



# CIENCIA DE LA COMPUTACIÓN

## LENGUAJES DE PROGRAMACIÓN

### “BNF (Backus-Naur Form) - Kotlin”

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“Los alumnos declaran haber realizado el presente trabajo de acuerdo a las normas de la Universidad Católica San Pablo”

If:

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**Ejemplo 1:**

```
<if-statement> -> if(<expression> ) {<statement>} else {<statement>}
<expression> -> <val>==<val>
<statement> -> doSomething()
               | doSomethingElse()
<val> -> a
        | b
<if-statement> -> if(<expression> ) {<statement>} else {<statement>}
                  -> if(<val> == <val>) doSomething() else doSomethingElse()
                  -> if(a == b) doSomething() else doSomethingElse()
```

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**Ejemplo 2:**

```
<if-statement> -> if(<expression> ) {<statement>} else if (<expression>)
<expression> -> test1
               | test2
<statement> -> doX()
               | doY()
               | doZ()
<if-statement> -> if(<expression> ) {<statement>} else if (<expression>)
                  {<statement>} else {<statement>}
<if-statement> -> if(test1) {doX()} else if(test2) {doY()} else {doZ()}}
```

**Ejemplo 3:**

```
<val> -> <val> = <if-statement>
<if-statement> -> if(<expression> ) {<statement>} else {<statement>}
<expression> -> <val>==<val>
<val> -> a
        | b
<val> -> <val> = <if-statement>
        -> <val> = if(<expression> ) {<statement>} else {<statement>}
        -> <val> = if( <val>==<val>) <val> else <val>
        -> <val> = if(a<b) a else b
```

**For (opción 1):**

```
<for-stmt> -> <exp> { doSth( )}
<for-stmt> -> <exp> { <for-stmt> }

<exp> -> <val>
        | <val> in <exp>

<val> -> A | B | C
```

### For (opción 2):

```
<loop_for> -> for ( <cond> ) { <inst> }  
<letter> -> 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  
  
<cond> -> <letter> in <digit>  
<digit> -> 1 | 2 | 3  
<list_inst> -> <inst><list_inst> | <inst>  
<inst> -> print_letter
```

### While:

```
<while_statement> -> while ( <cond> ) { <list_inst> }  
<cond> -> <var> < <var>  
    | <var> > <var>  
    | <var> >= <var>  
    | <var> <= <var>  
    | <var> == <var>  
    | <var> != <var>  
<var> -> <character> | <number>  
<character> -> 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  
<number> -> 0 | 1 | 2 | 3 | 4 | 5 | ...  
<list_inst> -> <inst> <list_inst>  
    | <inst>  
<inst> -> <assign>  
    | <print>  
    | <increment>
```