

Name:- Vidhi Binwal
PRN:- 2207012249
Class:- CSE-C3
Batch:- 2022-26

Subject: Operating system lab	
EXPERIMENT No. 4	
TITLE: Shell script to perform various string operations	DoP: 14/02/24

Aim: Implement shell script to perform various string operations

Learning Outcomes:

1. To understand the String operations
2. To Demonstrate the shell script for String Operations using Linux command.

Problem Statements:

- a) Compare two strings

```
1 #checking if two strings are equal or not
2 echo "Enter the first word:"
3 read str1
4 echo "Enter the second word:"
5 read str2
6
7 if [ "$str1" == "$str2" ] ; then
8     echo "Strings are equal"
9 else
10    echo "Strings are not equal"
11 fi
12
```

- b) Concatenate two strings

```
1 #concatenation
2
3 concat=$str1$str2
4
5 echo "The concatenated string is $concat "
```

- c) Find the length of a string

Name:- Vidhi Binwal

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```
20 #finding the length of a string
21
22 length=`expr length "$concat" `
23
24 echo "The length of the string is $length"
25
```

d) Print odd-position characters

```
26 #Printing the characters at odd positions
27
28 length1=`expr length "$str2" `
29 for((i=0;i<length1;i+=2))
30 do
31     echo "${str2:i:1}"
32 done
33
```

e) Find whether a given string is a palindrome or not

```
38 #palindrome
39 if [ "$reverse" == "$str2" ] ; then
40 echo "It is palindrome"
41 else
42 echo "It is not palindrome"
43 fi
```

f) Print the reverse of the given string

```
#reverse the string

reverse=""
for((i=length1-1; i>=0;i--))
do
    reverse="$reverse${str2:i:1}"
done
echo "Reversed string is $reverse"
```

g) Find the occurrence of a character in the string

Name:- Vidhi Binwal

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Batch:- 2022-26

```
..
45 #find occurrence of a character in string
46 echo "Enter a character to find in concatenated string"
47 read ch
48 count=0
49 for ((i=0; i<length; i++))
50 do
51     if [ "${concat:i:1}" == "$ch" ]; then
52         ((count++))
53     fi
54 done
55 echo "Occurrences of '$ch' in '$concat': $count"
```

Name:- Vidhi Binwal

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Batch:- 2022-26

```
1 #checking if two strings are equal or not
2 echo "Enter the first word:"
3 read str1
4 echo "Enter the second word:"
5 read str2
6
7 if [ "$str1" == "$str2" ] ; then
8     echo "Strings are equal"
9 else
10    echo "Strings are not equal"
11 fi
12
13 #concatenation
14 concat=$str1$str2
15 echo " The concatenated string is $concat "
16
17 #finding the length of a string
18 length=`expr length "$concat"`
19 echo "The length of the string is $length"
20
21 #Printing the characters at odd positions
22 length1=`expr length "$str2"`
23 for((i=0;i<length;i+=2))
24 do
25     echo "${str2:i:1}"
26 done
27
28 #To print reverse of the string
29 reverse=""
30 for((i=length-1;i>=0;i--))
31 do
32     reverse="$reverse${str2:i:1}"
33 done
34 echo "Reversed string is $reverse"
35
```

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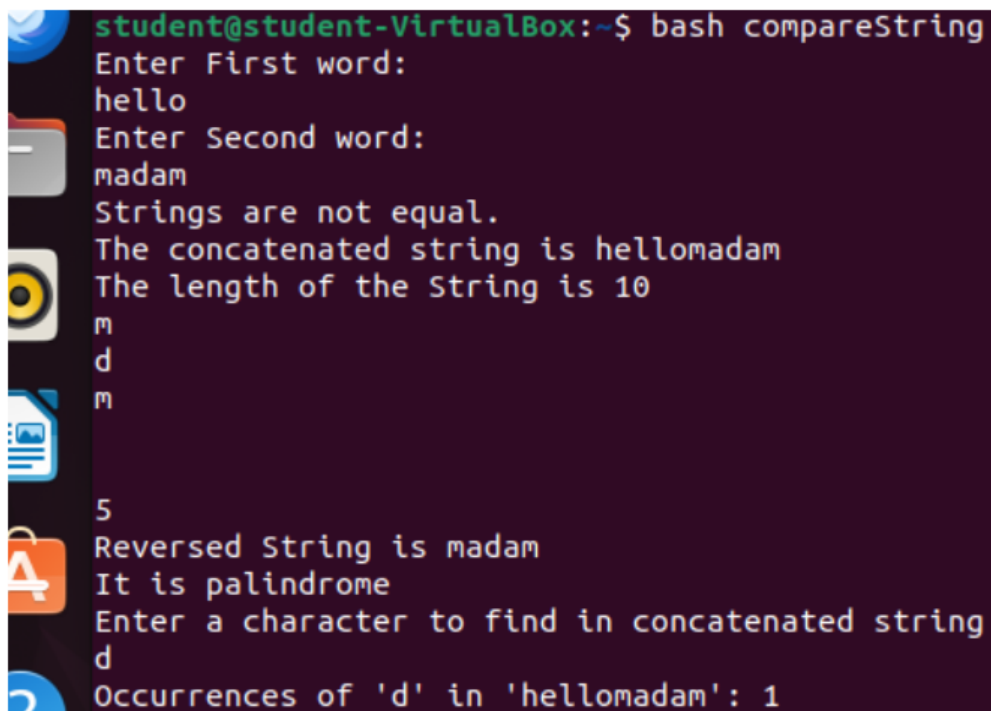
PRN:- 2207012249

Class:- CSE-C3

Batch:- 2022-26

