



**KLS'S GOGTE INSTITUTE OF TECHNOLOGY
DEPARTMENT OF MECHANICAL ENGINEERING**

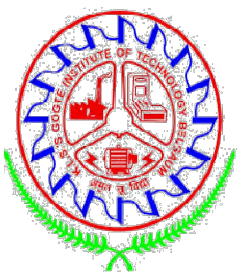


CREINTORS AUTOMATION SOLUTIONS PVT.LTD.

PRESENTS

HONOR'S PROGRAM IN PLC PROGRAMMING





Syllabus of Course



1. Basic of PLC

2. PLC Programming

3. SCADA Programming

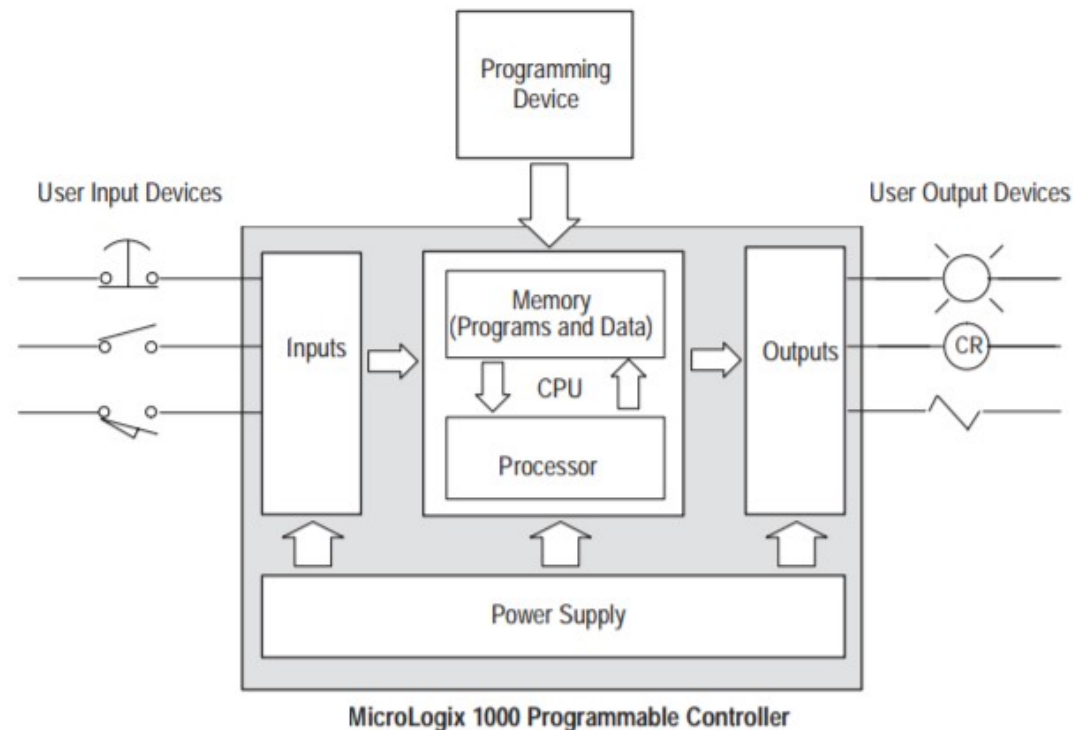


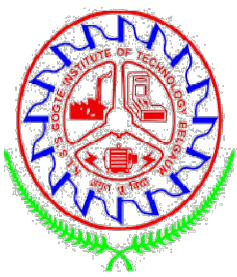


Block Diagram of PLC



The controller consists of a built-in power supply, central processing unit (CPU), inputs, which you wire to input devices (such as pushbuttons, proximity sensors, limit switches), and outputs, which you wire to output devices (such as motor starters, solid-state relays, and indicator lights).



