Task 1

Write a shell script that takes three numbers as command-line arguments and:
Finds the largest number.
Prints a message like:
"The largest number among A, B, and C is X."

```
  GNU nano 8.4
#!/bin/bash

if [ $1 -gt $2 ]; then
        if [ $1 -gt $3 ]; then
                echo "The largest number among $1, $2, and $3 is $1"
        else
                echo "The largest number among $1, $2, and $3 is $3"
        fi
else
        if [ $2 -gt $3 ]; then
                echo "The largest number among $1, $2, and $3 is $2"
        else
                echo "The largest number among $1, $2, and $3 is $3"
        fi
fi
```

```
ubuntu@ubuntu:~/Documents/OS-Work/Lab-3$ ./largest.sh 10 5 2
The largest number among 10, 5, and 2 is 10
ubuntu@ubuntu:~/Documents/OS-Work/Lab-3$ ./largest.sh 10 5 20
The largest number among 10, 5, and 20 is 20
ubuntu@ubuntu:~/Documents/OS-Work/Lab-3$ ./largest.sh 10 50 20
The largest number among 10, 50, and 20 is 50
ubuntu@ubuntu:~/Documents/OS-Work/Lab-3$
```

Task 2

Write a shell script that:
Accepts a filename as a command-line argument.
Checks if the file exists.
If it exists, display the total number of lines and characters.
If not, print: "File does not exist."

```
  GNU nano 8.4
#!/bin/bash


if [ $# -ne 1 ]; then
        echo "Please specify filename in arguments"
        echo "Usage: $0 <filename>"
        exit 1
fi

filename="$1"

if [ -f "$filename" ]; then
        lines=$(wc -l < "$filename")
        chars=$(wc -c < "$filename")

        echo "File "$filename" detected"
        echo "Total lines: $lines"
        echo "Total characters: $chars"
else
        echo "File does not exist"
fi
```

```
  GNU nano 8.4
hello
world
does
this
work?
```

```
talha@Ubuntu:~/Documents/OS-Work/Lab-3$ nano filexists.sh
talha@Ubuntu:~/Documents/OS-Work/Lab-3$ chmod +x filexists.sh
talha@Ubuntu:~/Documents/OS-Work/Lab-3$ ./filexists.sh
Please specify filename in arguments
Usage: ./filexists.sh <filename>
talha@Ubuntu:~/Documents/OS-Work/Lab-3$ ./filexists.sh hello.txt
File does not exist
talha@Ubuntu:~/Documents/OS-Work/Lab-3$ nano hello.txt
talha@Ubuntu:~/Documents/OS-Work/Lab-3$ ./filexists.sh hello.txt
File hello.txt detected
Total lines: 6
Total characters: 29
talha@Ubuntu:~/Documents/OS-Work/Lab-3$
```

Task 3

Write a shell script that:
Accepts a directory path.
Lists only the hidden files in that directory.
Prints the total number of hidden files.

```
  GNU nano 8.4
#!/bin/bash


if [ $# -ne 1 ]; then
        echo "No directory specified"
        echo "Usage: $0 <directory_path>"
        exit 1
fi

dir="$1"

if [ -d "$dir" ]; then
        echo "Hidden files in $dir"

        hidden_files=$(ls -A "$dir" | grep '^\.')

        echo "$hidden_files"

        count=$(ls -A "$dir" | grep '^\.' | wc -l)

        echo "Total hidden files detected: $count"

else

        echo "Directory doesn't exist"
fi
```

```
talha@Ubuntu:~/Documents/OS-Work/Lab-3$ nano hidden.sh
talha@Ubuntu:~/Documents/OS-Work/Lab-3$ chmod +x hidden.sh
talha@Ubuntu:~/Documents/OS-Work/Lab-3$ ./hidden.sh
No directory specified
Usage: ./hidden.sh <directory_path>
talha@Ubuntu:~/Documents/OS-Work/Lab-3$ ./hidden.sh power
Directory doesn't exist
talha@Ubuntu:~/Documents/OS-Work/Lab-3$ mkdir power
talha@Ubuntu:~/Documents/OS-Work/Lab-3$ ./hidden.sh power
Hidden files in power

Total hidden files detected: 0
talha@Ubuntu:~/Documents/OS-Work/Lab-3$ cd power
talha@Ubuntu:~/Documents/OS-Work/Lab-3/power$ nano .hello.txt
talha@Ubuntu:~/Documents/OS-Work/Lab-3/power$ ls
talha@Ubuntu:~/Documents/OS-Work/Lab-3/power$ cd ..
talha@Ubuntu:~/Documents/OS-Work/Lab-3$ ./hidden.sh power
Hidden files in power
.hello.txt
Total hidden files detected: 1
talha@Ubuntu:~/Documents/OS-Work/Lab-3$
```

