# DAILY ASSESSMENT FORMAT

| | | | |
|---|---|---|---|
| **Date:** | **30-05-2020** | **Name:** | **Kishan shetty** |
| **Course:** | **LOGIC DESIGN** | **USN:** | **4AL17EC041** |
| **Topic:** | **Applications of Programmable logic controllers** | **Semester & Section:** | **6th sem & A sec** |
| **Github Repository:** | **Kishanshetty-041** | | |

**FORENOON SESSION DETAILS**

**Image of session**


## Programmable logic controllers

- PLC originated in the late 1960s in the automotive industry in the US and were designed to replace relay logic systems.

- Relays are switch that open and close circuits electromechanically or electronically. Relays control one electrical circuit by opening and closing contacts in another circuit. As relay diagrams show, when a relay contact is normally open , there is an open contact when the relay is not energized.

- When a relay contact is Normally Closed , there is a closed contact when the relay is not energized. In either case, applying electrical current to the contacts will change their state

## Applications of Programmable logic controllers:

- High-Performance Controllers in a Compact, Secure Package Today's industrial applications require faster performance and more reliable connections.

- Emerson's Programmable Automation Controllers feature an extensive range to support scalable automation and minimize downtime.

- Redundant by design, these compact controllers use PROFINET for better performance and productivity, and are interoperable with most open industry standards. Rugged, fanless design means more durability and better performance in any environment.

- In the most basic terms, a programmable logic controller (PLC) is a computer with a microprocessor but has no keyboard, mouse or monitor. It is essentially built to withstand very harsh industrial environments.

- A PLC performs only a single set or sequence of tasks, with greater reliability and performance, except when it is under real-time constraints. This is in contrast to regular PCs and smartphones that are designed to execute any number of roles simultaneously within the Windows framework.

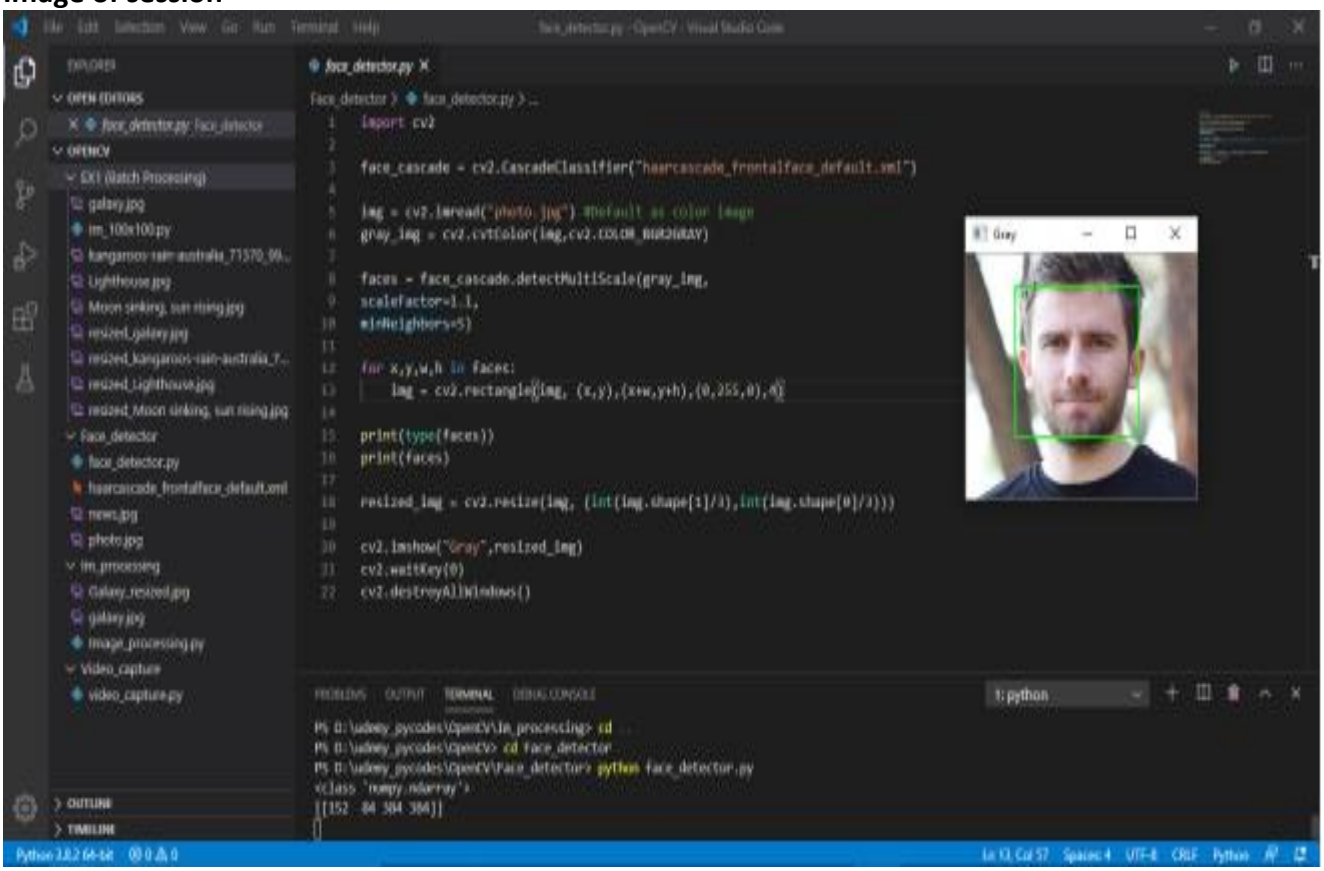
- The PLC has a number of features that you don't find in normal computers, such as protection from the open area conditions like heat, dust and cold.

