C64 BASIC Tute - Episode 6

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GOTO

```
10 print "hello"
20 goto 10
```

GOSUB

```
10 print "before subroutine"
20 gosub 100
30 print "after subroutine"
40 end
100 print "during subroutine"
110 return
```

FOR

```
10 for i=1 to 10
20 print i,"hello"
30 next
```

- next i is optional in C64 BASIC It will figure it out

STEP

```
10 for i=1 to 10 step 2
20 print i,"hello"
30 next
```

IF

```
10 b=3
20 if b>=3 then print "3 or more"
```

There is no ELSE, only THEN

THEN

THEN will read all statements until the end of the line

GOTO

In a couple of weird quirks of the language, THEN is optional if the next statement is GOTO.

But GOTO is optional if you use THEN.

These lines are all the same:

```
if a>10 then goto 100
if a>10 then 100
if a>10 goto 100
```

Perhaps these were done to help offset the 80 character line limit. In code, this can be shortened to:

10ifa>10tH100 (t shift-h is the abbreviation for then)

Relational Operators

- $=$ equal
- $>$ greater than
- $<$ less than
- $>=$ greater than or equal
- $<=$ less than or equal
- $<>$ not equal
- text and numbers can use these operators

Logical Operators

- AND
- NOT
- OR
- XOR is possible, but requires POKEing your data into memory and using the WAIT statement

Logical Operator Context

```
A=64 OR 32 : print A
output:
 96
```

```
A=64 AND 64 : print A
output:
 64
```

```
A=64 AND 128 : print A
output:
 0
```

- to use Logical Operators in IF statements, each condition must be repeated in full

```
10 A=50
20 if A>=30 OR  a<=100 then print "A is any number"
30 if A>=30 AND a<=100 then print "A is between 30 and 100"
```

Binary

128	64	32	16	8	4	2	1
	1	1					
	1						
	1						

Binary truth tables

ON

ON uses an index that starts at 1.

```
10 for i=1 to 3
20 on i gosub 100,200,300
30 next
35 end
100 print i,"gosub 100"
110 return
200 print i,"gosub 200"
210 return
300 print i,"gosub 300"
310 return
```