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course:- Logic design.

topic:- Application of PLC.

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- \* A PLC (programmable logic controller) is a ruggedized computer used for Industrial Application Automation. These contain a Automatic a specific process, Machine Function (or) Even Entire Production wise.
- \* Working Contains  $\rightarrow$  I/O  
 $\rightarrow$  Communication.  
 $\rightarrow$  HMI.
- \* Different types of PLC:- In Addition to PLC described above, there are variations including PLC+HMI controllers.
- \* Different Application of Relays:-
- \* A CPU of the PLC Executes two different s/m:-
  - a) The operating s/m.
  - b) The user s/m.
- \* Ladder logic PLC programming.  
Among several programming languages ladder logic diagram is the most basic and simplest form of programming the PLC.
- \* Before to program the PLC with their language, one should know the basic information about it.
- \* In addition to above functional symbols, there are several functions like Timer, Counter, PID etc.

## Python Report

\* code for Display, Resizing, & Writing Images:-

```
=> import cv2
img = cv2.imread("galaxy.jpg", 0)
Print (type (img))
Print (img)
Print (img.shape)
Print (img.ndim)
Resized_image = cv2.resize (img, shape [0/2] (img.shape[0]/2)
cv2.imshow ("Galaxy", Resized_image)
(cv2.imwrite ("Galaxy-Resized.jpg", Resized_image)
cv2.waitKey(0)
(cv2.destroyAllWindows)
```

\* I also want to write the code for face detection  
Which is similar to the above code.

\* Video capturing:- code

```
import cv2, time
a = 0
While True:
a = a + 1
check, bname = video (3)
Print (check)
Print (bname)
gray = cv2.cvtColor (bname, cv2.COLOR_BGR2GRAY)
# time.sleep (3)
cv2.imshow ("Capturing gray")
key = cv2.waitKey(1)
if key == ord('q'):
break
Print (a)
video.release()
(cv2.destroyAllWindows),
```