

## Objectives

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After watching this video, you will be able to outline the following Bash shell-scripting features:

- Metacharacters
- Quoting
- I/O redirection
- Command substitution
- Command line arguments
- Batch vs. concurrent modes of execution

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## Metacharacters

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# - precedes a comment  
;  
\* - filename expansion wildcard  
? - single character wildcard in filename expansion

```
$ # Some metacharacters  
  
$ echo "Hello"; whoami  
Hello  
ravahuja  
  
$ ls /bin/ba*  
/bin/bash  
$ ls /bin/?ash  
/bin/bash /bin/dash
```

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## Quoting

`\` - escape special character interpretation

`" "` - interpret literally, but evaluate metacharacters

`' '` - interpret literally

```
$ echo "\$1 each"
$1 each
```

```
$ echo "$1 each"
each
```

```
$ echo '$1 each'
$1 each
```

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## I/O redirection

Input/Output, or I/O redirection, refers to a set of features used for redirecting

`>` - Redirect output to file

`>>` - Append output to file

`2>` - Redirect standard error to file

`2>>` - Append standard error to file

`<` - Redirect file contents to standard input

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## I/O redirection examples

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```
$ echo "line1" > eg.txt
$ cat eg.txt
line1
$ echo "line2" >> eg.txt
$ cat eg.txt
line1
line2
```

```
$ garbage
garbage: command
not found
$ garbage 2> err.txt
$ cat err.txt
garbage: command not
found
```

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## Command substitution

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- Replace command with its output  
`$(command)` or ``command``
- Store output of 'pwd' command in 'here':

```
$ here=$(pwd)
$ echo $here
```

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## Command line arguments

- Program arguments specified on the command line
- A way to pass arguments to a shell script
- Usage:

```
$ ./MyBashScript.sh arg1 arg2
```

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## Batch vs. concurrent modes

Batch mode:

- Commands run sequentially

```
command1; command2
```

Concurrent mode:

- Commands run in parallel

```
command1 & command2
```

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## Summary

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In this video, you learned that:

- Metacharacters have meaning to the shell
- Quoting is used to interpret or escape metacharacter meaning
- I/O redirection refers to a set of features used for redirecting
- Command substitution to replace a command with its output
- Command line arguments are used to pass arguments to a shell script
- Concurrent mode allows commands to run in parallel

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