Task 4

Write a shell script that:
Accepts a number
Checks whether it is even or odd.
Display: "The number X is even." OR "The number X is odd."

```
  GNU nano 8.4
#!/bin/bash

if [ $# -ne 1 ]; then
        echo "Please specify a number"
        echo "Usage: $0 <number>"
        exit 1
fi

num=$1

if (( num % 2 == 0 )); then
        echo "Even"
else
        echo "Odd"
fi
```

```
talha@Ubuntu:~/Documents/OS-Work/Lab-3$ nano evenodd.sh
talha@Ubuntu:~/Documents/OS-Work/Lab-3$ chmod +x evenodd.sh
talha@Ubuntu:~/Documents/OS-Work/Lab-3$ ./evenodd.sh
Please specify a number
Usage: ./evenodd.sh <number>
talha@Ubuntu:~/Documents/OS-Work/Lab-3$ ./evenodd.sh 25
Odd
talha@Ubuntu:~/Documents/OS-Work/Lab-3$ ./evenodd.sh 36
Even
talha@Ubuntu:~/Documents/OS-Work/Lab-3$
```

Task 5

Write a Bash script to back up a project folder. The script should:
1) Accept the path of the folder as an argument.
2) Copy all files into a backup folder named project_backup_<current_date>.
3) Display how many files were backed up.
4) Print a success message after the backup is complete.

```
  GNU nano 8.4
#!/bin/bash


if [ $# -ne 1 ]; then
        echo "Usage: $0 <project-directory>"
        exit 1
fi


project_dir="$1"

if [ ! -d "$project_dir" ]; then
        echo "Directory does not exist."
        exit 1
fi

date=$(date +"%Y-%m-%d")
backup_dir="project_backup_$date"

mkdir "$backup_dir"

cp -r "$project_dir"/* "$backup_dir"

count=$(find "$backup_dir" -type f | wc -l)

echo "Backup completed successfully."
echo "Total files backed up: $count"
```

```
talha@Ubuntu:~/Documents/OS-Work/Lab-3$ nano backup.sh
talha@Ubuntu:~/Documents/OS-Work/Lab-3$ chmod +x backup.sh
talha@Ubuntu:~/Documents/OS-Work/Lab-3$ ./backup.sh
Usage: ./backup.sh <project-directory>
talha@Ubuntu:~/Documents/OS-Work/Lab-3$ ./backup.sh not-a-dir
Directory does not exist.
talha@Ubuntu:~/Documents/OS-Work/Lab-3$ ls /project
ls: cannot access '/project': No such file or directory
talha@Ubuntu:~/Documents/OS-Work/Lab-3$ ls project
hello.txt  world.txt
talha@Ubuntu:~/Documents/OS-Work/Lab-3$ cat project/hello.txt
hello world
talha@Ubuntu:~/Documents/OS-Work/Lab-3$ cat project/world.txt
hello world
talha@Ubuntu:~/Documents/OS-Work/Lab-3$ ls
backup.sh  evenodd.sh  filexists.sh  hello.txt  hidden.sh  largest.sh  power  project
talha@Ubuntu:~/Documents/OS-Work/Lab-3$ ./backup.sh project/
Backup completed successfully.
Total files backed up: 2
talha@Ubuntu:~/Documents/OS-Work/Lab-3$ ls
backup.sh   filexists.sh  hidden.sh   power    project_backup_2026-02-07
evenodd.sh  hello.txt     largest.sh  project
talha@Ubuntu:~/Documents/OS-Work/Lab-3$ cd project_backup_2026-02-07/
talha@Ubuntu:~/Documents/OS-Work/Lab-3/project_backup_2026-02-07$ ls
hello.txt  world.txt
talha@Ubuntu:~/Documents/OS-Work/Lab-3/project_backup_2026-02-07$ cat hello.txt world.txt
hello world
hello world
talha@Ubuntu:~/Documents/OS-Work/Lab-3/project_backup_2026-02-07$ success
```