Please write a program to read a program source from **stdin** following the token definition and grammar rule at right.

If **Yes**, print each **token’s type** and **the string of token** seperated by **a whitespace “ ”** and end with **a newline**.

If **No**, print only “**invalid input**” with **a newline**. *(don’t output any token!)*

Your program has to check the source whether it follows the token and grammar rules or not.

|  |  |
| --- | --- |
| Termainl | Regular Expression |
| ID | [A-Za-z\_][A-Za-z0-9\_]\* |
| STRLIT | ”[^”]\*” |
| LBR | \( |
| RBR | \) |
| Dot | \. |
| SEMICOLON | ; |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Productions   |  |  |  |  | | --- | --- | --- | --- | | 1 | program | → | stmts | | 2 | stmts | → | stmt stmts | | 3 | stmts | → | λ | | 4 | stmt | → | exp SEMICOLON | | 5 | exp | → | primary | | 6 | exp | → | STRLIT | | 7 | primary | → | ID primary\_tail | | 8 | primary\_tail | → | DOT ID primary\_tail | | 9 | primary\_tail | → | LBR exp RBR primary\_tail | | 10 | primary\_tail | → | λ | |

**Sample Input 1**

"test\_string";

Test\_ID;

**Sample Output 1**

STRLIT " test\_string "

SEMICOLON ;

ID Test\_ID

SEMICOLON ;

**Sample Input 2**

illiga!id;

**Sample Output 2**

invalid input

**Sample Input 3**

Str. length();

**Sample Output 3**

ID Str

DOT .

ID length

LBR (

RBR )

SEMICOLON ;

**Sample Input 4**

printf(“HelloWorld”);

**Sample Output 4**

LBR (

STRLIT " HelloWorld "

RBR )

SEMICOLON ;