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**Code:**

%{

#include <stdio.h>

#include <string.h>

int count;

%}

%option noyywrap

letter [a-zA-Z]

digit [0-9]

space [' ']

identifier ({letter}({letter}|{digit})\*)

classname (class{space}({letter}|{digit})\*)

quote \"

datatype (int|char|float|double|void)

keywords (void|class|throws|import|try|catch|finally|static|implements|extends|main)

booleanvalues (true|false)

loops (while|for)

conditionalStatements (if|else|switch)

string ({quote}({letter}|{digit})\*{quote})

array ({identifier}(\[\d+\])\*)

parenthesis ([{}();,])

comment "//".\*

%%

{space} ;

[ \t\n] ; // Ignore whitespace

"import"[^\n]\*";" { printf("Preprocessor Directive: %s\n", yytext); }

"public|private|protected" { printf("Access Specifier: %s\n", yytext); }

{digit} { printf("Integer: %s\n",yytext);}

{keywords} { printf("Keyword: %s\n", yytext); }

{datatype} { printf("Datatype: %s\n", yytext); }

{booleanvalues} { printf("Boolean Value: %s\n", yytext);}

{parenthesis} { printf("Parenthesis: %s\n", yytext);}

{identifier} { printf("Identifier: %s\n", yytext);}

{classname} { printf("Classname: %s\n", yytext);}

{array} { printf("Array: %s\n", yytext);}

{string} { printf("String: %s\n", yytext);}

{quote} { printf("Quote: %s\n", yytext);}

{comment} { printf("Comment: %s\n", yytext);}

"&&|\|\||!|!=" { printf("Logical Operator: %s\n", yytext); }

"<|>|<=|>=|==" { printf("Relational Operator: %s\n", yytext); }

"\+\+|--" { printf("Unary Operator: %s\n", yytext); }

"[+\-/%\\*]" { printf("Arithmetic Operator: %s\n", yytext); }

"=" { printf("Assignment Operator: %s\n", yytext); }

. { printf("Unknown Token: %s\n", yytext); }

%%

int main() {

yyin = fopen("input.java", "r");

yylex();

fclose(yyin);

return 0;

}

**Output:**