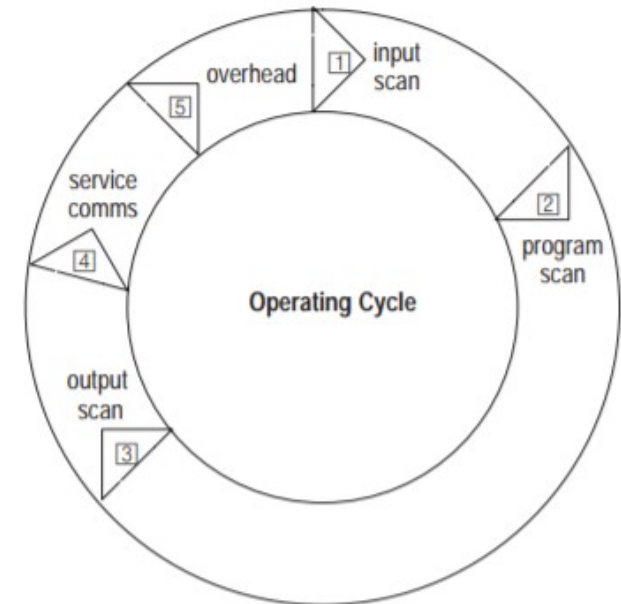


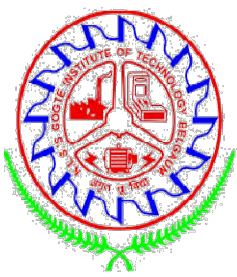
SCAN Time



SCAN Time -

The scan cycle is the cycle of which the PLC gathers the inputs, runs your PLC program and then updates the outputs. This will take some amount of time often measured in milliseconds or ms. The amount of time it takes for the PLC to make one scan cycle is called the scan time of the PLC

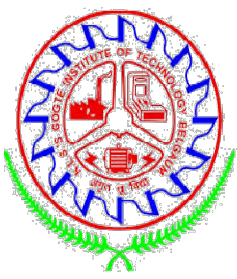




SCAN Time



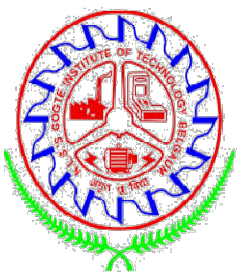
1. **Input scan** – the time required for the controller to **scan and read all input data**; typically accomplished within μ seconds.
2. **Program scan** – the time required for the processor to **execute the instructions in the program**. The program scan time varies depending on the instructions used and each instruction's status during the scan time.
Note Subroutine and interrupt instructions within your logic program may cause deviations in the way the operating cycle is sequenced.
3. **Output scan** – the time required for the controller to **scan and write all output data**; typically accomplished within μ seconds.
4. **Service communications** – the part of the operating cycle in which **communication takes place with other devices**, such as an Machine or personal computer.
5. **Housekeeping and overhead** – time spent on **memory management and updating timers and internal registers**. You enter a logic program into the controller using a programming device. The logic program is based on your electrical relay print diagrams. It contains instructions that direct control of your application



Identification of Inputs and Outputs Addressing



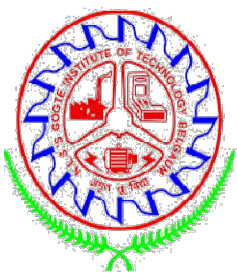
File Type	Identifier	File Number
Output	O	0
Input	I	1
Status	S	2
Bit	B	3
Timer	T	4
Counter	C	5
Control	R	6
Integer	N	7
Floating	F	8



Address or Memory Map



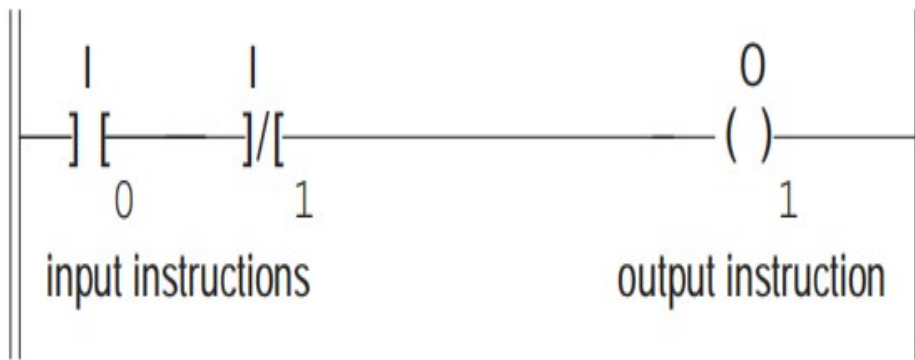
Output Image	%O:0 to %O:277
Input Image	%I:0 to %I:277
Status	%S:0 to %S:128
Bit (Binary)	%B3:0 to %B3:999
Timer	%T4:0 to %T4:999
Counter	%C5:0 to %C5:999
Control	%R6:0 to %R6:999
Integer	%N7:0 to %N7:999
Floating-point	%F8:0 to %F8:999
Assign File Type as Needed	_%9:0 to %_999:999



Basic Ladder Programme



The logic you enter into the micro controller makes up a ladder program. A ladder program consists of a set of instructions used to control a machine or a process.



If PB1 is:	I/0 state is:	And PB2 is:	I/1 state is:	Then the Alarm Horn (O/1) is:
not pushed	0	not pushed	1	silent
not pushed	0	pushed	0	silent
pushed	1	not pushed	1	alarm
pushed	1	pushed	0	silent

A black and white photograph of a perforated metal surface, possibly a grate or a screen. The surface is covered with a grid of small, circular holes. The lighting is dramatic, with strong highlights and deep shadows, creating a textured appearance. The text "THANK YOU" is overlaid in the center in a bold, white, sans-serif font.

THANK YOU