



**Usman Institute of Technology**  
**Department of Computer Science Fall 2022**

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Roll no: 20B-115-SE

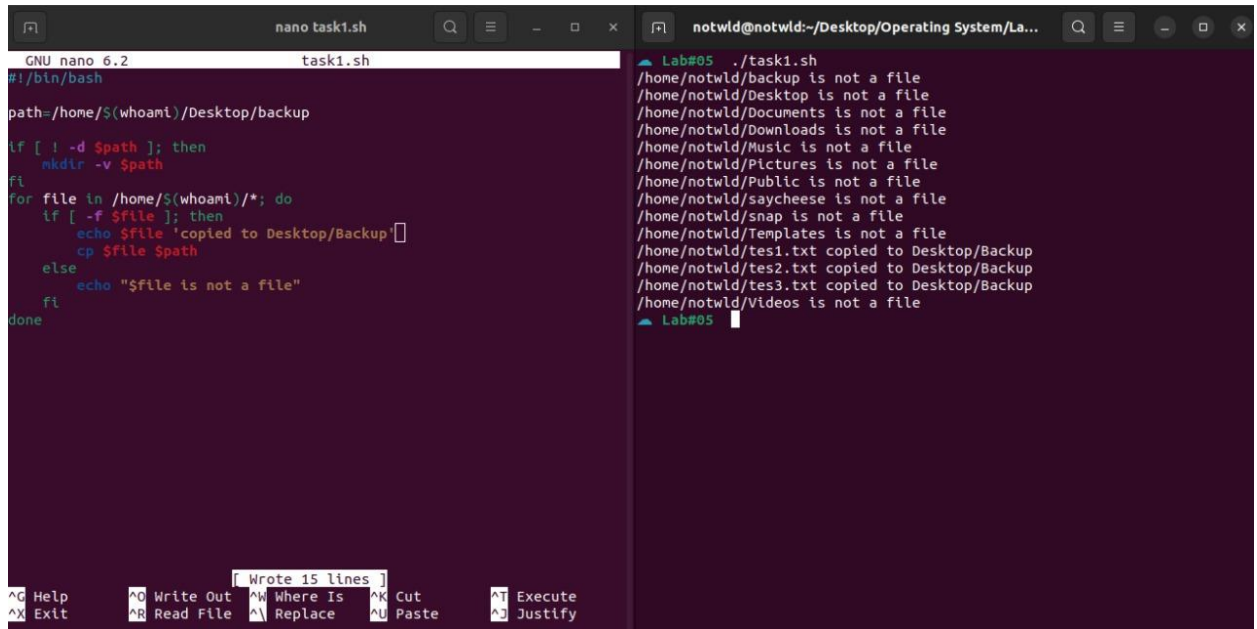
Course: Operating Systems (CS312)

Course Instructor: Ma'am Shabina Mushtaq

Date: 10-Nov-2022

## Lab Tasks:

1. Write a script that creates a backup version of each file in your home directory to a subdirectory called backup using for statement. If the operation fails an error message is to be displayed.

