ADC
COUNTER METHOD

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ADC - COUNTER METHOD

OBJECTIVE

To write an assembly language program to interface ADC with 8085 Microprocessor Trainer Kit using counter method

APPARATUS REQUIRED

- 8085 Microprocessor Trainer kit
- Power supply (+5v)
- Flat Ribbon Cable
- ADC interfacing kit (COUTER METHOD)

ALGORITHM

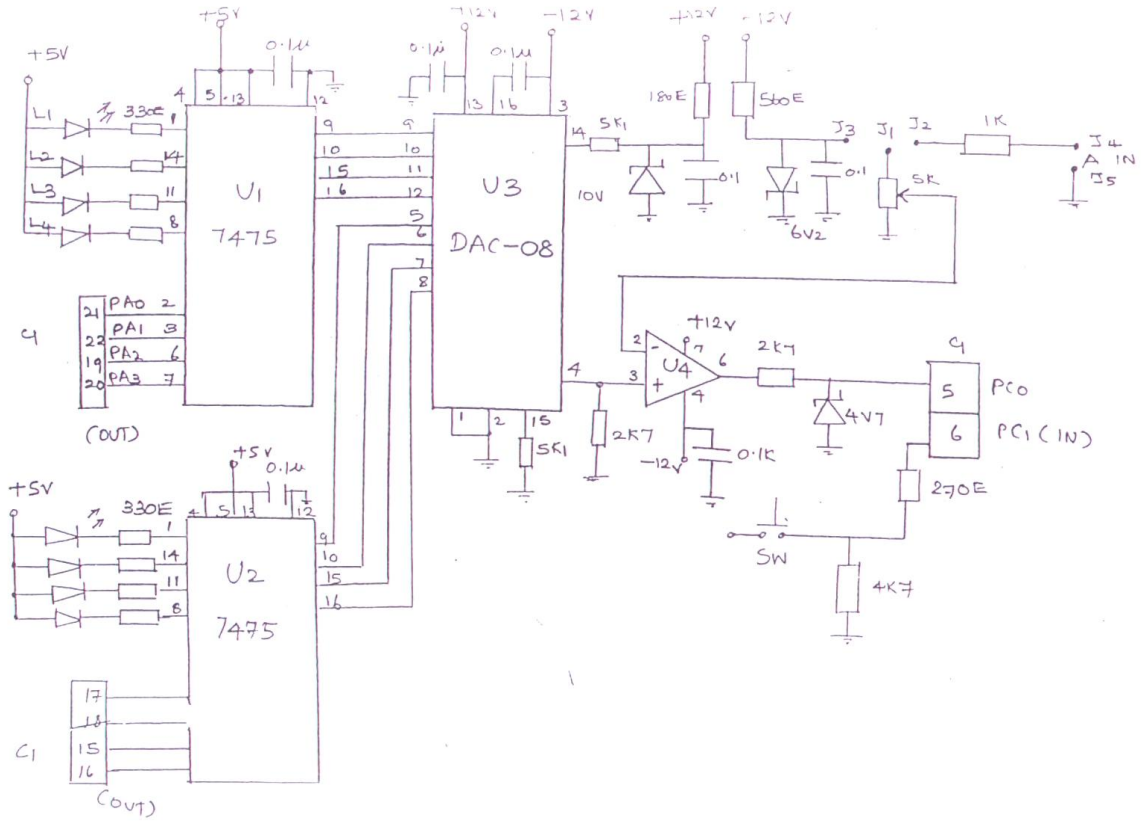
1.Initialize 8255 in I/O operation
2.Set digital equivalent as of 00_H
3.Send the digital value to DAC
4.Compare analog voltage to the given input voltage
5.If the voltage is less than unknown voltage the digital value is the output
6.Else increment digital value and repeat the steps 2 & 3

ASSEMBLY LANGUAGE PROGRAM

ADDRESS	LABEL	MNEMONICS	OPCODE/OPERAND
C100		**MVI A,81$_H$**	3E 81
C102		**OUT CWR**	D3 DB
C104	**REPEAT**	**IN PORTC**	DB DA
C106		**ANI 02 $_H$**	E6 02
C108		**JZ REPEAT**	CA 04 C1
C10B		**MVI B,00 $_H$**	06 00
C10D	**NEXT**	**MOV A,B**	78
C10E		**OUT PORTA**	D3 D8
C110		**CALL DELAY**	CD 28 C1
C113		**IN PORTC**	DB DA
C115		**ANI 01 $_H$**	E6 01
C117		**JZ DISPLAY**	CA 1E C1
C11A		**INR B**	04
C11B		**JMP NEXT**	C3 0D C1
C11E	**DISPLAY**	**MOV A,B**	78
C11F		**STA FFF9 $_H$**	32 F9 FF
C122		**CALL UPDDT**	CD D3 06
C125		**JMP REPEAT**	C3 04 C1
C128	**DELAY**	**LXI D,1010 $_H$**	11 10 10
C12B	**XX**	**DCX D**	1B
C12E		**MOV A,D**	7A
C12F		**ORA E**	B3
C130		**JNZ XX**	C2 2B C1
C133		**RET**	C9

CIRCUIT DIAGRAM

ADC INTERFACE - COUNTER METHOD



EXECUTION

INPUT	OUTPUT	INPUT	OUTPUT
$4A_H$	1.4	BB_H	3.4
58_H	1.6	BD_H	3.5
71_H	2.1	$D6_H$	4.1
87_H	2.5	DB_H	4.2
$9A_H$	2.9	$F0_H$	4.5
$9E_H$	3.0	$F1_H$	4.6
$A5_H$	3.1	$F3_H$	4.7

REFERENCE

1. Ramesh S.Gaonkar, Microprocessor Architecture, Programming, and Applications, Fourth Edition, Penram International Publishing (India), 2000.

2. S.Subathra, “Programming in 8085 Microprocessor and its applications – An Innovative Analysis”, Technical Report, Adhiparashakthi Engineering College, Melmaruvathur, March 2003