

```
#include <stdio.h>
```

```
#include <string.h>
```

```
char input[200];
```

```
int pos;
```

```
int match(char c) {
```

```
    if (input[pos] == c) {
```

```
        pos++;
```

```
        return 1;
```

```
}
```

```
    return 0;
```

```
}
```

```
int A() {
```

```
    if (match('a')) {
```

```
        if (A()) return 1;
```

```
        return 0;
```

```
    } else if (match('b')) {
```

```
        return 1;
```

```
}
```

```
    return 0;
```

```
}
```

```
int S() {
```

```
    int save = pos;
```

```
if (match('c')) {
    if (A()) {
        if (match('d')) return 1;
    }
}
pos = save;
return 0;
}
```

```
int main() {
    if (scanf("%199s", input) != 1) return 0;
    int n = strlen(input);
    if (n > 0 && input[n-1] == '#') input[n-1] = '\0';
    pos = 0;
    if (S() && input[pos] == '\0') {
        printf("string %s belongs to the grammar\n", input);
    } else {
        printf("string %s does not belong to the grammar\n", input);
    }
    return 0;
}
```