**DAILY ASSESSMENT FORMAT**

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| **Date:** | **29-05-2020** | **Name:** | **BHOOMIKA HEBBAR** |
| **Course:** | **Logic design** | **USN:** | **4AL17EC010** |
| **Topic:** | **Analysis of clocked sequential circuits, Digital clock design** | **Semester & Section:** | **6th & A** |
| **Github Repository:** | **bhoomika\_python** |  |  |

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| **FORENOON SESSION DETAILS** |
| **Image of session**  **1.**    **2.**    **3.** |
| **4.**    **Report – Report can be typed or hand written for up to two pages.**  **Today I have learnt:**  **1. Analysis of clocked sequential circuits**  **2. Digital clock design**   * **Analysis of clocked sequential circuits:** The behavior of a clocked sequential circuit is determined from its inputs, outputs and state of the flip-flops (i.e., the output of the flip-flops). The analysis of a clocked sequential circuit consists of obtaining a table of a diagram of the time sequences of inputs, outputs and states. * **Clocked Sequential Circuit:**The clocked sequential circuits have flip-flops or gated latches for its memory elements. There is a periodic clock connected to the clock inputs of all the memory elements of the circuit to synchronize all the internal changes of state. * A **Sequential** logic **circuits** is a form of the binary **circuit**; its design employs one or more inputs and one or more outputs, whose states are related to some definite rules that depend on previous states. ... **Examples** of such **circuits** include clocks, flip-flops, bi-stables, counters, memories, and registers. * The **basic** memory **element** in **sequential** logic is the flip-flop. The output of each flip-flop only changes when triggered by the clock pulse, so changes to the logic signals throughout the **circuit** all begin at the same time, at regular intervals, synchronized by the clock.   **Flip flop** circuits are **classified** into four types based on its use, namely D-**Flip Flop**, T- **Flip Flop**, SR- **Flip Flop** and JK- **Flip Flop**. SR-Flip Flop The SR-flip flop is built with two AND gates and a basic NOR flip flop. The o/ps of the two AND gates remain at 0 as long as the CLK pulse is 0, irrespective of the S and R i/p values. When the CLK pulse is 1, information from the S and R inputs permits through the basic FF. When S=R=1, the clock pulse occurrence roots both the o/ps go to 0. When the CLK pulse is detached, the state of the FF is unstated D Flip Flop: The simplification of the SR flip flop is nothing but D flip-flop which is shown in the figure. The input of the D-flip flop directly goes to the input S and its complement goes to the i/p R. The D-input is sampled throughout the existence of a CLK pulse. If it is 1, then the FF is switched to the set state. If it is 0, then the FF switches to a clear state. JK Flip Flop A JK-FF is a simplification of the SR-flip flop. The inputs of the J and K flip flops behave like the inputs S & R. When input 1 is applied to both the inputs J and K, then the FF switches to its complement state. The figure of this flip flop is shown below. The designing of the JK FF can be done in such a way that the o/p Q is ANDed with P and. This procedure is made so that the FF is cleared during a CLK pulse only if the output was previously 1. In the same way, the output is ANDed with J & CP so that the FF is cleared during a CLK pulse only is Q’ was previously 1. T Flip Flop The T-flip flop or toggle flip flop is a single i/p version of the JK-flip flop. The working of this FF is as follows: When the input of the T is ‘0’ such that the ‘T’ will make the next state that is similar to the current state. That means when the input of the T-FF is 0 then the present state and the next state will be 0. However, if the i/p of the T is 1 then the present state is inverse to the next state. That means, when T=1, then the present state =0 and next state =1)  **Digital clock design:** A digital clock is a type of [clock](https://en.wikipedia.org/wiki/Clock) that displays the time [digitally](https://en.wikipedia.org/wiki/Digital_data) (i.e. in numerals or other symbols), as opposed to an analogue clock, where the time is indicated by the positions of rotating hands.  Digital clocks are often associated with electronic drives, but the "digital" description refers only to the display, not to the drive mechanism. (Both analogue and digital clocks can be driven either mechanically or electronically, but "clockwork" mechanisms with digital displays are rare). |

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| **Date:** | **29-05-2020** | **Name:** | **BHOOMIKA HEBBAR** | |
| **Course:** | **UDEMY PYTHON MEGA\_COURSE** | **USN:** | **4AL17EC010** | |
| **Topic:** | **Python for Image and Video Processing with OpenCV** | **Semester & Section:** | **6th &A** | |
| **AFTERNOON SESSION DETAILS** | | | |
| **Image of the session:** | | | |
| **Report – Report can be typed or hand written for up to two pages.**  **Today I have learnt :**   1. introduction 2. Installing the Library 3. Loading, Displaying, Resizing, and Writing Images 4. Batch Image Resizing (Practice) 5. Solution 6. Solution with Explanations 7. Face Detection 8. Capturing the video   **Coding:**  If haven't installed OpenCV yet, please do so by following the instructions below.  If you don'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  2. Then open a Python session and try:  import cv2  3. If you get no errors, that means you installed OpenCV successfully. If you get an error please see the FAQs below:  **FAQs**  **1. My opencv installation didn't go well on Windows**  Solution:  1. Uninstall opencv with:  pip uninstall opencv-python  2. Download a wheel (.whl) file from [this link](http://www.lfd.uci.edu/~gohlke/pythonlibs/#opencv) and install it with pip. Make sure you download the correct file for your Windows version and your Python version. For example, for Python 3.6 on Windows 64-bit you would do this:  pip install opencv\_python‑3.2.0‑cp36‑cp36m‑win\_amd64.whl  3. Then try to import cv2 in Python again. If there's still an error, then please type the following again in the command line:  pip install opencv-python  4. Now you should successfully import cv2 in Python.  **2. My opencv installation didn't go well on Mac**  Solution:  If pip install opencv-python didn't go well please install OpenCV for Python 2 and use Python 2 to run the programs that contains cv2 code. Its' worth mentioning that Python 2 is installed by default on Mac, so no need to install Python 2. Here are the steps to correctly install OpenCV:  1. Install brew:  Open your terminal and execute the following:  /usr/bin/ruby -e "$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/master/install)"  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. | | | |