- It is low cost compared with other microcontroller systems. When you're using a PLC in various applications, you only need to change the software component for each application

| | | | |
|---|---|---|---|
| **Date:** | **30-05-2020** | **Name:** | **Kishan shetty** |
| **Course:** | **Python** | **USN:** | **4AL17EC041** |
| **Topic:** | **Python for Image and Video Processing with OpenCV** | **Semester & Section:** | **6th sem & A sec** |

**AFTERNOON SESSION DETAILS**

**Image of session**



- **If haven't installed OpenCV yet, please do so by following the instructions below. If you do n't know if you have OpenCV, please open Python and type import cv2. If you don't get an error, it means OpenCV is installed.**

**To install:**

- **1.Open the command line and type:pip install opencv-python**
- **Then open a Python session and try:import cv2**
- **If you get no errors, that means you installed OpenCV successfully.**

## Python for Image and Video Processing with OpenCV

- OpenCV (Open Source Computer Vision Library) is a library of programming functions mainly aimed at real-time computer vision. Originally developed by Intel. The library is cross-platform and free for use under the open-source BSD license. In simple language it is library used for Image Processing. It is mainly used to do all the operation related to Images.
- The images are stored in the form of n-dimensional numpy array.
- Some of the functions used for image processing are:
  - cv2.imread () method loads an image from the specified file.
  - The shape of an image is accessed by img.shape. It returns a tuple of the number of rows, columns, and channels (if the image is color).
  - Resizing an image means changing the dimensions of it, be it width alone, height alone or both. Also, the aspect ratio of the original image could be preserved in the resized image. To resize an image, OpenCV provides cv2.resize () function.
  - cv2.imshow () method is used to display an image in a window. The window automatically fits to the image size.
  - cv2.imwrite () method is used to save an image to any storage device. This will save the image according to the specified format in current working directory.
  - waitKey() is a keyboard binding function. Its argument is the time in milliseconds. The function waits for specified milliseconds for any keyboard event. If you press any key in that time, the program continues.
  - destoyAllWindows () function will destroy all of the HighGUI windows.