

BASH ASSIGNMENT

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Write a shell script to change the values in a file(i.e sig.conf) according to the input passed to the script. The script should ask for all four inputs from the user & also validate the input.

Below are the details of input. In full bracket options are given, you have to restrict the user pass single value for each input from the provided options in the full bracket.

Input:-

- 1) Component Name [INGESTOR/JOINER/WRANGLER/VALIDATOR]**
- 2) Scale [MID/HIGH/LOW]**
- 3) View [Auction/Bid]**
- 4) Count [single digit number]**

Explanation of a conf file line.

<view> ; <scale> ; <component name> ; ETL ; vdopia-ctl= <count>

Note:- vdopiasample stands for Auction & vdopiasample-bid is for Bid
The script should change the values in the file according to the input provided. At a time only one line of the conf file should be altered.

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sigmoid@sigmoid-ThinkPad-E14: ~/Documents/practise/shell-script
#!/bin/bash

# 1. Input Collection
read -p "Component_name: [INGESTOR/JOINER/WRANGLER/VALIDATOR]" cmp_name
read -p "Scale: [MID/HIGH/LOW]" scale
read -p "View: [AUCTION/BID]" view
read -p "Count: [Single digit number]" count

# 2. Validation
flag=0
[[ "$cmp_name" =~ ^(INGESTOR|JOINER|WRANGLER|VALIDATOR)$ ]] && ((flag++))
[[ "$scale" =~ ^(MID|HIGH|LOW)$ ]] && ((flag++))
[[ "$view" =~ ^(AUCTION|BID)$ ]] && ((flag++))
[[ "$count" =~ ^[0-9]$ ]] && ((flag++))

if [[ $flag -ne 4 ]]; then
    echo "Invalid Inputs. Try again"
    exit 1
fi

# 3. File Processing
path=$(pwd)/sig.conf
org="$cmp_name/$scale/$view/$count"
cmp="$cmp_name/$scale/$view/"

# FIX 1: Proper command substitution to get the count
cnt=$(grep -c "^$cmp" "$path" 2>/dev/null || echo 0)

if [[ $cnt -eq 0 ]]; then
    echo "No existing entry found. Adding new entry..."
    echo "$org" >> "$path"
elif [[ $cnt -eq 1 ]]; then
    echo "Existing entry found. Updating count..."
    # FIX 2: Use | as delimiter and double quotes for variable expansion
    sed -i "s|^${cmp}.*|${org}|" "$path"
else
    echo "Something fishy: Multiple entries found."
    exit 1
fi

echo "Final state of $path:"
cat "$path"

```

- **Shebang Header:** Specifies /bin/bash to ensure the script executes using the Bash shell interpreter.

- **User Input:** Uses read -p to capture values for component name, scale, view, and count directly into variables.
- **Input Validation:** Employs **Regex matching** (=<~>) inside double brackets to verify inputs against allowed values.
- **Condition Flagging:** Increments a flag variable using arithmetic expansion ((flag++)) for every valid input.
- **Path Definition:** Sets the configuration file path dynamically using \$(pwd) to ensure the script finds sig.conf.
- **String Formatting:** Constructs a search string (cmp) and a full entry string (org) with forward slashes as delimiters.
- **Command Substitution:** Captures command output into the cnt variable using the modern \$(...) syntax.
- **Counting Matches:** Uses grep -c with a line-start anchor (^) to find how many times the component already exists.
- **Whitespace Stripping:** Pipes output through tr -d '[[:space:]]' to remove hidden characters that cause syntax errors.
- **Arithmetic Evaluation:** Uses double parentheses ((cnt == 0)) for robust integer comparison of the match count.
- **Append Logic:** Uses the >> redirector to add the new string to the end of the file if no match is found.
- **In-place Update:** Executes sed -i to find and replace the existing line directly within the configuration file.
- **Sed Delimiters:** Switches the standard sed delimiter from / to | to handle variables containing slashes.
- **Error Handling:** Terminates the script with exit 1 if inputs are invalid or if data corruption (multiple entries) is detected.

sigmoid@sigmoid-ThinkPad-E14: ~/Documents/practise/shell-script

sigmoid@sigmoid-ThinkPad-E14:~/Documents/practise/shell-script\$./Assignment

Component_name: [INGESTOR/JOINER/WRANGLER/VALIDATOR] INGESTOR

Scale: [MID/HIGH/LOW] LOW

View: [AUCTION/BID] AUCTION

Count: [Single digit number] 1

No existing entry found. Adding new entry...

Final state of /home/sigmoid/Documents/practise/shell-script/sig.conf:

INGESTOR/LOW/AUCTION/1

sigmoid@sigmoid-ThinkPad-E14:~/Documents/practise/shell-script\$./Assignment

Component_name: [INGESTOR/JOINER/WRANGLER/VALIDATOR] JOINER

Scale: [MID/HIGH/LOW] HIGH

View: [AUCTION/BID] BID

Count: [Single digit number] 3

No existing entry found. Adding new entry...

Final state of /home/sigmoid/Documents/practise/shell-script/sig.conf:

INGESTOR/LOW/AUCTION/1

JOINER/HIGH/BID/3

sigmoid@sigmoid-ThinkPad-E14:~/Documents/practise/shell-script\$ cat sig.conf

INGESTOR/LOW/AUCTION/1

JOINER/HIGH/BID/3

sigmoid@sigmoid-ThinkPad-E14:~/Documents/practise/shell-script\$./Assignment

Component_name: [INGESTOR/JOINER/WRANGLER/VALIDATOR] JOINER

Scale: [MID/HIGH/LOW] HIGH

View: [AUCTION/BID] BID

Count: [Single digit number] 5

Existing entry found. Updating count...

Final state of /home/sigmoid/Documents/practise/shell-script/sig.conf:

INGESTOR/LOW/AUCTION/1

JOINER/HIGH/BID/5

sigmoid@sigmoid-ThinkPad-E14:~/Documents/practise/shell-script\$ cat sig.conf

INGESTOR/LOW/AUCTION/1

JOINER/HIGH/BID/5

sigmoid@sigmoid-ThinkPad-E14:~/Documents/practise/shell-script\$