

How Bash Processes Command Lines

Problem 1 – Worked Solution

Initial Command Line

```
echo "The number $(( 5-2 ))" > number.txt
```

Step 1 – Tokenisation – Identify Unquoted Metacharacters

```
echo "The number $(( 5-2 ))" > number.txt
```

Step 1 – Tokenisation – Find Words & Operators

```
echo “The number $(( 5-2 ))” > number.txt
```

Step 2 – Command Identification

```
echo "The number $(( 5-2 ))" > number.txt
```

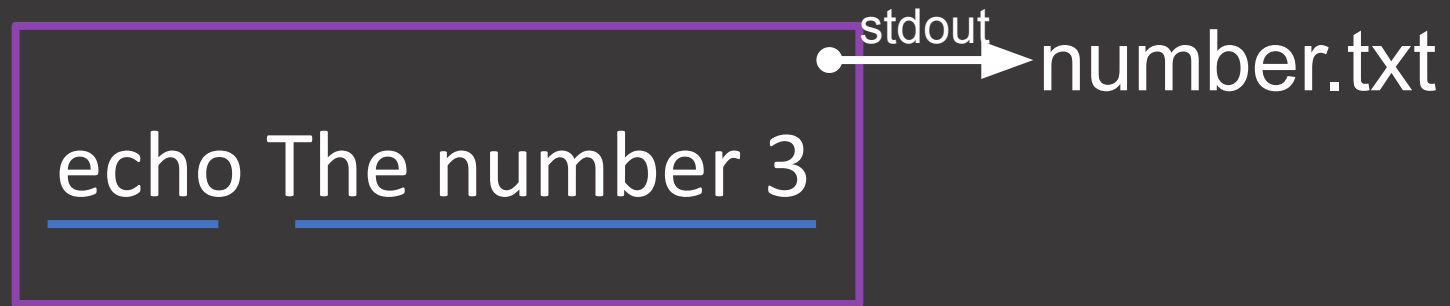
Step 3 – Expansions

```
echo "The number 3" > number.txt
```

Step 4 – Quote Removal

```
echo The number 3 > number.txt
```

Step 5 – Redirections



How Bash Processes Command Lines

Problem 2 – Worked Solution

Initial Command Line

```
ls /etc | grep net > net.txt
```

Step 1 – Tokenisation – Identify Unquoted Metacharacters

```
ls /etc | grep net > net.txt
```

Step 1 – Tokenisation – Find Words & Operators

ls /etc | grep net > net.txt

Step 2 – Command Identification

```
ls /etc | grep net > net.txt
```

Step 3 – Expansions

```
ls /etc | grep net > net.txt
```

There are no expansions to perform

Step 4 – Quote Removal

```
ls /etc | grep net > net.txt
```

There is no quote removal to perform

Step 5 – Redirections

```
ls /etc | grep net > net.txt
```


Step 5 – Redirections



How Bash Processes Command Lines

Problem 3 – Worked Solution

Initial Command Line

```
mkdir $folder && cd $folder && touch $name
```

Step 1 – Tokenisation – Identify Unquoted Metacharacters

mkdir \$folder && cd \$folder && touch \$name

Step 1 – Tokenisation – Find Words & Operators

mkdir \$folder && cd \$folder && touch \$name

Step 2 – Command Identification

```
mkdir $folder && cd $folder && touch $name
```

Step 3 – Expansions – Parameter Expansion

```
mkdir people && cd people && touch john,jane,abhishek
```

Step 3 – Expansions – Word Splitting

mkdir people && cd people && touch john jane abhishek

Step 4 – Quote Removal

```
mkdir people && cd people && touch john jane abhishek
```

There is no quote removal

Step 5 – Redirection

```
mkdir people && cd people && touch john jane abhishek
```

There is no redirection

How Bash Processes Command Lines

Problem 4 – Worked Solution

Initial Command Line

```
touch "Daily Report $(date +"%a %d %h %Y")"
```

Step 1 – Tokenisation – Identify Unquoted Metacharacters

```
touch "Daily Report $(date +%a %d %h %Y)"
```

Step 1 – Tokenisation – Find Words & Operators

touch “Daily Report \$(date +%a %d %h %Y)”

Step 2 – Command Identification

```
touch “Daily Report $(date +%a %d %h %Y)”
```

Step 3 – Expansions – Command Substitution

```
touch "Daily Report 30 Aug 2020"
```


Step 4 – Quote Removal

touch “Daily Report 30 Aug 2020”

There is no quote removal

Step 5 – Redirections

touch “Daily Report 30 Aug 2020”

There is no redirection