

# Examples of Carry and Overflow Flags

Young W. Lim

2024-07-24 Wed

- 1 Based on
- 2 4-bit binary addition examples
  - TOC: 4-bit binary addition examples
  - 4-bit 2's complement numbers
  - Carry flag in the unsigned 4-bit addition table
  - Overflow flag in the signed 4-bit addition table
  - Summary of the 4-bit addition table

I, the copyright holder of this work, hereby publish it under the following licenses: GNU head Permission is granted to copy, distribute and/or modify this document under the terms of the GNU Free Documentation License, Version 1.2 or any later version published by the Free Software Foundation; with no Invariant Sections, no Front-Cover Texts, and no Back-Cover Texts. A copy of the license is included in the section entitled GNU Free Documentation License.

CC BY SA This file is licensed under the Creative Commons Attribution ShareAlike 3.0 Unported License. In short: you are free to share and make derivative works of the file under the conditions that you appropriately attribute it, and that you distribute it only under a license compatible with this one.

# Compiling 32-bit program on 64-bit gcc

- `gcc -v`
- `gcc -m32 t.c`
- `sudo apt-get install gcc-multilib`
- `sudo apt-get install g++-multilib`
- `gcc-multilib`
- `g++-multilib`
- `gcc -m32`
- `objdump -m i386`

# TOC: 4-bit binary addition examples

- 4-bit 2's complement numbers
- Carry flag in the unsigned 4-bit addition table
- Overflow flag in the signed 4-bit addition table
- Summary of the 4-bit addition table

# 4-bit binary numbers in decreasing order

	unsigned		signed
1111	15	0111	+7
1110	14	0110	+6
1101	13	0101	+5
1100	12	0100	+4
1011	11	0011	+3
1010	10	0010	+2
1001	9	0001	+1
1000	8	0000	0
0111	7	1111	-1
0110	6	1110	-2
0101	5	1101	-3
0100	4	1100	-4
0011	3	1011	-5
0010	2	1010	-6
0001	1	1001	-7
0000	0	1000	-8

# Carry flag in the unsigned 4-bit addition table (1)

	0000 (0)	0001 (1)	0010 (2)	0011 (3)	0100 (4)	0101 (5)	0110 (6)	0111 (7)
0000 (0)	0000 (0)	0001 (1)	0010 (2)	0011 (3)	0100 (4)	0101 (5)	0110 (6)	0111 (7)
0001 (1)	0001 (1)	0010 (2)	0011 (3)	0100 (4)	0101 (5)	0110 (6)	0111 (7)	1000 (8)
0010 (2)	0010 (2)	0011 (3)	0100 (4)	0101 (5)	0110 (6)	0111 (7)	1000 (8)	1001 (9)
0011 (3)	0011 (3)	0100 (4)	0101 (5)	0110 (6)	0111 (7)	1000 (8)	1001 (9)	1010 (10)
0100 (4)	0100 (4)	0101 (5)	0110 (6)	0111 (7)	1000 (8)	1001 (9)	1010 (10)	1011 (11)
0101 (5)	0101 (5)	0110 (6)	0111 (7)	1000 (8)	1001 (9)	1010 (10)	1011 (11)	1100 (12)
0110 (6)	0110 (6)	0111 (7)	1000 (8)	1001 (9)	1010 (10)	1011 (11)	1100 (12)	1101 (13)
0111 (7)	0111 (7)	1000 (8)	1001 (9)	1010 (10)	1011 (11)	1100 (12)	1101 (13)	1110 (14)

.....