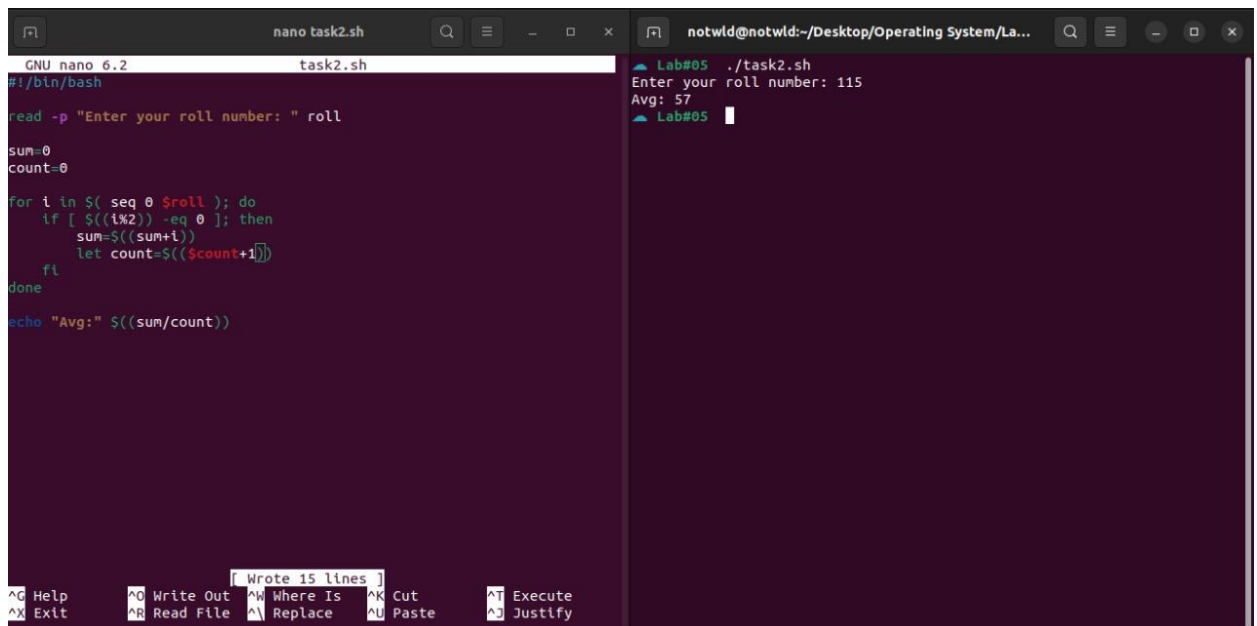


The screenshot shows a terminal window with two panes. The left pane is a nano editor editing a file named 'task1.sh'. The script is as follows:

```
#!/bin/bash
path=/home/$whoami/Desktop/backup
if [ ! -d $path ]; then
    mkdir -v $path
fi
for file in /home/$whoami/*; do
    if [ -f $file ]; then
        echo $file 'copied to Desktop/Backup'
        cp $file $path
    else
        echo "$file is not a file"
    fi
done
```

The right pane shows the output of running the script: `Lab#05 ./task1.sh`. The output lists various directories in the home directory that are not files (e.g., /home/notwld/Desktop, /home/notwld/Documents, etc.) and then shows three files being copied to the backup directory: /home/notwld/tes1.txt, /home/notwld/tes2.txt, and /home/notwld/tes3.txt.

2. Write a script that calculates the average of all even numbers less than or equal to your roll number and prints the result.



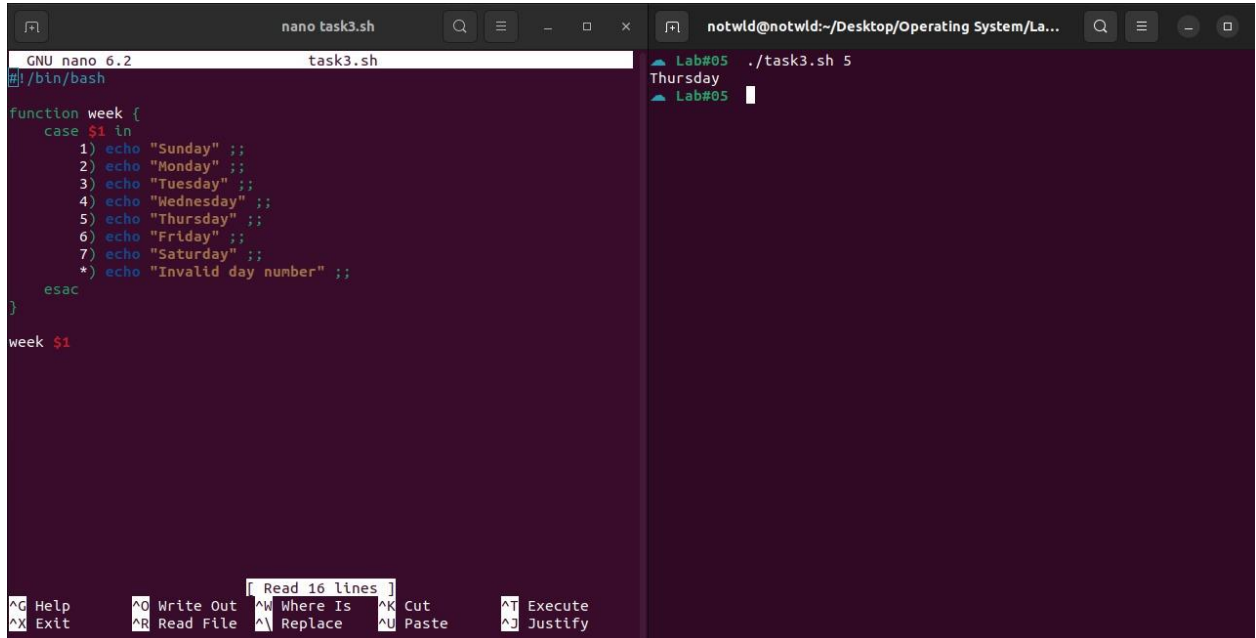
The screenshot shows a terminal window with two panes. The left pane is a nano editor editing a file named 'task2.sh'. The script is as follows:

```
#!/bin/bash
read -p "Enter your roll number: " roll
sum=0
count=0
for i in $( seq 0 $roll ); do
    if [ $((i%2)) -eq 0 ]; then
        sum=$((sum+i))
        let count=$((count+1))
    fi
done
echo "Avg: " $((sum/count))
```

The right pane shows the output of running the script: `Lab#05 ./task2.sh`. It prompts the user to enter a roll number (115) and then displays the calculated average: `Avg: 57`.

