Lab: Text Processing

Problems for exercises and homework for the "Programming Fundamentals" course @ SoftUni

You can check your solutions in Judge.

1. Reverse Strings

You will be given a series of strings until you receive an "**end**" command. Write a program that reverses strings and prints each pair on a separate line in the format "**{word} = {reversed word}**".

Examples

Input	Output
helLo Softuni bottle end	helLo = oLleh Softuni = inutfoS bottle = elttob
Dog caT chAir end	Dog = goD caT = Tac chAir = riAhc

Solution

Use while loop and read strings until you receive "**end**".

```
String line = scanner.nextLine();
while (!"end".equals(line)){
    line = scanner.nextLine();
}
```

Reverse the String with for loop. Start from the last index and append each symbol to the new String.

```
String reversed = "";
for (int i = line.length() - 1; i >= 0; i--) {
    reversed += line.charAt(i);
}
```

Print the reversed String in the specified format.

```
System.out.printf("%s = %s%n", line, reversed);
```

2. Repeat Strings

Write a Program That Reads an Array of Strings. Each String is Repeated N Times, Where N is the length of the String. Print the Concatenated String.

Examples

Input	Output

hi abc add	hihiabcabcabcaddaddadd
work	workworkworkwork
ball	ballballballball

Solution

Read a **string array**.

```
String[] words = scanner.nextLine().split( regex: " ");
```

Initialize **StringBuilder**.

```
StringBuilder result = new StringBuilder();
```

Iterate through elements in the array. Find the length of the word at each iteration and append it to the **StringBuilder**.

```
for (String word : words) {
    int count = word.length();
    for (int i = 0; i < count; i++) {
        result.append(word);
    }
}
```

Print the **StringBuilder**.

3. Substring

On the first line, you will receive a string. On the second line, you will receive a second string. Write a program that removes all of the occurrences of the first String in the second until there is no match. At the end, print the remaining String.

Examples

Input	Output	Comment
ice kicegiciceeb	kgb	We remove ice once, and we get "kgiciceeb" We match "ice" one more time, and we get "kgiceb" There is one more match. The final result is "kgb"
e fixture	fixtur	

Hints

- Read the input.
- Find the first index where the key appears.
  - Use the built-in method **indexOf()**
- Remove the match.
  - Use the built-in method **replace(String oldValue, String newValue)**
- Repeat it until the text doesn't contain the key anymore.

4. Text Filter

Write a program that takes a **text** and a **string of banned words**. All words included in the ban list should be replaced with **asterisks** "*****", equal to the word's length. The entries in the ban list will be separated by a **comma** and **space** "**,** ".

The ban list should be entered on the first input line and the text on the second input line.

Examples

Input	Output
Linux, Windows It is not **Linux**, it is GNU/**Linux**. **Linux** is merely the kernel, while GNU adds the functionality. Therefore we owe it to them by calling the OS GNU/**Linux**! Sincerely, a **Windows** client	It is not *****, it is GNU/*****. ***** is merely the kernel, while GNU adds the functionality. Therefore we owe it to them by calling the OS GNU/*****! Sincerely, a ******* client
computer, programming, set In **computer programming**, an application **programming** interface (API) is a **set** of subroutine definitions, communication protocols, and tools for building software.	In ******** **********, an application ********** interface (API) is a *** of subroutine definitions, communication protocols, and tools for building software.

Hints

- Read the input.
- Replace all ban words in the text with an asterisk (*).
    - Use the built-in method **`replace(banWord, replacement)`**.

5. Digits, Letters and Other

Write a program that receives a single string and on the first line prints all the digits, on the second – all the letters, and on the third – all the other characters. There will always be at least one digit, one letter, and another character.

Examples

Input	Output
Agd#53Dfg^&4F53	53453 AgdDfgF #^&
a1!	1 a !

Hints

- Read the input.
- Use a loop to iterate through all characters in the text. If the char is a digit, print it, otherwise, ignore it.
    - Use **`Character.isDigit(char symbol)`**
- Do the same for the letters and other chars.
    - Find something like **`isDigit`** method for the letters.