

Problem 5 – Semantic HTML

You are given an **HTML code**, written in the old **non-semantic** style using tags like `<div id="header">`, `<div class="section">`, etc. Your task is to write a program that **converts this HTML to semantic HTML** by changing tags like `<div id="header">` to their semantic equivalent like `<header>`.

The non-semantic tags that should be converted are **always** `<div>`s and have either **id** or **class** with one of the following values: `"main"`, `"header"`, `"nav"`, `"article"`, `"section"`, `"aside"` or `"footer"`. Their corresponding closing tags are always followed by a comment like `<!-- header -->`, `<!-- nav -->`, etc. staying at the same line, after the tag.

Input

The input will be read from the console. It will contain a variable number of lines and will end with the keyword `"END"`.

Output

The output is the semantic version of the input HTML. In all converted tags you should **replace multiple spaces** (like `<header style="color:red">`) with a single space and remove excessive spaces at the end (like `<footer >`). See the examples.

Constraints

- Each line from the input holds either an HTML **opening tag** or an HTML **closing tag** or HTML **text content**.
- There will be no tags that span several lines and no lines that hold multiple tags.
- Attributes values will always be enclosed in **double quotes** `"`.
- Tags will never have **id** and **class** at the same time.
- The HTML will be **valid**. Opening and closing tags will match correctly.
- **Whitespace** may occur between attribute names, values and around comments (see the examples).
- Allowed working time: 0.1 seconds. Allowed memory: 16 MB.

Examples

Input	Output
<code><div id="header"> </div> <!-- header --> END</code>	<code><header> </header></code>
<code><div style="color:red" id="header"> </div> <!-- header --> END</code>	<code><header style="color:red"> </header></code>
<code><div class="header" style="color:blue"> </div> <!-- header --> END</code>	<code><header style="color:blue"> </header></code>
<code><div align="left" id="nav" style="color:blue"> <ul class="header"> <li id="main"> Hi, I have id="main". </div> <!-- nav --> END</code>	<code><nav align="left" style="color:blue"> <ul class="header"> <li id="main"> Hi, I have id="main". </nav></code>
<code><p class = "section" > <div style = "border: 1px" id = "header" > Header <div id = "nav" > Nav </div> <!-- nav --> </div> <!--header--></code>	<code><p class = "section" > <header style = "border: 1px"> Header <nav> Nav </nav> </header></code>

</p> <!-- end paragraph section -->
END

</p> <!-- end paragraph section -->