Subject: Operating system concepts using Unix/Linux

1. Write a script to extract and save system information into a file.

```
GNU nano 4.8

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echo "System Information"
    echo "Hostname: $(hostname)"
    echo "OS: $(uname -o)"
    echo "Uptime : $(uptime -p)"
    echo "Uptime : $(uptime -p)"
    echo "Memory Usage:"
    free -h
    echo "Disk Usage:"
    df -h
} > system_info.txt

echo "System information saved."

navdip@LAPTOP-0N09VP88:/mnt/c/users/navdip/documents/NAVDIP$ bash n6.sh
System information saved.
navdip@LAPTOP-0N09VP88:/mnt/c/users/navdip/documents/NAVDIP$
```

2. Write a script creates a directory, navigates into it, generates three test files, lists the files while saving the output to file_list.txt, and counts and displays the number of files.

```
GNU nano 4.8

mkdir test_dir

cd test_dir | exit

touch file1.txt file2.txt file3.txt

ls > file_list.txt

file_count=$(ls | wc -l)

echo "Number of files: $file_count"

echo "File count saved."

navdip@LAPTOP-0N09VP88:/mnt/c/users/navdip/documents/NAVDIP$ bash n7.sh

Number of files: 4

File count saved.

navdip@LAPTOP-0N09VP88:/mnt/c/users/navdip/documents/NAVDIP$
```

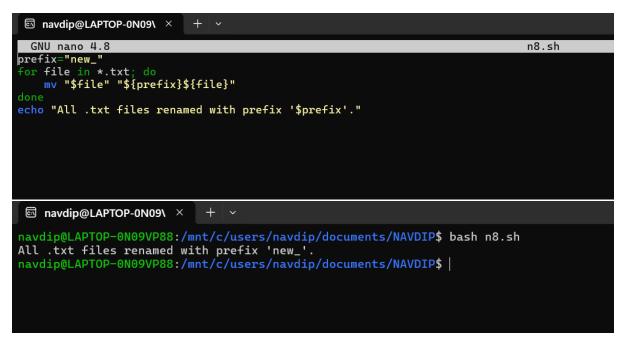
3. Write a script creates a sample log file, counts occurrences of "Error," and then saves and displays the result.

```
GNU nano 4.8
| cho -e "Info: System started\nWarning: Low memory\nError: Disk failure\nError: Network issue\nInfo: Update completed" > logfile.log
| grep -c "Error" logfile.log > error_count.txt
| echo "Error occurrences: $(cat error_count.txt)"

| navdip@LAPTOP-0N09VP88:/mnt/c/users/navdip/documents/NAVDIP$ | bash n7.sh
| Error occurrences: 2
| navdip@LAPTOP-0N09VP88:/mnt/c/users/navdip/documents/NAVDIP$ |
```

4. Write script verifies if a file exists, displays its content if available, or creates a new file if it is missing.

5. The script renames all .txt files in a directory by adding a specified prefix to their filenames.



6. Write a script that scans the current directory, categorizes files into Documents, Images, Videos, or Others using a case statement based on file extensions, and moves them into their respective folders for better organization.

```
GNU nano 4.8
mkdir -p Documents Images Videos Others

for file in *; do
    case "$file" in
        *.txt) mv "$file" documents/;;
        *.sh) mv "$file" script/;;
        esac

done
echo "Files categorized and moved."

Image: Manage: Mana
```

7. Write a script that defines an array of names and uses a function to print each name.