

Bash Practice Questions for Chapter 4: Using Arrays in Bash

These simple exercises will help you practice what you learned in the [fourth chapter](#) of the [Bash Beginner Series on Linux Handbook](#).

Exercise 1: Colors of the Rainbow

Write a shell script in that uses an array to store the names of the seven colors of the rainbow and prints it.

Difficulty level: Easy

Hint: Use an array to store the seven colors of the rainbow: Violet, Indigo, Blue, Green, Yellow, Orange and Red.

Exercise 2: Pick a color

Write a shell script in that asks you to pick a color from exercise 1 and print it.

Difficulty level: Easy

Hint: Print the specific element of the array corresponding to the desired color.

Exercise 3: How many colors of the rainbow?

Write a shell script in that prints the number of colors of the rainbow from exercise 1.

Difficulty level: Easy

Hint: Use `echo ${#rainbow[@]}` where rainbow is the name of the array.

Exercise 4: Swap colors.

Write a shell script to swap any two colors of the rainbow from the current order as in exercise 1.

Difficulty level: Intermediate

Hint: Use a temporary variable to store any of the values of either element before swapping them.

Exercise 5: Add another color to the rainbow

Write a shell script to add an 8th color to the rainbow array described in exercise 1. Let's say cyan.

Difficulty level: Easy

Hint: Use `rainbow+=("cyan")` to add the 8th color.

Solutions to the Exercises

Solution 1: Colors of the Rainbow

Write a shell script in that uses an array to store the names of the seven colors of the rainbow and prints it.

```
#!/bin/bash

rainbow=("violet" "indigo" "blue" "green" "yellow" "orange" "red")
echo "Colors of the rainbow:"
echo ${rainbow[*]}
```

Solution 2: Pick a color

Write a shell script in that prints the first color of the rainbow array described in exercise 1.

```
#!/bin/bash

rainbow=("violet" "indigo" "blue" "green" "yellow" "orange" "red")
echo "Colors of the rainbow:"
echo ${rainbow[*]}

echo "First color on this rainbow array:"
echo ${rainbow[0]}
```

Solution 3: How many colors of the rainbow?

Write a shell script in that prints the number of colors of the rainbow from exercise 1.

```
#!/bin/bash

rainbow=("violet" "indigo" "blue" "green" "yellow" "orange" "red")
echo "Colors of the rainbow:"
echo ${rainbow[*]}

echo "Number of colors of this rainbow:"
echo $#rainbow[@]
```

Solution 4: Swap colors.

Write a shell script to swap any two colors of the rainbow from the current order as in exercise 1.

Here, we are going to swap colors violet and yellow. Their positions in the rainbow array are at 0 and 4 respectively.

```
#!/bin/bash

rainbow=("violet" "indigo" "blue" "green" "yellow" "orange" "red")
echo "Colors of the rainbow:"
echo ${rainbow[*]}

echo "Before swapping positions 0 and 4, the colors are arranged as:"
echo ${rainbow[*]}
temp=${rainbow[4]}
rainbow[4]=${rainbow[0]}
rainbow[0]=$temp
echo "After swapping positions 0 and 4, the colors are rearranged as:"
echo ${rainbow[*]}
```

Solution 5: Add another color to the rainbow

Write a shell script to add an 8th color to the rainbow array described in exercise 1. Let's say cyan. Print the new array.

```
#!/bin/bash

rainbow=("violet" "indigo" "blue" "green" "yellow" "orange" "red")
echo "Colors of the rainbow:"
echo ${rainbow[*]}

rainbow+=("cyan")
echo "Adding an eighth color "cyan" to this rainbow..coz why not?"
sleep 2
echo "New rainbow:"
echo ${rainbow[*]}
```