

Example nr 1: Convert of 4450<sub>10</sub> to binary.

Step nr.		A	B	C
1	Form a table with three columns, A, B and C.			
2	Place the number to be converted at the 1 <sup>st</sup> cell of column A.	4450		
3	Is it an even number? Copy it to the 1 <sup>st</sup> cell of column B. Is it an odd number? Subtract 1 and place the result to the 1 <sup>st</sup> cell of column B.	4450	4450	
4	Subtract the 1 <sup>st</sup> cell of column B from the 1 <sup>st</sup> cell of column A. Place the result to the 1 <sup>st</sup> cell of column C. This is the LSB of the result	4450	4450	0
5	Divide the content of the 1 <sup>st</sup> cell of column B by 2. Place the result at the 2 <sup>nd</sup> cell of column A	2225		
6	Is it an even number? Copy it to the 2 <sup>nd</sup> cell of column B. Is it an odd number? Subtract 1 and place the result to the 2 <sup>nd</sup> cell of column B.	2225	2224	
7	Subtract the 2 <sup>nd</sup> cell of column B from the 2 <sup>nd</sup> cell of column A. Place the result to the 2 <sup>nd</sup> cell of column C.	2225	2224	1
8	Repeat steps 5 to 7 for the 3 <sup>rd</sup> row of cells	1112	1112	0
9	Repeat steps 5 to 7 for as many times as necessary...	556	556	0
10		278	278	0
11		139	138	1
12		69	68	1
13		34	34	0
14		17	16	1
15		8	8	0
16		4	4	0
17		2	2	0
18	to get the values 1 0 1 in columns A, B and C, respectively. This is the last row of the table and represents the MSB.	1	0	1
19	Starting from the top of the conversion table; place the content of the cell at column C at the rightmost position of the result:			0 <sub>2</sub>
20	Move one row down in the conversion table; place the content of the cell at column C at the position left of the previous bit:			10 <sub>2</sub>
21	Repeat step 20 for all rows of the conversion table, placing the content of each cell at column C at the position left of the previous bit:			1000101100010 <sub>2</sub>
22	In this case, the result is: 1000101100010 <sub>2</sub>			

Example nr 2: Convert of  $390_{10}$  to binary.

Step nr.		A	B	C
1	Form a table with three columns, A, B and C.			
2	Place the number to be converted at the 1 <sup>st</sup> cell of column A.	390		
3	Is it an even number? Copy it to the 1 <sup>st</sup> cell of column B. Is it an odd number? Subtract 1 and place the result to the 1 <sup>st</sup> cell of column B.	390	390	
4	Subtract the 1 <sup>st</sup> cell of column B from the 1 <sup>st</sup> cell of column A. Place the result to the 1 <sup>st</sup> cell of column C. This is the LSB of the result	390	390	0
5	Divide the content of the 1 <sup>st</sup> cell of column B by 2. Place the result at the 2 <sup>nd</sup> cell of column A	195		
6	Is it an even number? Copy it to the 2 <sup>nd</sup> cell of column B. Is it an odd number? Subtract 1 and place the result to the 2 <sup>nd</sup> cell of column B.	195	194	
7	Subtract the 2 <sup>nd</sup> cell of column B from the 2 <sup>nd</sup> cell of column A. Place the result to the 2 <sup>nd</sup> cell of column C.	195	194	1
8	Repeat steps 5 to 7 for the 3 <sup>rd</sup> row of cells	97	96	1
9	Repeat steps 5 to 7 for as many times as necessary...	48	48	0
10		24	24	0
11		12	12	0
12		6	6	0
13		3	2	1
14	to get the values 1 0 1 in columns A, B and C, respectively. This is the last row of the table and represents the MSB.	1	0	1
15	Starting from the top of the conversion table; place the content of the cell at column C at the rightmost position of the result:			$0_2$
16	Move one row down in the conversion table; place the content of the cell at column C at the position left of the previous bit:			$10_2$
17	Repeat step 16 for all rows of the conversion table, placing the content of each cell at column C at the position left of the previous bit:			$110000110_2$
18	In this case, the result is: $110000110_2$			

Example nr 3: Convert of  $119_{10}$  to binary.