(P1) (P3) Carry Flag (CF) in unsigned 4-bit additions  
(P2) (P4)

# Carry flag in the unsigned 4-bit addition table (2)

	0000 (0)	0001 (1)	0010 (2)	0011 (3)	0100 (4)	0101 (5)	0110 (6)	0111 (7)
1000 (8)	1000 (8)	1001 (9)	1010 (10)	1011 (11)	1100 (12)	1101 (13)	1110 (14)	1111 (15)
1001 (9)	1001 (9)	1010 (10)	1011 (11)	1100 (12)	1101 (13)	1110 (14)	1111 (15)	0000 CF (16+0)
1010 (10)	1010 (10)	1011 (11)	1100 (12)	1101 (13)	1110 (14)	1111 (15)	0000 CF (16+0)	0001 CF (16+1)
1011 (11)	1011 (11)	1100 (12)	1101 (13)	1110 (14)	1111 (15)	0000 CF (16+0)	0001 CF (16+1)	0010 CF (16+2)
1100 (12)	1100 (12)	1101 (13)	1110 (14)	1111 (15)	0000 CF (16+0)	0001 CF (16+1)	0010 CF (16+2)	0011 CF (16+3)
1101 (13)	1101 (13)	1110 (14)	1111 (15)	0000 CF (16+0)	0001 CF (16+1)	0010 CF (16+2)	0011 CF (16+3)	0100 CF (16+4)
1110 (14)	1110 (14)	1111 (15)	0000 CF (16+0)	0001 CF (16+1)	0010 CF (16+2)	0011 CF (16+3)	0100 CF (16+4)	0101 CF (16+5)
1111 (15)	1111 (15)	0000 CF (16+0)	0001 CF (16+1)	0010 CF (16+2)	0011 CF (16+3)	0100 CF (16+4)	0101 CF (16+5)	0110 CF (16+6)

(P1) (P3) Carry Flag (CF) in unsigned 4-bit additions  
 (P2) (P4)



# Carry flag in the unsigned 4-bit addition table (3)

	1000 (8)	1001 (9)	1010 (10)	1011 (11)	1100 (12)	1101 (13)	1110 (14)	1111 (15)
0000 (0)	1000 (8)	1001 (9)	1010 (10)	1011 (11)	1100 (12)	1101 (13)	1110 (14)	1111 (15)
0001 (1)	1001 (9)	1010 (10)	1011 (11)	1100 (12)	1101 (13)	1110 (14)	1111 (15)	0000 CF (16+0)
0010 (2)	1010 (10)	1011 (11)	1100 (12)	1101 (13)	1110 (14)	1111 (15)	0000 CF (16+0)	0001 CF (16+1)
0011 (3)	1011 (11)	1100 (12)	1101 (13)	1110 (14)	1111 (15)	0000 CF (16+0)	0001 CF (16+1)	0010 CF (16+2)
0100 (4)	1100 (12)	1101 (13)	1110 (14)	1111 (15)	0000 CF (16+0)	0001 CF (16+1)	0010 CF (16+2)	0011 CF (16+3)
0101 (5)	1101 (13)	1110 (14)	1111 (15)	0000 CF (16+0)	0001 CF (16+1)	0010 CF (16+2)	0011 CF (16+3)	0100 CF (16+4)
0110 (6)	1110 (14)	1111 (15)	0000 CF (16+0)	0001 CF (16+1)	0010 CF (16+2)	0011 CF (16+3)	0100 CF (16+4)	0101 CF (16+5)
0111 (7)	1111 (15)	0000 CF (16+0)	0001 CF (16+1)	0010 CF (16+2)	0011 CF (16+3)	0100 CF (16+4)	0101 CF (16+5)	0110 CF (16+6)

.....

(P1) (P3) Carry Flag (CF) in unsigned 4-bit additions  
 (P2) (P4)

