

# Conversation with Gemini

Consider the input -> output pairs below:

Computer -> Xxxxx

walk -> xxxx

to -> xx

NYTimes -> XXXxxxx

IBM -> XXX

bringing -> xxxx

ToDo -> xxXx

Generate the output for the input string below, and explain the pattern:

Encyclopedia

Based on the analysis of the provided input-output pairs, here is the generated output and the explanation of the pattern.

**Output: Xxxxx**

## Explanation of the Pattern

The transformation follows two main rules involving **case masking** and **lowercase truncation**:

### 1. Case Masking:

- Every uppercase letter in the input is replaced with an 'X'.
- Every lowercase letter in the input is replaced with an 'x'.

### 2. Consecutive Lowercase Truncation:

- Any continuous sequence of lowercase 'x's that exceeds 4 characters in length is truncated to exactly 4 characters.
- Uppercase sequences and shorter lowercase sequences remain unchanged.

## Verification with Examples:

- Computer Xxxxxxxxx (7 lowercase xs) Truncate xxxxxxxxx to xxxx Xxxxx
- bringing xxxxxxxx (8 lowercase xs) Truncate to xxxx
- NYTimes XXXxxxx (lowercase part is exactly 4, so no truncation) XXXxxxx

- `ToDo` xxxx (Lowercase runs are xx and x, both 4) xxxx
- Encyclopedia XXXXXXXXXXXX (11 lowercase x's) Truncate XXXXXXXXXXXX to xxxx XXXXX