# Programming Fundamentals Final Exam 04.04.2020

## Problem 1. Password Reset

*Yet again you have forgotten your password... Naturally it`s not the first time this has happened. Actually you got so tired of it that you decided to help yourself with a smart solution.*

Write a password reset program that performs a series of commands upon a predefined string.

First, you will receive a string and afterwards, until the command "**Done**" is given, you will be receiving strings with commands split by a single space.

The commands will be the following:

* TakeOdd
  + Takes only the characters at **odd** **indices** and **concatenates** them together to  
    obtain the **new raw password** and then **prints** it.
* Cut {index} {length}
  + Gets the substring with the **given length** starting from the **given index** from the password and removes its first occurrence of it, then prints the password on the console.
  + The given index and length will **always** be **valid**.
* Substitute {substring} {substitute}
  + If the raw password contains the given substring, replaces all of its   
    occurrences with the substitute text given and prints the result.
  + If it doesn’t, prints "Nothing to replace!"

### Input

* You will be receiving strings until the "**Done**" command is given.

### Output

* After the "Done" command is received, print:
  + "Your password is: {password}"

### Constraints

* The indexes from the "**Cut {index} {length}**" command will always be valid.

### Examples

|  |  |
| --- | --- |
| **Input** | **Output** |
| Siiceercaroetavm!:?:ahsott.:i:nstupmomceqr  TakeOdd  Cut 15 3  Substitute :: -  Substitute | ^  Done | icecream::hot::summer  icecream::hot::mer  icecream-hot-mer  Nothing to replace!  Your password is: icecream-hot-mer |
| **Comments** | |
| TakeOdd  Siiceercaroetavm!:?:ahsott.:i:nstupmomceqr -> icecream::hot::summer  We only take the chars at odd indices 1, 3, 5 etc.  **Cut 15 3 ->** icecream::hot::summer -> sum  icecream::hot::mer  We cut a substring starting at index 15 with length 3,  remove it from the raw password and print it.  Then, on a new line we print the resulting new raw password.  **Substitute :: - ->** icecream::hot::summer -> icream-hot-summer  We replace "::" with "-".  **Substitute** | ^ **->** Nothing to replace!  "|" is not found anywhere in the raw password.  Finally, after receiving the "**Done**" command, we print the resulting password in the proper format. | |
| **Input** | **Output** |
| up8rgoyg3r1atmlmpiunagt!-irs7!1fgulnnnqy  TakeOdd  Cut 18 2  Substitute ! \*\*\*  Substitute ? .!.  Done | programming!is!funny  programming!is!fun  programming\*\*\*is\*\*\*fun  Nothing to replace!  Your password is: programming\*\*\*is\*\*\*fun |

### JS Input / Output

|  |  |
| --- | --- |
| **Input** | **Output** |
| (["Siiceercaroetavm!:?:ahsott.:i:nstupmomceqr",  "TakeOdd",  "Cut 15 3",  "Substitute :: -",  "Substitute | ^",  "Done"]) | icecream::hot::summer  icecream::hot::mer  icecream-hot-mer  Nothing to replace!  Your password is: icecream-hot-mer |
| **Comments** | |
| TakeOdd  Siiceercaroetavm!:?:ahsott.:i:nstupmomceqr -> icecream::hot::summer  We only take the chars at odd indices 1, 3, 5 etc.  **Cut 15 3 ->** icecream::hot::summer -> sum  icecream::hot::mer  We cut a substring starting at index 15 with length 3,  remove it from the raw password and print it.  Then, on a new line we print the resulting new raw password.  **Substitute :: - ->** icecream::hot::summer -> icream-hot-summer  We replace "::" with "-".  **Substitute** | ^ **->** Nothing to replace!  "|" is not found anywhere in the raw password.  Finally, after receiving the "**Done**" command, we print the resulting password in the proper format. | |
| **Input** | **Output** |
| ([**"**up8rgoyg3r1atmlmpiunagt!-irs7!1fgulnnnqy**",**  **"**TakeOdd**",**  **"**Cut 18 2**",**  **"**Substitute ! \*\*\***",**  **"**Substitute ? .!.**",**  **"**Done**"])** | programming!is!funny  programming!is!fun  programming\*\*\*is\*\*\*fun  Nothing to replace!  Your password is: programming\*\*\*is\*\*\*fun |