OS LAB 3

23K-0057

Q1.

```bash
#!/bin/bash

# Check if exactly two arguments are provided
if [ $# -ne 2 ]; then
    echo "Usage: $0 <num1> <num2>"
    exit 1
fi

# Multiply the two numbers
result=$(( $1 * $2 ))

# Print the result
echo "The product of $1 and $2 is: $result"

```

```
:~$ gedit q1.sh
:~$ chmod 755 q1.sh
:~$ ./q1.sh 5 7
```

```
The product of 5 and 7 is: 35
```

Q2.

```bash
read -p "Enter sentence: " sentence
vowels=0

for (( i=0; i<${#sentence}; i++ )); do
    letters="${sentence:i:1}"

    if [[ "$letters" =~ [aeiouAEIOU] ]]; then
        ((vowel++))
    fi
done

echo "Vowel count: "$vowel
```

```
Enter sentence: hi this is rija
Vowel count: 5
```

Q3.

```bash
#!/bin/bash

# Prompt user for filename
read -p "Enter filename: " filename

# Check if file exists
if [ -f "$filename" ]; then
    # Append current date and time to the file
    echo "$(date)" >> "$filename"
    echo "Date and time appended to $filename."
else
    echo "File does not exist."
fi

```

```
Enter filename: q2.sh
Date and time appended to q2.sh.
```

Open q2.sh

```
read -p "Enter sentence: " sentence
vowels=0

for (( i=0; i<${#sentence}; i++ )); do
    letters="${sentence:i:1}"

    if [[ "$letters" =~ [aeiouAEIOU] ]]; then
        ((vowel++))
    fi
done

echo "Vowel count: "$vowel

Sat Mar  1 05:10:54 PM PKT 2025
```

Q4.

```
read -p "Enter File or Directory name: " file

if [ -f "$file" ]; then
    echo "'$file' named file found!"
elif [ -d "$file" ]; then
    echo "'$file' named directory found!"
else
    echo "'$file' not found!"
fi

```

```
Enter File or Directory name: q1.sh
'q1.sh' named file found!
```

Q5.

```
#!/bin/bash

if [ -z "$1" ]; then
    echo "Usage: $0 <path_to_directory>"
    exit 1
fi

target_dir="$1"

if [ ! -d "$target_dir" ]; then
    echo "Error: Directory '$target_dir' not found!"
    exit 1
fi

destination="$HOME/saved_copies"

mkdir -p "$destination"

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

backup="$destination/archive_$date"

mkdir -p "$backup"

rsync -a --progress "$target_dir/" "$backup/"
file_count=$(find "$backup" -type f | wc -l)
dir_count=$(find "$backup" -type d | wc -l)
echo "Backup completed successfully!"
echo "Total files: $file_count"
echo "Total directories: $dir_count"
echo "Saved at: $backup"
```

```
Backup completed successfully!
Total files: 24
Total directories: 3
Saved at: /home/oslab/saved_copies/archive_2025-03-01
```