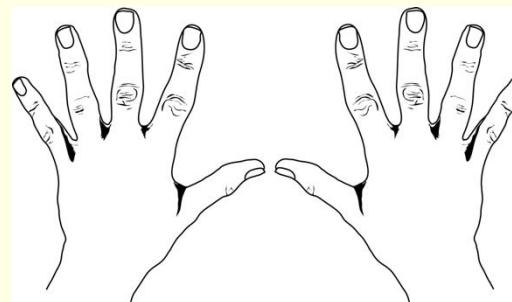
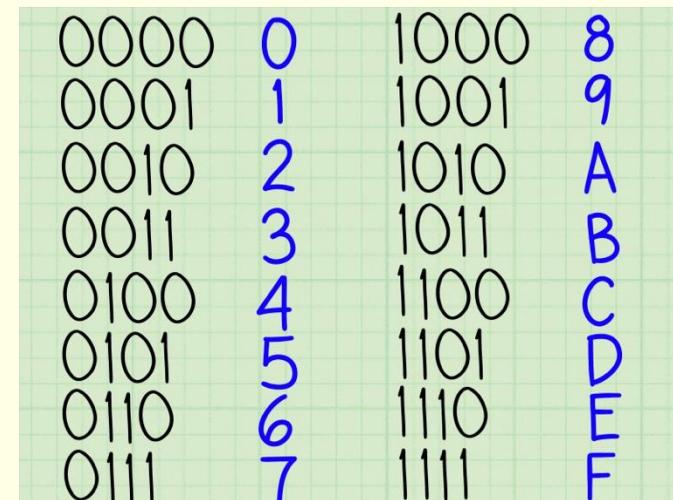


## Learning Objectives

Learn about the HEX number system and how it is used in computing

Be able to convert HEX to binary/ HEX to Decimal and vice versa

# Number Systems

BASE 2	Base 10	Base 16
Binary 0 1 	Decimal (Denary) 0 1 2 3 4 5 6 7 8 9 	HEXADECIMAL 0 1 2 3 4 5 6 7 8 9 A B C D E F 

# Why use Hexadecimal Numbers?

Hexadecimals are used by computer scientists for the following reasons:

Binary produces long strings and can be difficult to work with. Hex is shorter.

Hex can be easily converted to/from binary as there is 1 hex digit per nibble.

Hex is less susceptible to error.

Network band:	2.4 GHz
Network channel:	1
IPv4 address:	192.158.5.105
IPv4 DNS servers:	192.158.0.5
Manufacturer:	Qualcomm Communications Inc.
Description:	Qualcomm QCA5375 802.11ac Wireless Adapter
Driver version:	12.0.5.445
Physical address (MAC):	9C-35-5B-5F-4C-D7

[Copy](#)

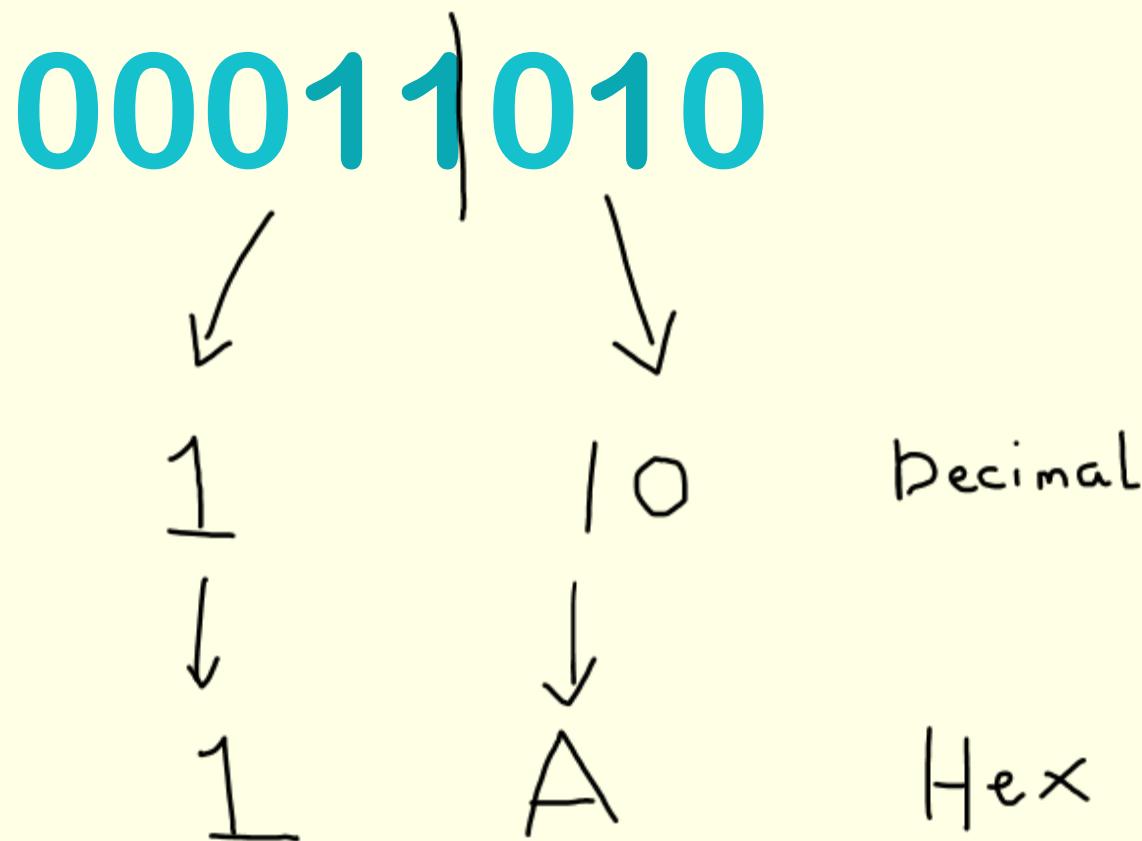
Name	Key Type	Key (Hex)	Key (Ascii)
BMILL	WPA-PSK	63306635626d316c6c00	c0f5bm1ll
DH2B5	WEP	17ecaa74c0	i@tÅ
ECR	WPA-PSK	656b666a343533300	ekfj4533
ERIKBUCKER-PC-5...	WPA2-PSK	706c6864732b4841305259476364513079236a...	plhds+HA0RYGcdQ0y
ICSIinternal	WPA-PSK	49435331576972656c65737300	ICS1Wireless