# Carry flag in the unsigned 4-bit addition table (4)

.....	.....	.....	.....	.....	.....	.....	.....	.....
	1000 (8)	1001 (9)	1010 (10)	1011 (11)	1100 (12)	1101 (13)	1110 (14)	1111 (15)
1000 (8)	0000 CF (16+0)	0001 CF (16+1)	0010 CF (16+2)	0011 CF (16+3)	0100 CF (16+4)	0101 CF (16+5)	0110 CF (16+6)	0111 CF (16+7)
1001 (9)	0001 CF (16+1)	0010 CF (16+2)	0011 CF (16+3)	0100 CF (16+4)	0101 CF (16+5)	0110 CF (16+6)	0111 CF (16+7)	1000 CF (16+8)
1010 (10)	0010 CF (16+2)	0011 CF (16+3)	0100 CF (16+4)	0101 CF (16+5)	0110 CF (16+6)	0111 CF (16+7)	1000 CF (16+8)	1001 CF (16+9)
1011 (11)	0011 CF (16+3)	0100 CF (16+4)	0101 CF (16+5)	0110 CF (16+6)	0111 CF (16+7)	1000 CF (16+8)	1001 CF (16+9)	1010 CF (16+10)
1100 (12)	0100 CF (16+4)	0101 CF (16+5)	0110 CF (16+6)	0111 CF (16+7)	1000 CF (16+8)	1001 CF (16+9)	1010 CF (16+10)	1011 CF (16+11)
1101 (13)	0101 CF (16+5)	0110 CF (16+6)	0111 CF (16+7)	1000 CF (16+8)	1001 CF (16+9)	1010 CF (16+10)	1011 CF (16+11)	1100 CF (16+12)
1110 (14)	0110 CF (16+6)	0111 CF (16+7)	1000 CF (16+8)	1001 CF (16+9)	1010 CF (16+10)	1011 CF (16+11)	1100 CF (16+12)	1101 CF (16+13)
1111 (15)	0111 CF (16+7)	1000 CF (16+8)	1001 CF (16+9)	1010 CF (16+10)	1011 CF (16+11)	1100 CF (16+12)	1101 CF (16+13)	1110 CF (16+14)

(P1) (P3) Carry Flag (CF) in unsigned 4-bit additions  
 (P2) (P4)

# Overflow flag in the signed 4-bit addition table (1)

	0000 (0)	0001 (+1)	0010 (+2)	0011 (+3)	0100 (+4)	0101 (+5)	0110 (+6)	0111 (+7)
0000 (0)	0000 (0)	0001 (+1)	0010 (+2)	0011 (+3)	0100 (+4)	0101 (+5)	0110 (+6)	0111 (+7)
0001 (+1)	0001 (+1)	0010 (+2)	0011 (+3)	0100 (+4)	0101 (+5)	0110 (+6)	0111 (+7)	1000 (-8) OF
0010 (+2)	0010 (+2)	0011 (+3)	0100 (+4)	0101 (+5)	0110 (+6)	0111 (+7)	1000 (-8) OF	1001 (-7) OF
0011 (+3)	0011 (+3)	0100 (+4)	0101 (+5)	0110 (+6)	0111 (+7)	1000 (-8) OF	1001 (-7) OF	1010 (-6) OF
0100 (+4)	0100 (+4)	0101 (+5)	0110 (+6)	0111 (+7)	1000 (-8) OF	1001 (-7) OF	1010 (-6) OF	1011 (-5) OF
0101 (+5)	0101 (+5)	0110 (+6)	0111 (+7)	1000 (-8) OF	1001 (-7) OF	1010 (-6) OF	1011 (-5) OF	1100 (-4) OF
0110 (+6)	0110 (+6)	0111 (+7)	1000 (-8) OF	1001 (-7) OF	1010 (-6) OF	1011 (-5) OF	1100 (-4) OF	1101 (-3) OF
0111 (+7)	0111 (+7)	1000 (-8) OF	1001 (-7) OF	1010 (-6) OF	1011 (-5) OF	1100 (-4) OF	1101 (-3) OF	1110 (-2) OF

.....

(P1) (P3) Overflow Flag (OF) in signed 4-bit additions  
 (P2) (P4)

