

Write a converter that can take a String representing match time in one format, and convert it to a String representing match time in another format.

The input match time is in the format

`[period] minutes:seconds.milliseconds`

The output should be in the format

`normalTimeMinutes:normalTimeSeconds - period`

For the output format, minutes should be padded to two digits and milliseconds should be rounded up or down to the nearest whole second. Periods are represented in short-form on the input format and long-form on output format i.e.

Short form	Long Form
PM	PRE_MATCH
H1	FIRST_HALF
HT	HALF_TIME
H2	SECOND_HALF
FT	FULL_TIME

When a given period goes into additional time (i.e. > 45:00.000 for first half, > 90.00.000 for the second half), the added minutes and seconds are represented separately in the format

`normalTimeMinutes:normalTimeSeconds +additionalMinutes:additionalSeconds - period`

Any input which does not meet the required input format should result in an output of INVALID

Examples

Input	Expected Output
"[PM] 0:00.000"	"00:00 - PRE_MATCH"
"[H1] 0:15.025"	"00:15 - FIRST_HALF"
"[H1] 3:07.513"	"03:08 - FIRST_HALF"
"[H1] 45:00.001"	"45:00 +00:00 - FIRST_HALF"
"[H1] 46:15.752"	"45:00 +01:16 - FIRST_HALF"
"[HT] 45:00.000"	"45:00 - HALF_TIME"
"[H2] 45:00.500"	"45:01 - SECOND_HALF"
"[H2] 90:00.908"	"90:00 +00:01 - SECOND_HALF"
"[FT] 90:00.000"	"90:00 +00:00 - FULL_TIME"
"90:00"	"INVALID"
"[H3] 90:00.000"	"INVALID"
"[PM] -10:00.000"	"INVALID"
"FOO"	"INVALID"

Code should be written to production standard. Solution can be written in the language of your choice. Please provide instructions on how your solution should be executed in the form of a README.