Step nr.		A	B	C
1	Form a table with three columns, A, B and C.			
2	Place the number to be converted at the 1 <sup>st</sup> cell of column A.	119		
3	Is it an even number? Copy it to the 1 <sup>st</sup> cell of column B. Is it an odd number? Subtract 1 and place the result to the 1 <sup>st</sup> cell of column B.	119	118	
4	Subtract the 1 <sup>st</sup> cell of column B from the 1 <sup>st</sup> cell of column A. Place the result to the 1 <sup>st</sup> cell of column C. This is the LSB of the result	119	118	1
5	Divide the content of the 1 <sup>st</sup> cell of column B by 2. Place the result at the 2 <sup>nd</sup> cell of column A	59		
6	Is it an even number? Copy it to the 2 <sup>nd</sup> cell of column B. Is it an odd number? Subtract 1 and place the result to the 2 <sup>nd</sup> cell of column B.	59	58	
7	Subtract the 2 <sup>nd</sup> cell of column B from the 2 <sup>nd</sup> cell of column A. Place the result to the 2 <sup>nd</sup> cell of column C.	59	58	1
8	Repeat steps 5 to 7 for the 3 <sup>rd</sup> row of cells	29	28	1
9	Repeat steps 5 to 7 for as many times as necessary...	14	14	0
10		7	6	1
11		3	2	1
12	to get the values 1 0 1 in columns A, B and C, respectively. This is the last row of the table and represents the MSB.	1	0	1
13	Starting from the top of the conversion table; place the content of the cell at column C at the rightmost position of the result:			$1_2$
14	Move one row down in the conversion table; place the content of the cell at column C at the position left of the previous bit:			$11_2$
15	Repeat step 14 for all rows of the conversion table, placing the content of each cell at column C at the position left of the previous bit:			$1110111_2$
16	In this case, the result is: $1110111_2$			

Example nr 4: Convert of  $85_{10}$  to binary.

Step nr.		A	B	C
1	Form a table with three columns, A, B and C.			
2	Place the number to be converted at the 1 <sup>st</sup> cell of column A.	85		
3	Is it an even number? Copy it to the 1 <sup>st</sup> cell of column B. Is it an odd number? Subtract 1 and place the result to the 1 <sup>st</sup> cell of column B.	85	84	
4	Subtract the 1 <sup>st</sup> cell of column B from the 1 <sup>st</sup> cell of column A. Place the result to the 1 <sup>st</sup> cell of column C. This is the LSB of the result	85	84	1
5	Divide the content of the 1 <sup>st</sup> cell of column B by 2. Place the result at the 2 <sup>nd</sup> cell of column A	42		
6	Is it an even number? Copy it to the 2 <sup>nd</sup> cell of column B. Is it an odd number? Subtract 1 and place the result to the 2 <sup>nd</sup> cell of column B.	42	42	
7	Subtract the 2 <sup>nd</sup> cell of column B from the 2 <sup>nd</sup> cell of column A. Place the result to the 2 <sup>nd</sup> cell of column C.	42	42	0
8	Repeat steps 5 to 7 for the 3 <sup>rd</sup> row of cells	21	20	1
9	Repeat steps 5 to 7 for as many times as necessary...	10	10	0
10		5	4	1
11		2	2	0
12	to get the values 1 0 1 in columns A, B and C, respectively. This is the last row of the table and represents the MSB.	1	0	1
13	Starting from the top of the conversion table; place the content of the cell at column C at the rightmost position of the result:			$1_2$
14	Move one row down in the conversion table; place the content of the cell at column C at the position left of the previous bit:			$01_2$
15	Repeat step 14 for all rows of the conversion table, placing the content of each cell at column C at the position left of the previous bit:			$1010101_2$
16	In this case, the result is: $1010101_2$			