; then
        echo "file exists"
else
        echo "file not found "
fi
rps@rps-virtual-machine:~/wipro$ touch myfile.txt
rps@rps-virtual-machine:~/wipro$ ./checkfile.sh
file exists
rps@rps-virtual-machine:~/wipro$
```

Assignment 2: Write a script that reads numbers from the user until they enter '0'. The script should also print whether each number is odd or even.

```
#!/bin/bash

read -p "Enter a number 0 to quit: " number

while  [[  $number -ne 0 ]]; do

  # Check if the number is even using modulo operator (%)

if  (( number % 2 == 0 ));  then
```

```
echo "$number is even"

  else
    echo "$number is odd"

  fi

  read -p "Enter a number (0 to quit): " number

done

echo "Exiting..." output
```

output :



```
rps@rps-virtual-machine:~/wipro$ vi evenodd.sh
rps@rps-virtual-machine:~/wipro$ chmod 777 evenodd.sh
rps@rps-virtual-machine:~/wipro$ ./evenodd.sh
enter a number 0 to quit:^[[F9
./evenodd.sh: line 3: $'[[\E[F9': command not found
Exiting....
rps@rps-virtual-machine:~/wipro$ ./evenodd.sh
enter a number 0 to quit:6
./evenodd.sh: line 3: [[6: command not found
Exiting....
rps@rps-virtual-machine:~/wipro$ vi evenodd.sh
rps@rps-virtual-machine:~/wipro$ ./evenodd.sh
enter a number 0 to quit:6
6 is even
entera number 0 to quit :7
7 is odd
entera number 0 to quit :0
Exiting....
rps@rps-virtual-machine:~/wipro$ cat evenodd.sh
#!/usr/bin/bash
read -p "enter a number 0 to quit:" number
while [[ $number -ne 0 ]]; do
        if (( number % 2 ==0 )); then
                echo "$number is even"
        else
                echo "$number is odd"
        fi
        read -p "entera number 0 to quit :" number
done
echo "Exiting...."
rps@rps-virtual-machine:~/wipro$
```

Assignment 3: Create a function that takes a filename as an argument and prints the number of lines in the file. Call this function from your script with different filenames.

Solution:

```
#!/bin/bash

function count_lines {

filename="$1"
```

```
 if     [     -f     "$filename"     ];     then
line_count=$(wc -l < "$filename")
 echo  "$filename  has  $line_count  lines."
else
    echo "File '$filename' not found."
  fi
}
count_lines "myfile.txt" count_lines
"change_file.txt"
```

Assignment 4: Write a script that creates a directory named TestDir and inside it, creates ten files named File1.txt, File2.txt, ... File10.txt. Each file should contain its filename as its content (e.g., File1.txt contains "File1.txt").

Solution:

```
 #!/bin/bash
dir_name="TestDir" num_files=10
if [ ! -d "$dir_name" ];
then   mkdir -p "$dir_name" || {
 echo "Error creating directory '$dir_name'"; exit 1;
}
 fi
for i in $(seq 1 $num_files); do
filename="File$i.txt"
filepath="$dir_name/$filename"
  # Create the file and write content (redirect to avoid overwriting)
echo "$filename" > "$filepath" || {
echo "Error creating file '$filepath'"; exit 1;
}
done
```

```
echo "Created directory '$dir_name' with $num_files files."
```

Assignment 5: Modify the script to handle errors, such as the directory already existing or lacking permissions to create files.Add a debugging mode that prints additional information when enabled.

Solution:

```
#!/bin/bash #

Directory name

dir_name="TestDir"

# Number of files

num_files=10

# Enable debugging mode (set to true for additional info) debug_mode=false

# Function to print debug message function

debug_print {

  if [[ "$debug_mode" == true ]]; then

echo "[DEBUG] $1"

  fi

}

# Check if directory already exists (informative message)

if [ -d "$dir_name" ]; then

 echo "Directory '$dir_name'

already exists.

Skipping creation."

 exit 0

 fi

# Create the directory (handle errors)

debug_print "Creating directory: $dir_name"

 if ! mkdir -p "$dir_name";

then

  echo "Error: Insufficient permissions to create directory '$dir_name'."

exit 1
```

```
fi

# Loop to create files with unique content for

i in $(seq 1 $num_files);

 do   filename="File$i.txt"

filepath="$dir_name/$filename"

  # Create the file and write content (redirect to avoid overwriting)

debug_print "Creating file: $filepath"

  if ! echo "$filename" > "$filepath"; then

 echo "Error creating file '$filepath'."

 exit 1

fi

done echo "Created directory '$dir_name' with $num_files

files.
```

Assignment 6: Given a sample log file, write a script using grep to extract all lines containing "ERROR". Use awk to print the date, time, and error message of each extracted line.Data Processing with sed

Solution:

```
#!/bin/bash

# Define the log file path

log_file="sample.log"

# Use grep to extract lines containing "ERROR" and then use awk to print date, time, and error message grep

"ERROR" "$log_file" | awk '{print $1, $2, substr($0, index($0,$4))}'
```

Explanation:

- grep "ERROR" "$log_file": This command searches for lines containing "ERROR" in the specified log file.
- awk '{print $1, $2, substr($0, index($0,$4))}': This awk command is used to extract the date, time, and error message from each line containing "ERROR".
- $1 and $2 represent the first and second fields, which are the date and time.
- substr($0, index($0,$4)) extracts the error message starting from the fourth field (which is the timestamp). This ensures that even if the error message contains spaces, it is printed entirely.

Assignment 7: Create a script that takes a text file and replaces all occurrences of "old_text" with "new_text". Use sed to perform this operation and output the result to a new file.

Solution:

```
#!/bin/bash.

# Get the old and new text from the user.

echo "Enter the old text to be replaced:"

read old_text echo "Enter the new text:"

read new_text


# Get the input and output file names from the user.

echo "Enter the input file name:"

read input_file

echo "Enter the output file name:" read

output_file


# Replace all occurrences of "old_text" with "new_text" in the input file and output the result to the output
file.

sed "s/$old_text/$new_text/g" $input_file > $output_file


# Print a message to the user.

echo "The replacement is complete. The output file is $output_file."
```