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20b-115-se  
Operating Systems  
Lab#05

- Write a function that displays the name of the week days starting from Sunday if the user passes a day number. If a number provided is not between 1 and 7 an error message is displayed.



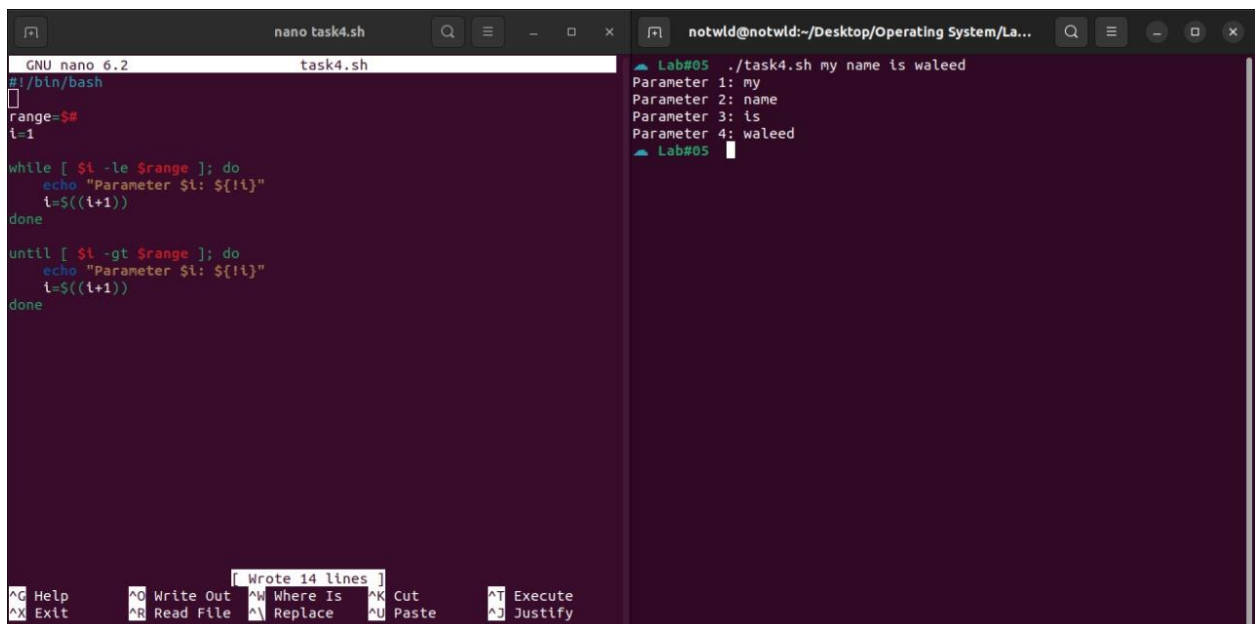
```
GNU nano 6.2 task3.sh
#!/bin/bash

function week {
    case $1 in
        1) echo "Sunday" ;;
        2) echo "Monday" ;;
        3) echo "Tuesday" ;;
        4) echo "Wednesday" ;;
        5) echo "Thursday" ;;
        6) echo "Friday" ;;
        7) echo "Saturday" ;;
        *) echo "Invalid day number" ;;
    esac
}

week $1

Lab#05 ./task3.sh 5
Thursday
Lab#05
```

- Write scripts that displays the parameters passed along with the parameter number using while and until statements.



```
GNU nano 6.2 task4.sh
#!/bin/bash

range=$#
i=1

while [ $i -le $range ]; do
    echo "Parameter $i: ${!i}"
    i=$((i+1))
done

until [ $i -gt $range ]; do
    echo "Parameter $i: ${!i}"
    i=$((i+1))
done

Lab#05 ./task4.sh my name is waleed
Parameter 1: my
Parameter 2: name
Parameter 3: is
Parameter 4: waleed
Lab#05
```