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**Try**



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# Solutions for Lab 2 Activity (Bash)

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## Part 1: grep Tasks

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### 1. Exact Word Search

Find all lines in `sample.txt` containing the exact word `pattern`.

```
grep -w "pattern" sample.txt
```

### 2. Limit Matching Lines

Display the first 3 lines containing the word `log`.

```
grep "log" sample.txt | head -n 3
```

### 3. Pattern File Matching

Search for lines matching patterns from `patterns.txt`.

```
grep -f patterns.txt sample.txt
```

### 4. Count Non-Matching Lines

Count lines not containing `debug`.

```
grep -v "debug" sample.txt | wc -l
```

### 5. Search for Dates

Find lines containing dates in `YYYY-MM-DD` format.

```
grep -E "[0-9]{4}-[0-9]{2}-[0-9]{2}" sample.txt
```

## Part 2: awk Tasks

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### 1. Filter Lines Based on Condition

Print lines where the second field is greater than 50 .

```
awk -F ',' ' $2 > 50 ' data.csv
```

## 2. Add to Field Values

Add 10 to the first field of all lines.

```
awk -F ',' -v OFS=',' '{ $1 = $1 + 10; print }' data.csv
```

## 3. Find Duplicate Lines

Identify duplicate lines.

```
awk '!seen[$0]++ { next } { print }' data.csv
```

## 4. Maximum of Average Values

Compute the maximum of column averages.

```
awk -F ',' 'NR > 1 {  
    sum1 += $1; sum2 += $2; sum3 += $3;  
    count++;  
}  
END {  
    avg1 = sum1 / count;  
    avg2 = sum2 / count;  
    avg3 = sum3 / count;  
    max = (avg1 > avg2 ? avg1 : avg2);  
    max = (max > avg3 ? max : avg3);  
    print max;  
}' data.csv
```

## Part 3: sed Tasks

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### 1. Delete Specific Lines

Remove lines 3 to 5 .

```
sed '3,5d' sample.txt
```

### 2. Replace Word in File

Replace important with lite .

```
sed 's/important/lite/g' sample.txt
```

### 3. Transform Characters

Convert lowercase to uppercase.

```
sed 's/[a-z]/\U&/g' sample.txt > temp.txt
```

OR

```
tr 'a-z' 'A-Z' < sample.txt
```

### 4. Multiple Substitutions

Replace `code` with `coding` and `summary` with `iss`.

```
sed -e 's/code/coding/g' -e 's/summary/iss/g' sample.txt
```

### 5. Extract Specific Lines

Save lines `10` to `20` to a new file.

```
sed -n '10,20p' sample.txt > output.txt
```

### 6. Reverse Line Order

Reverse the line order.

```
sed '1!G;h;$!d' sample.txt
```