**DAILY ASSESSMENT FORMAT**

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| **Date:** | **30-05-2020** | **Name:** | **Anand kumar k** |
| **Course:** |  | **USN:** | **4al16ec002** |
| **Topic:** | **Logic design** | **Semester & Section:** | **8thsem ‘A’ sec** |
| **Github Repository:** | **Anand-courses** |  |  |

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| **FORENOON SESSION DETAILS** |
| **Image of session** |
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| PLC Analog I/O and Network I/O:  * In the early days of programmable logic controllers, processor speed and memory were too limited to support anything but discrete (on/off) control functions.Consequently. * The only I/O capability found on early PLCs were discrete in nature. Modern PLC technology, though, is powerful enough to support the measurement, processing, and output of analog (continuously variable) signals. * All PLCs are digital devices at heart. Thus, in order to interface with an analog sensor or control device, some “translation” is necessary between the analog and digital worlds. * Inside every analog input module is an ADC, or Analog-to-Digital Converter, circuit designed to convert an analog electrical signal into a multi-bit binary word * Conversely, every analog output module contains a DAC, or Digital-to-Analog Converter, circuit to convert the PLC’s digital command words into analog electrical quantities.  PLC Analog I/O The following photographs show two analog I/O cards for an Allen-Bradley [SLC 500 modular PLC](https://instrumentationtools.com/allen-bradley-slc500-plc-programming/) system, an analog input card and an analog output card.   * Many different digital network standards exist for PLCs to communicate with, from PLC to PLC and between PLCs and field devices.One of the earliest digital protocols developed for PLC communication was Modbus, originally for the Modicon brand of PLC. * [Modbus](https://instrumentationtools.com/how-modbus-communication-works/) was adopted by other PLC and industrial device manufacturers as a de facto standard, and remains perhaps the most universal digital protocol available for industrial digital devices today.Another digital network standard developed by a particular manufacturer and later adopted as a de facto standard is Profibus, originally developed by Siemens. * A Programmable Logic Controller, also called a PLC or programmable controller, is a computer-type device used to control equipment in an industrial facility. * The kinds of equipment that PLCs can control are as varied as industrial facilities themselves. Utility Plants, Batch Control Application, Chemical Processing, Conveyor systems, food processing machinery, auto assembly lines etc…you name it and there’s probably a PLC out there controlling it.  PLC AdvantagesIn addition to the programming flexibility we just mentioned, PLCs offer other advantages over traditional control systems. These advantages include:   * high reliability * small space requirements * computing capabilities * reduced costs * ability to withstand harsh environments * expandability  A PLC basically consists of two elements: 1. CENTRAL PROCESSING UNIT  2. INPUT/OUTPUT SYSTEM The Central Processing Unit The central processing unit (CPU) is the part of a programmable controller that retrieves, decodes, stores, and processes information.It also executes the control program stored in the [PLC’s memory](https://instrumentationtools.com/plc-memory-mapping-io-addressing/). In essence, the CPU is the “brains” of a programmable controller.  It functions much the same way the CPU of a regular computer does, except that it uses special instructions and coding to perform its functions. The CPU has three parts:  * **the processor** * **the memory system** * **the power supply**   The processor is the section of the CPU that codes, decodes, and computes data. Memory system is the section of the CPU that stores both the control program and data from the equipment connected to the PLC. Power supply is the section that provides the PLC with the voltage and current it needs to operate. |

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| **Date:** | **30-05-2020** | **Name:** | **Anand kumar k** | |
| **Course:** |  | **USN:** | **4al16ec002** | |
| **Topic:** | **python** | **Semester & Section:** | **8thsem ‘A’ sec** | |
| **AFTERNOON SESSION DETAILS** | | | |
| **Image of session** | | | |
| If pip install opencv-python didn't go well please install OpenCV for Python 2 and 2 is installed by default on Mac, so no need to install Python 2. Here are the steps to correctly install OpenCV use Python 2 to run the programs that contains cv2 code. Its' worth mentioning that Python  1. Install brew:  Open your terminal and execute the following:  2. OpenCV depends on GTK+, so please install that dependency first with brew (always from the terminal):  brew install gtk+  3. Install OpenCV with brew:  brew install opencv  4. Open Python 2 by typing:  python  5. Import cv2 in Python:  import cv2  If you get no errors, that means you installed OpenCV successfully.  **3. My opencv installation didn't go well on Linux**  1. Please open your terminal and execute the following commands one by one:   1. sudo apt-get install libqt4-dev 2. cmake-D WITH\_QT=ON .. 3. make 4. sudo make install   2. If that doesn't work, please execute this:   1. sudo apt-get install libopencv-\*   3. Then install OpenCV with pip:  pip install opencv-python  4. Import cv2 in Python. If you get no errors, that means you installed OpenCV successfully.  **Batch Image Resizing**  import cv2 import glob  images=glob.glob("\*.jpg")  for image in images:     img=cv2.imread(image,0)     re=cv2.resize(img,(100,100))     cv2.imshow("Hey",re)     cv2.waitKey(500)     cv2.destroyAllWindows()     cv2.imwrite("resized\_"+image,re)  I first created a list containing the image file paths and then iterated through the aforementioned list.  The loop: reads each image, resizes, and displays the image; waits for the user input key, closes the window once the key is pressed, and writes the resized image. The name of the resized image will be "resized" plus the existing file name of the original image. | | | |