



Robotics & Automation

– Automation Cycle

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First Unit of the syllabus

Basics of Automation – Industrial automation – Elements – types - PLC introduction - input and output devices of a PLC - PLC basics – basics of **PLC programming**– Automation cycle – ROI in automation – SLDC – Factory automation - manufacturing automation – process automation – need – difference between various type of automation – benefits of each type





Input and Output devices of PLC

Push Buttons



Selector Switch



Limit Switch



Proximity Sensor

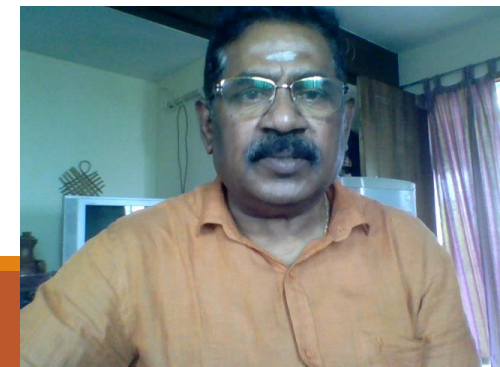


Photo Sensor

PLC Inputs

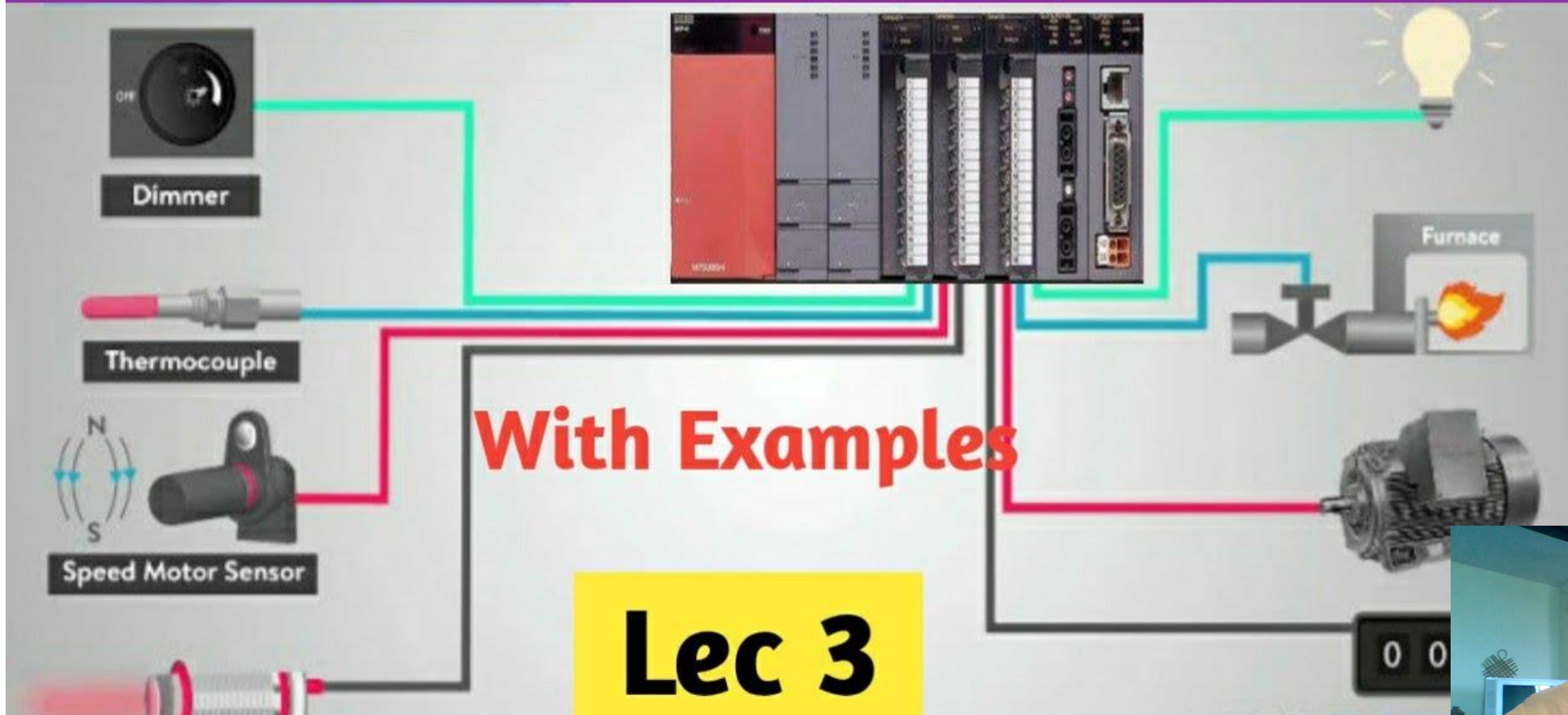


PLC





Types of Output Devices to PLC



With Examples

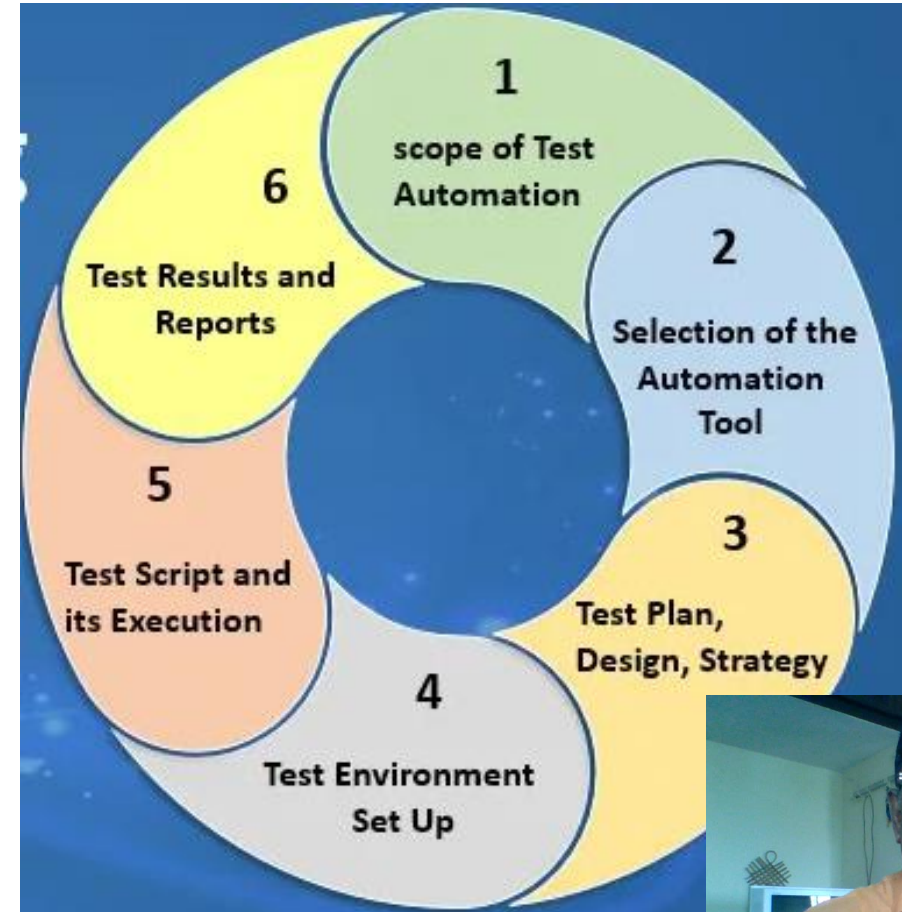
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What is automation cycle?

Test Automation is applied with the structural sequence of testing process, that can have all the stages of testing life cycle with additional phases for including the test preparation and automation implementation processes