# Overflow flag in the signed 4-bit addition table (2)

	0000 (0)	0001 (+1)	0010 (+2)	0011 (+3)	0100 (+4)	0101 (+5)	0110 (+6)	0111 (+7)
1000 (-8)	1000 (-8)	1001 (-7)	1010 (-6)	1011 (-5)	1100 (-4)	1101 (-3)	1110 (-2)	1111 (-1)
1001 (-7)	1001 (-7)	1010 (-6)	1011 (-5)	1100 (-4)	1101 (-3)	1110 (-2)	1111 (-1)	0000 (0)
1010 (-6)	1010 (-6)	1011 (-5)	1100 (-4)	1101 (-3)	1110 (-2)	1111 (-1)	0000 (0)	0001 (+1)
1011 (-5)	1011 (-5)	1100 (-4)	1101 (-3)	1110 (-2)	1111 (-1)	0000 (0)	0001 (+1)	0010 (+2)
1100 (-4)	1100 (-4)	1101 (-3)	1110 (-2)	1111 (-1)	0000 (0)	0001 (+1)	0010 (+2)	0011 (+3)
1101 (-3)	1101 (-3)	1110 (-2)	1111 (-1)	0000 (0)	0001 (+1)	0010 (+2)	0011 (+3)	0100 (+4)
1110 (-2)	1110 (-2)	1111 (-1)	0000 (0)	0001 (+1)	0010 (+2)	0011 (+3)	0100 (+4)	0101 (+5)
1111 (-1)	1111 (-1)	0000 (0)	0001 (+1)	0010 (+2)	0011 (+3)	0100 (+4)	0101 (+5)	0110 (+6)

(P1) (P3) Overflow Flag (OF) in signed 4-bit additions  
 (P2) (P4)

# Overflow flag in the signed 4-bit addition table (3)

	1000 (-8)	1001 (-7)	1010 (-6)	1011 (-5)	1100 (-4)	1101 (-3)	1110 (-2)	1111 (-1)
0000 (0)	1000 (-8)	1001 (-7)	1010 (-6)	1011 (-5)	1100 (-4)	1101 (-3)	1110 (-2)	1111 (-1)
0001 (+1)	1001 (-7)	1010 (-6)	1011 (-5)	1100 (-4)	1101 (-3)	1110 (-2)	1111 (-1)	0000 (0)
0010 (+2)	1010 (-6)	1011 (-5)	1100 (-4)	1101 (-3)	1110 (-2)	1111 (-1)	0000 (0)	0001 (+1)
0011 (+3)	1011 (-5)	1100 (-4)	1101 (-3)	1110 (-2)	1111 (-1)	0000 (0)	0001 (+1)	0010 (+2)
0100 (+4)	1100 (-4)	1101 (-3)	1110 (-2)	1111 (-1)	0000 (0)	0001 (+1)	0010 (+2)	0011 (+3)
0101 (+5)	1101 (-3)	1110 (-2)	1111 (-1)	0000 (0)	0001 (+1)	0010 (+2)	0011 (+3)	0100 (+4)
0110 (+6)	1110 (-2)	1111 (-1)	0000 (0)	0001 (+1)	0010 (+2)	0011 (+3)	0100 (+4)	0101 (+5)
0111 (+7)	1111 (-1)	0000 (0)	0001 (+1)	0010 (+2)	0011 (+3)	0100 (+4)	0101 (+5)	0110 (+6)

.....

(P1) (P3) Overflow Flag (OF) in signed 4-bit additions  
(P2) (P4)

# Overflow flag in the signed 4-bit addition table (4)

	1000 (-8)	1001 (-7)	1010 (-6)	1011 (-5)	1100 (-4)	1101 (-3)	1110 (-2)	1111 (-1)
1000 (-8)	0000 ( 0) OF	0001 (+1) OF	0010 (+2) OF	0011 (+3) OF	0100 (+4) OF	0101 (+5) OF	0110 (+6) OF	0111 (+7) OF
1001 (-7)	0001 (+1) OF	0010 (+2) OF	0011 (+3) OF	0100 (+4) OF	0101 (+5) OF	0110 (+6) OF	0111 (+7) OF	1000 (-8)
1010 (-6)	0010 (+2) OF	0011 (+3) OF	0100 (+4) OF	0101 (+5) OF	0110 (+6) OF	0111 (+7) OF	1000 (-8)	1001 (-7)
1011 (-5)	0011 (+3) OF	0100 (+4) OF	0101 (+5) OF	0110 (+6) OF	0111 (+7) OF	1000 (-8)	1001 (-7)	1010 (-6)
1100 (-4)	0100 (+4) OF	0101 (+5) OF	0110 (+6) OF	0111 (+7) OF	1000 (-8)	1001 (-7)	1010 (-6)	1011 (-5)
1101 (-3)	0101 (+5) OF	0110 (+6) OF	0111 (+7) OF	1000 (-8)	1001 (-7)	1010 (-6)	1011 (-5)	1100 (-4)
1110 (-2)	0110 (+6) OF	0111 (+7) OF	1000 (-8)	1001 (-7)	1010 (-6)	1011 (-5)	1100 (-4)	1101 (-3)
1111 (-1)	0111 (+7) OF	1000 (-8)	1001 (-7)	1010 (-6)	1011 (-5)	1100 (-4)	1101 (-3)	1110 (-2)

