Assignment 1

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ECE

Solutions:

Q1.

```
(base) navneetyadav@Navneets-MacBook-Air OS_labs % cat cat.txt

Hello!!
This side Navneet Yadav
This is cat file.%
(base) navneetyadav@Navneets-MacBook-Air OS_labs % cat cat_test_file.txt

Hello!!
This side Navneet Yadav
This is cat file.%
(base) navneetyadav@Navneets-MacBook-Air OS_labs % chmod cat_test_file.txt
usage:  chmod [-fhv] [-R [-H | -L | -P]] [-a | +a | =a  [i][# [ n]]] mode|entry file ...
        chmod [-fhv] [-R [-H | -L | -P]] [-E | -C | -N | -i | -I] file ...
(base) navneetyadav@Navneets-MacBook-Air OS_labs % cd ..
(base) navneetyadav@Navneets-MacBook-Air Desktop % cd OS_labs
(base) navneetyadav@Navneets-MacBook-Air OS_labs % touch cat_file_copy.txt
```

```
(base) navneetyadav@Navneets-MacBook-Air OS_labs % cp cat_test_file.txt cat_file_copy.txt
(base) navneetyadav@Navneets-MacBook-Air OS_labs % cat cat_file_copy.txt
Hello!!
This side Navneet Yadav
This is cat file%
(base) navneetyadav@Navneets-MacBook-Air OS_labs % cat cat_test_file.txt
Hello!!
This side Navneet Yadav
This is cat file%
```

```
(base) navneetyadav@Navneets-MacBook-Air OS_labs % date
Mon Jan 27 10:54:19 IST 2025
(base) navneetyadav@Navneets-MacBook-Air OS_labs % echo 'Hello World'
Hello World
(base) navneetyadav@Navneets-MacBook-Air OS_labs % grep Hello cat_test_file.txt
Hello!!
(base) navneetyadav@Navneets-MacBook-Air OS_labs %
```

```
(base) navneetyadav@Navneets-MacBook-Air OS_labs % head -n 1 cat_test_file.txt
Hello!!
(base) navneetyadav@Navneets-MacBook-Air OS_labs % head -n 2 cat_test_file.txt
Hello!!
This side Navneet Yadav
(base) navneetyadav@Navneets-MacBook-Air OS_labs % ls
cat_file_copy.txt        cat_test_file.txt
(base) navneetyadav@Navneets-MacBook-Air OS_labs % lpr cat_test_file.txt
(base) navneetyadav@Navneets-MacBook-Air OS_labs % more cat_test_file.txt
Hello!!
This side Navneet Yadav
This is cat file
```

```
(base) navneetyadav@Navneets-MacBook-Air OS_labs % ipconfig getifaddr en0
172.31.70.12
(base) navneetyadav@Navneets-MacBook-Air OS_labs % sftp 172.31.70.12
ssh: connect to host 172.31.70.12 port 22: Connection refused
Connection closed
```

```
(base) navneetyadav@Navneets-MacBook-Air OS_labs % mkdir new
(base) navneetyadav@Navneets-MacBook-Air OS_labs % touch temp.txt
(base) navneetyadav@Navneets-MacBook-Air OS_labs % mv temp.txt new
(base) navneetyadav@Navneets-MacBook-Air OS_labs % ls
cat_file_copy.txt        cat_test_file.txt        new
(base) navneetyadav@Navneets-MacBook-Air OS_labs % cd new
(base) navneetyadav@Navneets-MacBook-Air new % ls
temp.txt
```

```
(base) navneetyadav@Navneets-MacBook-Air OS_labs % touch temp_1.txt
(base) navneetyadav@Navneets-MacBook-Air OS_labs % ls
cat_file_copy.txt        cat_test_file.txt        new                temp_1.txt
(base) navneetyadav@Navneets-MacBook-Air OS_labs % rm temp_1.txt
(base) navneetyadav@Navneets-MacBook-Air OS_labs % rmdir new
(base) navneetyadav@Navneets-MacBook-Air OS_labs % ls
cat_file_copy.txt        cat_test_file.txt
```

```
(base) navneetyadav@Navneets-MacBook-Air OS_labs % sort cat_test_file.txt
Hello!!
This is cat file
This side Navneet Yadav
(base) navneetyadav@Navneets-MacBook-Air OS_labs % tail -n 1 cat_test_file.txt
This is cat file
(base) navneetyadav@Navneets-MacBook-Air OS_labs % tail -n 2 cat_test_file.txt
This side Navneet Yadav
This is cat file
(base) navneetyadav@Navneets-MacBook-Air OS_labs % tar -cvf example.tar cat_file_copy.txt cat_test_file.txt
a cat_file_copy.txt
a cat_test_file.txt
(base) navneetyadav@Navneets-MacBook-Air OS_labs % wc cat_test_file.txt
       2       9      48 cat_test_file.txt
```

Q2.

```bash
# to check number is even or odd

echo "Enter a number:"
read number

# Check if the number is even or odd
if [ $((number % 2)) -eq 0 ]; then
    echo "The number $number is even."
else
    echo "The number $number is odd."
fi
```

```
(base) navneetyadav@Navneets-MacBook-Air OS_labs % ./q2_even_odd.sh
Enter a number:
3
The number 3 is odd.
(base) navneetyadav@Navneets-MacBook-Air OS_labs % ./q2_even_odd.sh
Enter a number:
2
The number 2 is even.
```

Q3.

```bash
# To check Leap Year

echo "Enter a year:"
read year

# Check if the year is a leap year
if (( year % 400 == 0 )); then
    echo "$year is a leap year."
elif (( year % 100 == 0 )); then
    echo "$year is not a leap year."
elif (( year % 4 == 0 )); then
    echo "$year is a leap year."
else
    echo "$year is not a leap year."
fi
```

```
(base) navneetyadav@Navneets-MacBook-Air OS_labs % ./q3_leap_year_check.sh
Enter a year:
2000
2000 is a leap year.
(base) navneetyadav@Navneets-MacBook-Air OS_labs % ./q3_leap_year_check.sh
Enter a year:
2023
2023 is not a leap year.
```

Q4.

```bash
# swap two integers
echo "Enter the first integer:"
read num1
echo "Enter the second integer:"
read num2

# Display the original values
echo "Before swapping: num1 = $num1, num2 = $num2"

# Swap the numbers using a temporary variable
temp=$num1
num1=$num2
num2=$temp

# Display after swapping
echo "After swapping: num1 = $num1, num2 = $num2"
```

```
(base) navneetyadav@Navneets-MacBook-Air OS_labs % ./q4_swap.sh
Enter the first integer:
2
Enter the second integer:
5
Before swapping: num1 = 2, num2 = 5
After swapping: num1 = 5, num2 = 2
```

Q5.

```bash
# Sum of digits

echo "Enter a number:"
read number

sum=0

while [ $number -gt 0 ]; do
    # Extract the last digit
    digit=$((number % 10))
    # Add the digit to the sum
    sum=$((sum + digit))
    # Remove the last digit34
    number=$((number / 10))
done

# Display the result
echo "The sum of digits is: $sum"
```

```
(base) navneetyadav@Navneets-MacBook-Air OS_labs % ./q5_sum.sh
Enter a number:
23
The sum of digits is: 5
```