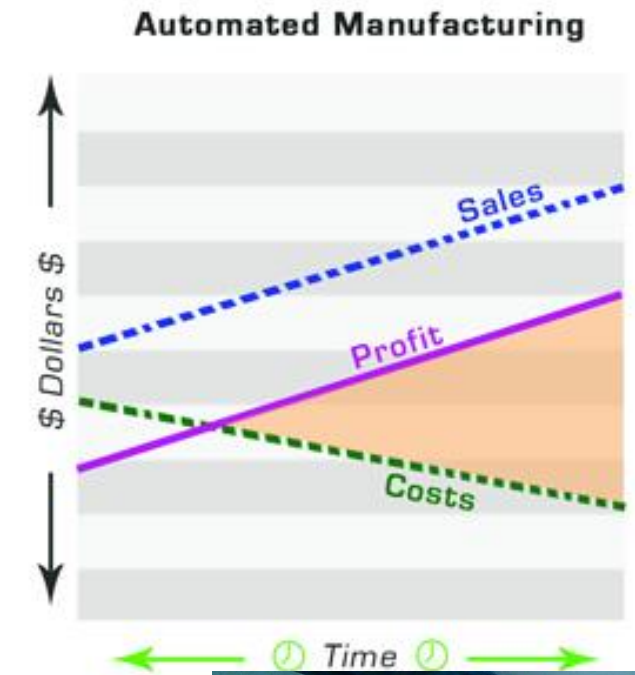


Return on Invest (ROI)

ROI = Savings ÷ Investment.

Where Savings Denotes : The amount gained by substituting manual tests with automated tests. It is the difference between the cost of running manual task with the automated tasks

$$\text{ROI} = \frac{\text{Gains} - \text{Investment}}{\text{Investment}} \times 100$$

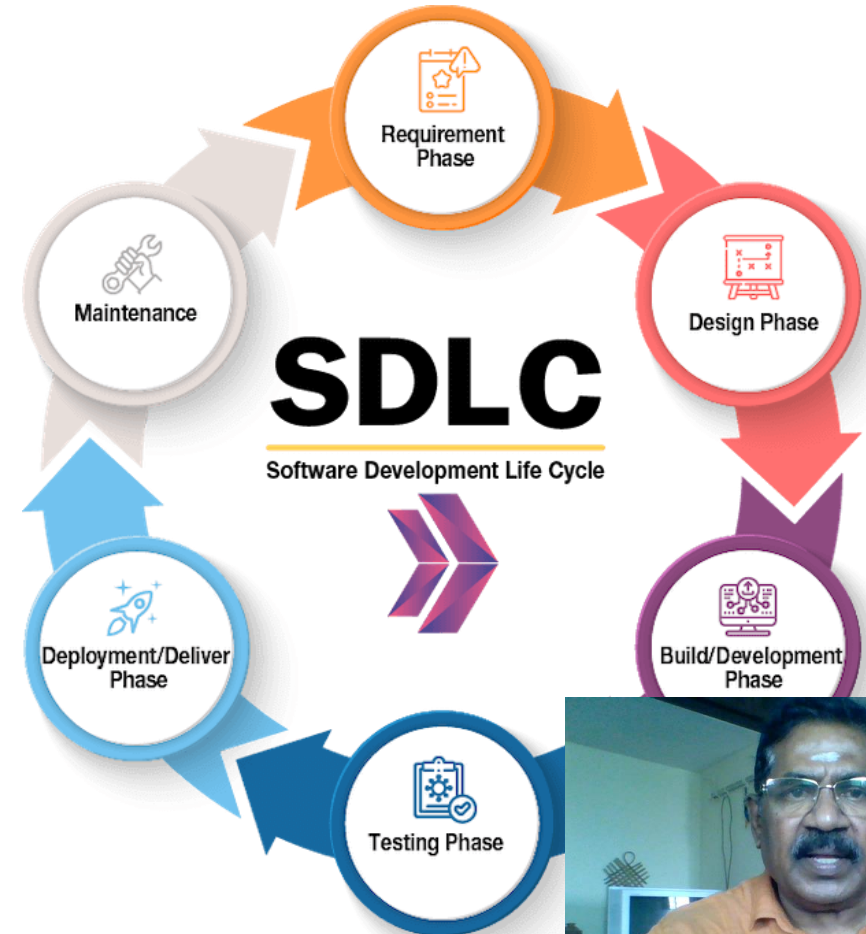




What is automation in SDLC?

SDLC (Software Development Life Cycle) automation is the future of software development.

It enables the attainment of high-quality software with minimum manual labor, time, and cost along with a high level of productivity and efficiency.





SDLC PHASES

