

# Grammar

Non terminal symbols : A , Token, KEYWORD, IDENTIFIER, PUNCTUATOR, CONSTANT, OPERATOR, LITERAL, String

$A \rightarrow \text{Token } A \mid \varepsilon$

$\text{Token} \rightarrow \text{KEYWORD} \mid \text{IDENTIFIER} \mid \text{PUNCTUATOR} \mid \text{CONSTANT} \mid \text{OPERATOR} \mid \text{LITERAL}$

$\text{KEYWORD} \rightarrow \text{int} \mid \text{void} \mid \text{return}$

$\text{IDENTIFIER} \rightarrow \text{include} \mid \text{stdio} \mid \text{h} \mid \text{greet}$

$\text{PUNCTUATOR} \rightarrow \# \mid ( \mid ) \mid \{ \mid \} \mid ;$

$\text{CONSTANT} \rightarrow 0$

$\text{OPERATOR} \rightarrow < \mid >$

$\text{LITERAL} \rightarrow \text{String}$

Example:

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

```
void greet() {  
    printf("Hello, World!\n");  
}
```

```
int main() {
```

```
    greet();
```

```
    return 0;  
}
```

$A \rightarrow \text{Token } A$

$\text{Token } A \rightarrow \text{Token } \text{Token } A$

$\text{Token } \text{Token } A \rightarrow \text{Token } \text{Token } \text{Token } A$

$\text{Token } \text{Token } \text{Token } A \rightarrow \text{Token } \text{Token } \text{Token } \text{Token } A$

.  
.  
.

$\text{Token } \text{Token} \dots \text{Token } \text{Token } A \rightarrow \text{Token } \text{Token} \dots \text{Token } \text{Token } \varepsilon$  - (Token 31 times)

Token Token . . . Token Token  $\varepsilon \rightarrow$  PUNCTUATOR IDENTIFIER OPERATOR  
IDENTIFIER PUNCTUATOR IDENTIFIER OPERATOR KEYWORD IDENTIFIER  
PUNCTUATOR PUNCTUATOR PUNCTUATOR IDENTIFIER PUNCTUATOR  
LITERAL PUNCTUATOR PUNCTUATOR PUNCTUATOR KEYWORD IDENTIFIER  
PUNCTUATOR PUNCTUATOR PUNCTUATOR IDENTIFIER PUNCTUATOR  
PUNCTUATOR PUNCTUATOR KEYWORD CONSTANT PUNCTUATOR  
PUNCTUATOR

$\rightarrow$  # include < stdio.h > void greet ( ) { printf ( "Hello, World!\n" ) ; } int main ( ) { greet  
( ) ; return 0 ; }