How Bash Processes Command Lines

Worked Example 2

In this Video...

- A more complex example…

Let’s Go!

Initial Command Line

```
#!/bin/bash
IFS=“.”
name=“Simon.Smith”
out=“output.txt”

echo “$name” > “~/$out”
```

Step 1: Tokenisation – Identify Unquoted Metacharacters

echo | “$name” > “~/$out”

Step 1: Tokenisation – Find Words and Operators

```
echo “$name” > “~/$out”
```

Step 2: Command Identification

```
echo “$name” > “~/$out”
```

Step 3: Expansions – Brace Expansion (Stage 1)

```
echo “$name” > “~/$out”
```

There are no brace expansions

Step 3: Expansions – Stage 2

```
echo “Simon.Smith” > “~/$out”
```

Step 3: Expansions – Stage 2

```
echo “Simon.Smith” > “~/$out”
```

Step 3: Expansions – Stage 2

```
echo “Simon.Smith” > “~/output.txt”
```

Step 3: Expansions – Stage 3 – Word Splitting

```
echo “Simon.Smith” > “~/output.txt”
```

IFS=“.”

Step 3: Expansions – Stage 3 – Word Splitting

```
echo “Simon.Smith” > ~/output.txt
```

IFS=“.”

Step 3: Expansions – Stage 3 – Word Splitting

```
echo “Simon.Smith” > ~/output txt
```

IFS=“.”

Initial Command Line

echo “$name” > “~/$out”

echo “Simon.Smith” > ~/output.txt

Initial Command Line

```
echo “$name” > ~“/$out”
```

Initial Command Line

```
echo $name > “$HOME/$out”
```

Step 1 – Tokenisation – Identify Unquoted Metacharacters

echo | $name > “$HOME/$out”

Step 1: Tokenisation – Find Words and Operators

```
echo $name > "$HOME/$out"
```

Step 2: Command Identification

```
echo $name > “$HOME/$out”
```

Step 3: Expansions – Stage 2 (Parameter Expansions)

```
echo Simon.Smith > “/home/username/output.txt”
```

Step 3: Expansions – Word Splitting (Stage 3)

```
echo Simon Smith > “/home/username/output.txt”
```

Step 3: Expansions – Globbing (Stage 4)

```
echo Simon Smith > "/home/username/output.txt"
```

There is no globbing

Step 4: Quote Removal

```
echo Simon Smith > "/home/username/output.txt"
```

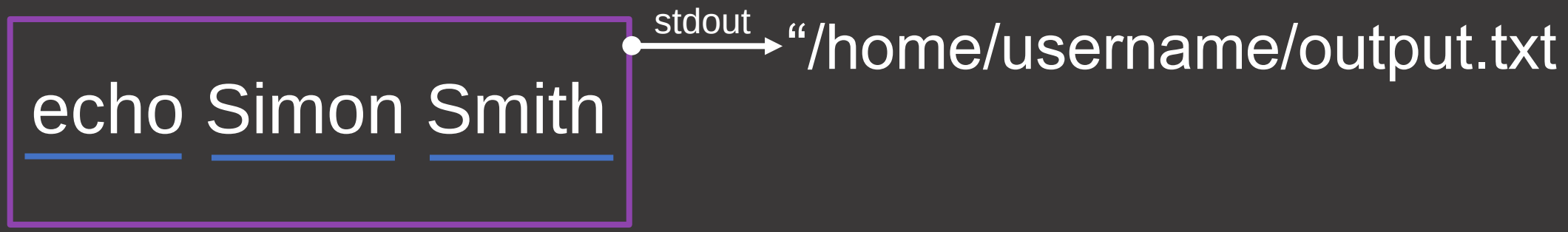
Step 4: Quote Removal

```
echo Simon Smith > /home/username/output.txt
```

Step 5: Redirection

```
echo Simon Smith > /home/username/output.txt
```

Step 5: Redirection



Up Next:

Worked Example 3