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

```<div id="header">```
```</div> <!-- header -->```
```END```
	```<header>```
	```</header>```

```<div style="color:red" id="header">```
```</div> <!-- header -->```
```END```
	```<header style="color:red">```
	```</header>```

```<div class="header" style="color:blue">```
```</div> <!-- header -->```
```END```
	```<header style="color:blue">```
	```</header>```

```<div align="left" id="nav" style="color:blue">```
``` <ul class="header">```
```   <li id="main">```
```   Hi, I have id="main".```
```   ```
```   ```
```</div> <!-- nav -->```
```END```
	```<nav align="left" style="color:blue">```
	``` <ul class="header">```
	``` <li id="main">```
	``` Hi, I have id="main".```
	``` ```
	``` ```
	```</nav>```

``` <p class = "section" >```
```   <div style = "border: 1px" id = "header" >```
```   Header```
```   <div id = "nav" >```
```   Nav```
```   </div>   <!-- nav -->```
```   </div> <!--header-->```
	``` <p class = "section" >```
	``` <header style = "border: 1px">```
	``` Header```
	``` <nav>```
	``` Nav```
	``` </nav>```
	``` </header>```

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