Input-Output Programming → 8085 microprocessor has two serial input/output pins that are used to read/write one bit data to and from Peripheral devices. IN and OUT are the instruction through which these operation can be done on Peripheral devices.

Eg: Write a program to generate continuous Square wave:-

The alternate pattern of 0/1 bits can be provided by loading the accumulator with AA (10101010) and rotating the pattern once through each loop. Bit D_0 of the output port is used to send logic 0 and 1. Therefore, all other bits can be masked by ANDing the accumulator with 01H.

Program:-

Address		mnemonics	operand/data	Comments
2000		MVI	D AA	Load bit pattern AA
2002	Rotate	MOV	A,D	load pattern in A
2003		RLC		Chang data AA to 55 and vice versa
2004		MOV	D,A	Save content of A
2005,06		ANI	01	mask bits D_7 to D_1 only (except D_0)
2007,08,		OUT	PORT 1	Output the D_0 bit
2009		JMP	Rotate	

Accumulator : 1 0 1 0 1 0 1 0
AND with 01 : 0 0 0 0 0 0 0 1
Output : 0 0 0 0 0 0 0 0
So output ⇒ 0

After RLC

Accumulator : 01010101
AND with 01 : 00000001
Output : 00000001
So output => 1

Program Description :

1. Register D is loaded with AAH (10101010)
2. Bit Pattern is moved to accumulator.
3. Bit Pattern is rotated left and saved again in register D. This save is necessary as accumulator is used again in program.
4. Mask all bits but 0^{th} bit.
5. Output A at Port 1