(P1) (P3) Overflow Flag (OF) in signed 4-bit additions  
 (P2) (P4)

# TOC: Summary of the 4-bit addition table

- Unsigned 4-bit addition table
- Signed 4-bit addition table
- The 4-bit binary addition table
- The carry flag table
- The overflow flag table
- The carry and overflow flag table

# Unsigned 4-bit addition table

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
0	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	C0
2	2	3	4	5	6	7	8	9	10	11	12	13	14	15	C0	C1
3	3	4	5	6	7	8	9	10	11	12	13	14	15	C0	C1	C2
4	4	5	6	7	8	9	10	11	12	13	14	15	C0	C1	C2	C3
5	5	6	7	8	9	10	11	12	13	14	15	C0	C1	C2	C3	C4
6	6	7	8	9	10	11	12	13	14	15	C0	C1	C2	C3	C4	C5
7	7	8	9	10	11	12	13	14	15	C0	C1	C2	C3	C4	C5	C6
8	8	9	10	11	12	13	14	15	C0	C1	C2	C3	C4	C5	C6	C7
9	9	10	11	12	13	14	15	C0	C1	C2	C3	C4	C5	C6	C7	C8
10	10	11	12	13	14	15	C0	C1	C2	C3	C4	C5	C6	C7	C8	C9
11	11	12	13	14	15	C0	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10
12	12	13	14	15	C0	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11
13	13	14	15	C0	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12
14	14	15	C0	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13
15	15	C0	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11	C12	C13	C14

C : Carry Flag



# Signed 4-bit addition table

	0	1	2	3	4	5	6	7	-8	-7	-6	-5	-4	-3	-2	-1
0	0	1	2	3	4	5	6	7	-8	-7	-6	-5	-4	-3	-2	-1
1	1	2	3	4	5	6	7	<u>-8o</u>	-7	-6	-5	-4	-3	-2	-1	0
2	2	3	4	5	6	7	<u>-8o</u>	<u>-7o</u>	-6	-5	-4	-3	-2	-1	0	1
3	3	4	5	6	7	<u>-8o</u>	<u>-7o</u>	<u>-6o</u>	-5	-4	-3	-2	-1	0	1	2
4	4	5	6	7	<u>-8o</u>	<u>-7o</u>	<u>-6o</u>	<u>-5o</u>	-4	-3	-2	-1	0	1	2	3
5	5	6	7	<u>-8o</u>	<u>-7o</u>	<u>-6o</u>	<u>-5o</u>	<u>-4o</u>	-3	-2	-1	0	1	2	3	4
6	6	7	<u>-8o</u>	<u>-7o</u>	<u>-6o</u>	<u>-5o</u>	<u>-4o</u>	<u>-3o</u>	-2	-1	0	1	2	3	4	5
7	7	<u>-8o</u>	<u>-7o</u>	<u>-6o</u>	<u>-5o</u>	<u>-4o</u>	<u>-3o</u>	<u>-2o</u>	-1	0	1	2	3	4	5	6
-8	-8	-7	-6	-5	-4	-3	-2	-1	<u>0o</u>	<u>1o</u>	<u>2o</u>	<u>3o</u>	<u>4o</u>	<u>5o</u>	<u>6o</u>	<u>7o</u>
-7	-7	-6	-5	-4	-3	-2	-1	0	<u>1o</u>	<u>2o</u>	<u>3o</u>	<u>4o</u>	<u>5o</u>	<u>6o</u>	<u>7o</u>	-8
-6	-6	-5	-4	-3	-2	-1	0	1	<u>2o</u>	<u>3o</u>	<u>4o</u>	<u>5o</u>	<u>6o</u>	<u>7o</u>	-8	-7
-5	-5	-4	-3	-2	-1	0	1	2	<u>3o</u>	<u>4o</u>	<u>5o</u>	<u>6o</u>	<u>7o</u>	-8	-7	-6
-4	-4	-3	-2	-1	0	1	2	3	<u>4o</u>	<u>5o</u>	<u>6o</u>	<u>7o</u>	-8	-7	-6	-5
-3	-3	-2	-1	0	1	2	3	4	<u>5o</u>	<u>6o</u>	<u>7o</u>	-8	-7	-6	-5	-4
-2	-2	-1	0	1	2	3	4	5	<u>6o</u>	<u>7o</u>	-8	-7	-6	-5	-4	-3
-1	-1	0	1	2	3	4	5	6	<u>7x</u>	-8	-7	-6	-5	-4	-3	-2