Decimal (Base 10)	Binary (Base 2)	Hexadecimal (Base 16)
0	0000	0
1	0001	1
2	0010	2
3	0011	3
4	0100	4
5	0101	5
6	0110	6
7	0111	7
8	1000	8
9	1001	9
10	1010	A
11	1011	B
12	1100	C
13	1101	D
14	1110	E
15	1111	F

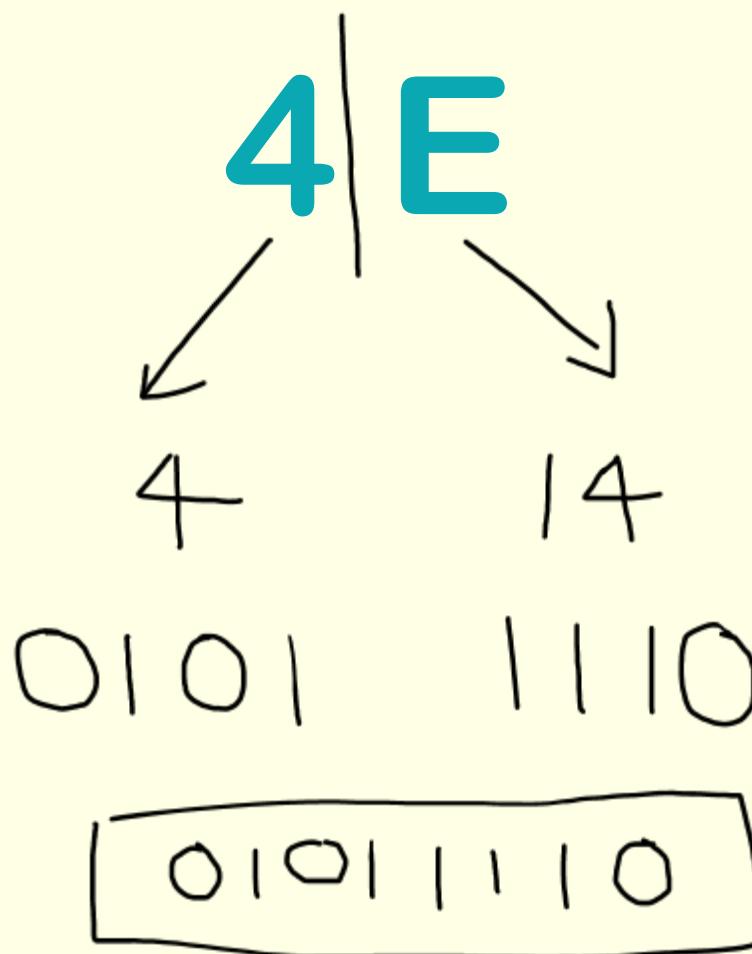


# Working out the Hexadecimal



decimal	hexadecimal	binary
0	0	0000
1	1	0001
2	2	0010
3	3	0011
4	4	0100
5	5	0101
6	6	0110
7	7	0111
8	8	1000
9	9	1001
10	A	1010
11	B	1011
12	C	1100
13	D	1101
14	E	1110
15	F	1111

## Working out the Denary



$$2 + 4 + 8 + 16 + 64 = 94$$

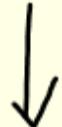
decimal	hexadecimal	binary
0	0	0000
1	1	0001
2	2	0010
3	3	0011
4	4	0100
5	5	0101
6	6	0110
7	7	0111
8	8	1000
9	9	1001
10	A	1010
11	B	1011
12	C	1100
13	D	1101
14	E	1110
15	F	1111

# Working out the Hexadecimal

# 164

128	64	32	16		8	4	2	1
1	0	1	0		0	1	0	0

1 0



A

A4

4



4

decimal	hexadecimal	binary
0	0	0000
1	1	0001
2	2	0010
3	3	0011
4	4	0100
5	5	0101
6	6	0110
7	7	0111
8	8	1000
9	9	1001
10	A	1010
11	B	1011
12	C	1100
13	D	1101
14	E	1110
15	F	1111