

# **Binary to ASCII Code conversion**

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## BINARY TO ASCII CODE CONVERSION

### AIM

To write an assembly language program to convert binary code in to ASCII code

### ASSEMBLY LANGUAGE PROGRAM

```

C100 LDA  C200    3A ; Load the accumulator with binary number
C101                00 ;
C102                C2 ;
C103 CPI  0A     FE ; Compare immediately the accumulator content
C104                0A ; with 0AH
C105 JC   C10A   DA ; Jump if carry to C10AH
C106                0A ;
C107                C1 ;
C108 ADI  07     C6 ; Add immediate data 07H to the accumulator
C109                07 ;
C10A ADI  30     C6 ; Add immediate data 30H to the accumulator
C10B                30 ;
C10C STA  C202   32 ; Store the accumulator content at C202H
C10D                02 ;
C10E                C2 ;
C10F HLT                    76 ; Halt the execution

```

### EXECUTION - 1

C200 0A ; Binary Number (Input data)

C202 41 ; ASCII Number (Output data)

### PROGRAM TRACE

Addr	MC	Mnemonic	A	B	C	D	E	H	L	SP	Flag Word
			00	00	00	00	00	00	00	0000	0000 0000
C100	3A	LDA C200	0A	00	00	00	00	00	00	0000	0000 0000
C103	FE	CPI 0A	0A	00	00	00	00	00	00	0000	0101 0100
C105	DA	JC C10A	0A	00	00	00	00	00	00	0000	0101 0100
C108	C6	ADI 07	11	00	00	00	00	00	00	0000	0001 0100
C10A	C6	ADI 30	41	00	00	00	00	00	00	0000	0000 0100
C10C	32	STA C202	41	00	00	00	00	00	00	0000	0000 0100
C10F	76	HLT	41	00	00	00	00	00	00	0000	0000 0100

### FLAG WORD

S	Z	x	Ac	x	P	x	Cv
0	0	0	0	0	1	0	0

## EXECUTION - 2

C200 ED ;Binary Number (Input data)  
C202 24 ;ASCII Number (Output data)

## PROGRAM TRACE

Addr	MC	Mnemonic	A	B	C	D	E	H	L	SP	Flag Word
			00	00	00	00	00	00	00	0000	0000 0000
C100	3A	LDA C200	ED	00	00	00	00	00	00	0000	0000 0000
C103	FE	CPI 0A	ED	00	00	00	00	00	00	0000	1001 0000
C105	DA	JC C10A	ED	00	00	00	00	00	00	0000	1001 0000
C108	C6	ADI 07	F4	00	00	00	00	00	00	0000	1001 0000
C10A	C6	ADI 30	24	00	00	00	00	00	00	0000	0000 0101
C10C	32	STA C202	24	00	00	00	00	00	00	0000	0000 0101
C10F	76	HLT	24	00	00	00	00	00	00	0000	0000 0101

## FLAG WORD

S	Z	x	Ac	x	P	x	Cy
0	0	0	0	0	1	0	1

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