o : Overflow Flag

# The 4-bit binary addition table

	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
0000	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
0001	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111	0000
0010	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111	0000	0001
0011	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111	0000	0001	0010
0100	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111	0000	0001	0010	0011
0101	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111	0000	0001	0010	0011	0100
0110	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111	0000	0001	0010	0011	0100	0101
0111	0111	1000	1001	1010	1011	1100	1101	1110	1111	0000	0001	0010	0011	0100	0101	0110
1000	1000	1001	1010	1011	1100	1101	1110	1111	0000	0001	0010	0011	0100	0101	0110	0111
1001	1001	1010	1011	1100	1101	1110	1111	0000	0001	0010	0011	0100	0101	0110	0111	1000
1010	1010	1011	1100	1101	1110	1111	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001
1011	1011	1100	1101	1110	1111	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010
1100	1100	1101	1110	1111	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011
1101	1101	1110	1111	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100
1110	1110	1111	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101
1111	1111	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110

# The carry flag table

	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
0000																
0001																C
0010															C	C
0011														C	C	C
0100												C	C	C	C	C
0110											C	C	C	C	C	C
0111										C	C	C	C	C	C	C
1000									C	C	C	C	C	C	C	C
1001								C	C	C	C	C	C	C	C	C
1010							C	C	C	C	C	C	C	C	C	C
1011						C	C	C	C	C	C	C	C	C	C	C
1100				C	C	C	C	C	C	C	C	C	C	C	C	C
1101			C	C	C	C	C	C	C	C	C	C	C	C	C	C
1110		C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
1111	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C

C : Carry Flag

# The overflow flag table

	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
0000																
0001								0								
0010							0	0								
0011						0	0	0								
0100					0	0	0	0								
0101				0	0	0	0	0								
0110			0	0	0	0	0	0								
0111		0	0	0	0	0	0	0								
1000									0	0	0	0	0	0	0	0
1001									0	0	0	0	0	0	0	0
1010									0	0	0	0	0	0		
1011									0	0	0	0	0			
1100									0	0	0	0				
1101									0	0	0					
1110									0	0						
1111									0							

0 : Overflow Flag

# The carry and overflow flag table

	0000	0001	0010	0011	0100	0101	0110	0111	1000	1001	1010	1011	1100	1101	1110	1111
0000																
0001								O								C
0010							O	O							C	C
0011						O	O	O						C	C	C
0100					O	O	O	O					C	C	C	C
0101				O	O	O	O	O				C	C	C	C	C
0110			O	O	O	O	O	O			C	C	C	C	C	C
0111		O	O	O	O	O	O	O		C	C	C	C	C	C	C
1000									CO	CO	CO	CO	CO	CO	CO	CO
1001								C	CO	CO	CO	CO	CO	CO	CO	C
1010							C	C	CO	CO	CO	CO	CO	CO	C	C
1011						C	C	C	CO	CO	CO	CO	CO	C	C	C
1100					C	C	C	C	CO	CO	CO	CO	C	C	C	C
1101				C	C	C	C	C	CO	CO	CO	C	C	C	C	C
1110			C	C	C	C	C	C	CO	CO	C	C	C	C	C	C
1111	C	C	C	C	C	C	C	C	CO	C	C	C	C	C	C	C

C : Carry Flag    O : Overflow Flag