**Lexical Conventions**

**Comments**

A comment, whether single or mult-line, goes between <- characters, which indicates the start of it and ->, which indicate the end. The comment can be placed anywhere in the program as long as it is between these two characters.

Ex:

1. <- create a chord with three notes lengthened by 1/8 ->
2. Note c = (C, 0, *half*);
3. Note g = (G, 0, *half*);
4. Note e = (E, 0, *half*);
5. Chord cr = (c, g, e, eight)

**Identifiers**

In Cb language, an identifier, is a sequence of letters, digits, and underscores (\_).

Note that an identifier must always starts with a lower case letter. There is no limit on how long an identifiers can be.

Below is the list of characters allowed in creating an identifier.

a b c d e f g h i j k l m

n o p q r s t u v w x y z

A B C D E F G H I J K L M

N O P Q R S T U V W X Y Z \_

0 1 2 3 4 5 6 7 8 9

**Ex:** nice\_note, nICE\_note, and n\_NOTE2 are acceptable identifiers. However,

\_nicenote, Nice\_note, and 2nicenote are not acceptable identifiers

**Keywords**

They are identifiers used for specifying the types of expressions, for including methods from an external packages. These keywords listed below are reserved for Cb, which means that they cannot be used as normal identifiers.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Int | is | isnt | sixteen |  |  |
| Note | if | method | eight |  |  |
| Chord | else | return | quarter |  |  |
| Scale | while | compose | half |  |  |
| Stanza | foreach |  | whole |  |  |
| Score | in |  | b |  |  |
| String | end |  |  |  |  |

**Literals**

Cb uses only Integer literals that consist of a sequence one or more digits.

**Constants**

**Integer constant.**

Cb has a set of Integer constants that are used to represent basic notes and known durations of notes. Below is a list of Integer constants:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| A | B | C | D | E | F | G |
| A# | B# | C# | D# | E# | F# | G# |
| Ab | Bb | Cb | Db | Eb | Fb | Gb |

**Operators**

An operator specifies an operation to be performed. Some of operators used in Cb language are shown below:

Cb language takes advantage of existing arithmetic operators to manipulate notes and chords. Below is a list of Operators:

++ -- \* + - / ^- ^+ % # b

< > <= >= is isnt and or

**=**

**Punctuators**

A punctuator is a symbol that add a semantic value to the expression or statement that it belongs to, but does not perform an operation. These punctuators are used in declaration and assignment of variables. Below is a list of Punctuators:

[ ] ( ) { } . ;

Ex:

1. **Note asharp = (A, 0, *quarter*);**
2. <- do re mi song ->

method Stanzas doremi(Int duration){

Note do = (C, 0, duration);

Note re = (D, 0, duration);

Note mi = (E, 0, duration);

Stanza s = [do, re, mi];

return s;

}