

# Shell Scripting Interview Questions

## Basic Shell Scripting Concepts:

1. What is a shell script?
2. How do you create a basic shell script?
3. What is the purpose of the `#!/bin/bash` line in a script?
4. How do you make a shell script executable?
5. What are comments in shell scripts, and how are they added?
6. What is the purpose of the `echo` command in a shell script?
7. How do you define variables in shell scripting?
8. How do you use environment variables in a shell script?
9. What is the difference between single quotes (`'`) and double quotes (`"`) in shell scripts?
10. How can you pass arguments to a shell script?
11. How do you retrieve the arguments passed to a shell script?
12. What is the purpose of the `$?` variable in shell scripting?
13. How do you handle errors in a shell script?
14. What does the `exit` command do in a script?
15. How do you use `read` to get input from the user in a script?

## Control Flow:

16. What is an `if` statement in shell scripting, and how is it used?
17. How do you use `else` and `elif` in shell scripting?
18. How do you use a `case` statement in shell scripting?
19. What is a `while` loop, and how is it used?
20. What is a `for` loop, and how is it used?
21. How do you use `until` loops in shell scripting?
22. What is the difference between `continue` and `break` in loops?
23. How do you combine multiple conditions in an `if` statement?



- 24.How do you compare strings in shell scripting?
- 25.How do you compare integers in shell scripting?
- 26.How do you check if a file exists in a shell script?
- 27.How do you check if a directory exists in a shell script?
- 28.How do you check if a file is empty in shell scripting?
- 29.How do you handle invalid inputs in a shell script?

### **File and Directory Operations:**

- 30.How do you create a file in shell scripting?
- 31.How do you remove a file in shell scripting?
- 32.How do you rename a file in shell scripting?
- 33.How do you copy a file in shell scripting?
- 34.How do you move a file in shell scripting?
- 35.How do you list the contents of a directory in a shell script?
- 36.How do you check if a file is readable, writable, or executable in shell scripting?
- 37.How do you find the size of a file in shell scripting?
- 38.How do you change file permissions using shell scripting?
- 39.How do you change ownership of a file in shell scripting?
- 40.How do you create a new directory in shell scripting?
- 41.How do you remove an empty directory in shell scripting?
- 42.How do you change the current working directory in a shell script?

### **String Manipulation:**

- 43.How do you concatenate strings in shell scripting?
- 44.How do you extract a substring in shell scripting?
- 45.How do you get the length of a string in shell scripting?
- 46.How do you check if a string is empty in shell scripting?
- 47.How do you replace a substring within a string in shell scripting?
- 48.How do you convert a string to uppercase in shell scripting?
- 49.How do you convert a string to lowercase in shell scripting?
- 50.How do you split a string into an array in shell scripting?

### **Arrays:**

- 51.How do you declare an array in shell scripting?
- 52.How do you access an element of an array in shell scripting?



- 53.How do you get the length of an array in shell scripting?
- 54.How do you iterate over an array in shell scripting?
- 55.How do you add an element to an array in shell scripting?
- 56.How do you delete an element from an array in shell scripting?

### **Functions:**

- 57.How do you define a function in shell scripting?
- 58.How do you pass parameters to a function in shell scripting?
- 59.How do you return values from a function in shell scripting?
- 60.How do you use default arguments in shell scripting functions?
- 61.How do you call a function in shell scripting?
- 62.What are local and global variables in shell scripting?

### **Process Management:**

- 63.How do you start a background process in a shell script?
- 64.How do you stop a process in a shell script?
- 65.How do you check the status of a process in a shell script?
- 66.How do you redirect the output of a command to a file?
- 67.How do you append the output of a command to a file?
- 68.How do you pipe the output of one command to another command?
- 69.How do you send output to both a file and the console in shell scripting?
- 70.How do you capture the output of a command into a variable?
- 71.How do you get the process ID (PID) of a running command?
- 72.How do you kill a process in shell scripting?
- 73.How do you find the running processes of a user?

### **File I/O:**

- 74.How do you read a file line by line in a shell script?
- 75.How do you write to a file in shell scripting?
- 76.How do you append data to an existing file in shell scripting?
- 77.How do you check if a file is readable, writable, or executable in a script?
- 78.How do you check if a file exists and is not empty in a script?
- 79.How do you open and close a file in shell scripting?



80. How do you perform input/output redirection in shell scripting?

### **Advanced Concepts:**

81. How do you handle signals in shell scripting?

82. What is process substitution in shell scripting?

83. How do you execute a shell script as a different user?

84. How do you debug a shell script?

85. How do you use the trap command in shell scripting?

86. What is the difference between source and . commands in shell scripting?

87. How do you write a script that runs in the background indefinitely?

88. How do you monitor the execution time of a script or command in shell scripting?

89. How do you pass the exit status of a command to another command?

90. How do you run a script with elevated privileges in shell scripting?

### **Regular Expressions:**

91. How do you match patterns in strings using regular expressions in shell scripting?

92. How do you replace a string using regular expressions in shell scripting?

93. How do you validate email addresses using regular expressions in shell scripting?

94. How do you match a number in a string using regular expressions?

95. How do you find lines that match a pattern in a file?

### **Debugging and Optimization:**

96. How do you set debugging flags for a shell script?

97. How do you profile and optimize a shell script?

98. How do you handle unexpected input or conditions in shell scripting?

99. How do you ensure a shell script runs on different Linux distributions?

100. How do you create a shell script that handles large amounts of data efficiently?

These questions cover a broad range of topics and will help you deepen your knowledge of shell scripting, from basic concepts to advanced techniques.

Prince Joshi