**Run of a Kind**

Computer Science Society
Programming Contest
Fall 2006

If you flip a fair coin many times in succession, you don't expect all flips to come up heads or all flips to come up tails. Even though a single flip is as likely to come up heads as it is to come up tails, you also don't expect that the flips would alternate without two heads or two tails occurring in succession. In this program, a sequence of coin flips is given and the longest runs of heads and tails occurring in succession are discovered.

*Input Format*

Each line of the input represents a sequence of zero or more coin flips, read from left to right. The letters `'H'` and `'h'` represent heads, `'T'` and `'t'` represent tails, and all other characters are irrelevant and should be ignored.

*Output Format*

For each line of the input, echo the sequence of flips without irrevelevant characters, highlighting the leftmost longest runs of heads and tails in upper case, and printing all other flips in lower case. Also output the lengths of the longest run of heads and the longest run of tails occurring in succession, formatted as shown in the output sample below.

*Input Sample*

```
HTHHTHTTHTHTHHTHTHTHHHT
turkey
h  t  t  h  t  t  t  t  h  t  h  h
HTH ignore HHTHTTTTTHHH
```

*Output Sample*

```
hthhthTThthhthhthhthtHHHt
longest run of heads is 3
longest run of tails is 2

T
longest run of heads is 0
longest run of tails is 1

htthTTTThtHH
longest run of heads is 2
longest run of tails is 4

htHHHthTTTTThhh
longest run of heads is 3
longest run of tails is 5
```