ADJUST-Assignment 1 Explained

Please design a script that writes the numbers from 1 - 10 in random order. Each number should appear only once. You can use bash only. Please provide tests for the script, along with documentation which should include the following:

● Build instructions ● Usage ● Description ● Known limitations / bugs

Solution:

Since there is only finte sequence we can use Fisher–Yates shuffle for generating a random permutation of a finite sequence.

Script:

```
#!/bin/bash

echo $(seq 10) |    tr " " "\n" |    shuf | tr '\n' ' '
```

Usage:

The Fisher-Yates shuffle (named after Ronald Fisher and Frank Yates) is used to randomly permute given input (list). The permutations generated by this algorithm occur with the same probability.

- **Download the script random.sh to your local machine.**

Commands to run after download:

- **chmod +x random.sh**

- **sh random.sh**

Build Instruction:

echo $(seq 10)

'seq' command in Linux is used to generate numbers from FIRST to LAST in steps of INCREMENT.

[root@server ~]# echo $(seq 10)

1 2 3 4 5 6 7 8 9 10

SHUF

shuf - generate random permutations

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tr:: translate

"tr" command is to remove "new line" characters from a file. The new line character is specified as "\n".

Fisher-Yates is a perfect shuffling algorithm. It is a great shuffle with its O(n) complexity and its guaranteed uniformity. It permits in-place updates of arrays (so in most, if not all, imperative programming environments).