```
36 #To check if a given word is palindrome or not
37 echo "Enter the word:"
38 read str
39 reverse=""
40 for((i=length-1;i>=0;i--))
41 do
42     reverse="$reverse${str:i:1}"
43 done
44 if [ "$str" == "$reverse" ] ; then
45     echo "It is a palindrome word"
46 else
47     echo "It is not a palindrome word"
48 fi
49
50 #To find the occurrence of a character in a string
51 echo "Enter a string:"
52 read st
53 echo "Enter the char you want to search for: "
54 read char
55
56 #Use grep to find the occurrence of the character in the string
57 count=`echo $st| grep -o "$char" | wc -l`
58
59 echo "The character '$char' appears $count times in the string '$st'"
```

Output



```
student@student-VirtualBox:~$ bash compareString
Enter First word:
hello
Enter Second word:
madam
Strings are not equal.
The concatenated string is hellomadam
The length of the String is 10
m
d
m
5
Reversed String is madam
It is palindrome
Enter a character to find in concatenated string
d
Occurrences of 'd' in 'hellomadam': 1
```

Name:- Vidhi Binwal

PRN:- 2207012249

Class:- CSE-C3

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OSL - Assignment #3

Name:- Vidhi Binwal

PRN :- 22070122249

Class :- CSE-C3

Sem :- IV (2022-26)

Title :- Shell script to perform various string operations

* AIM:- Implement shell script to perform string operations.

* LEARNING OUTCOMES:-

1. To understand the String operations
2. To demonstrate the shell script for String operations using linux.

* THEORY:-

In Linux, we can perform various string operations using command-line tools and scripting languages like Bash.

- a) Compare 2 strings: It involves checking of two strings entered by the user are same or not. It is achieved using conditional statement to compare each character of the string. It uses the "==" operators to compare the string. Moreover it also keeps a check on case-sensitivity of characters

eg. `#!/bin/bash`

`string1="Hello"`

`string2="World"`

`if ["$string1" == "$string2"]; then`

`echo "equal"`

`else`

`echo "not equal"`

`fi`

FOR EDUCATIONAL USE

(b) Concatenate 2 strings: It combines 2 strings and produces a new string.

```
str1="Hello"
```

```
str2="World"
```

```
result="$str1$str2"
```

```
echo $result
```

(c) Length of the string: The length of the string is total count of characters present in the whole string.

```
myString="Linux"
```

```
length=${#myString}
```

```
echo $length
```

(d) Print odd-position characters: Calculate the length, use the 'for' loop and extract the characters at the odd positions.

```
input="Hello"
```

```
length=${#input}
```

```
for ((i=0; i<length; i+=2)); do
```

```
    echo -n "${input:i:1}"
```

```
done
```

(e) Palindrome :- Input for a string is taken, the string's reverse is operated using "\$reverse \${var:i:1}", if condition is used to compare if 'var' and reverse of var is same to print if it is palindrome or not.

Name:- Vidhi Binwal

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(f) print the reverse of the given string :-

(i) The original string is taken.

(ii) The for loop iterates through the string in reverse.

(iii) At each step, it adds the current character to the 'reversed' variable.

(iv) Finally, the fully reversed string is printed.

(g) Occurrence of character in string :-

(i) Input the string and char

(ii) Iterate through string to check each character.

(iii) check for character match; if matches increment the occurrences count and display position.

(iv) display

* CONCLUSION:-

We have studied and implemented the string operations on shell script.

