**DAILY ASSESSMENT FORMAT**

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| **Date:** | **02/06/2020** | **Name:** | **Navya R** |
| **Course:** | **HDL design** | **USN:** | **4AL16EC041** |
| **Topic:** | **Analysis of clocked sequential circuits**  **Digital clock design** | **Semester & Section:** | **8 A** |
| **Github Repository:** | **Navya-R** |  |  |

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| **FORENOON SESSION DETAILS** |
| **Image of session** |
| **Report**     * There are many stuff on the internet about this project, but we are gonna add something or two. This circuit was a school project and it was a 24h clock, but i decided to extend it to 12h and 24h with the transferring between them using a switch so you can choose whatever mode you want. Anyway, i made this circuit just for fun so i just simulated it on proteus, i.e we're not going into pcb design.   The main parts of the circuit are as follows:  1- **Timer 555**: Responsible for generating the clock pulses for the counters, the frequency of the output should be 1 Hz which means 1 second for each pulse.  2- **Counters**: Responsible for generating the time in BCD (Binary Coded decimal).  3- **Decoders**: Takes the BCD of the counter as input and produces 7 segment output .  **The circuit works as follows :**  555 timer produces 1 seconde pulses to the clock input of the first counter which is responsible the first column of seconds, so its output will change every second.  The counter produces numbers from 0 to 9 in BCD form and automatically resets to 0 after that.  so the output of the first counter will count from 0 to 9 every second and that's exactly what we want from it, so we are done here. let's move to the next one. **The JK Flip Flop** The JK Flip-flop is similar to the SR Flip-flop but there is no change in state when the J and K inputs are both LOW  The basic S-R NAND flip-flop circuit has many advantages and uses in sequential logic circuits but it suffers from two basic switching problems.   * 1. the Set = 0 and Reset = 0 condition (S = R = 0) must always be avoided * 2. if Set or Reset change state while the enable (EN) input is high the correct latching action may not occur   Then to overcome these two fundamental design problems with the SR flip-flop design, the JK flip Flop was developed.  This simple JK flip Flop is the most widely used of all the flip-flop designs and is considered to be a universal flip-flop circuit. The two inputs labelled “J” and “K” are not shortened abbreviated letters of other words, such as “S” for Set and “R” for Reset, but are themselves autonomous letters chosen by its inventor Jack Kilby to distinguish the flip-flop design from other types.  The sequential operation of the JK flip flop is exactly the same as for the previous SR flip-flop with the same “Set” and “Reset” inputs. The difference this time is that the “JK flip flop” has no invalid or forbidden input states of the SR Latch even when S and R are both at logic “1”.  The JK flip flop is basically a gated SR flip-flop with the addition of a clock input circuitry that prevents the illegal or invalid output condition that can occur when both inputs S and R are equal to logic level “1”. Due to this additional clocked input, a JK flip-flop has four possible input combinations, “logic 1”, “logic 0”, “no change” and “toggle”. The symbol for a JK flip flop is similar to that of an SR Bi-stable Latch as seen in the previous tutorial except for the addition of a clock input. |

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| **Date:** | **02/6/2020** | **Name:** | **Navya R** | |
| **Course:** | **Python** | **USN:** | **4al16ec041** | |
| **Topic:** | **Interactive Data Visualization with Bokeh**  **Webscraping with Python Beautiful Soup** | **Semester & Section:** | **8 A** | |
| **AFTERNOON SESSION DETAILS** | | | |
| REPORT  Bokeh is a library for creating interactive data visualizations in a web browser. It offers a concise, human-readable syntax, which allows for rapidly presenting data in an aesthetically pleasing manner. If you’ve worked with visualization in Python before, it’s likely that you have used [matplotlib](https://matplotlib.org/). It’s worth briefly mentioning how Bokeh differs from matplotlib, and when one might be preferred to the other.  ""Bokeh Visualization Template  This template is a general outline for turning your data into a  visualization using Bokeh.  """  # Data handling  import pandas as pd  import numpy as np  # Bokeh libraries  from bokeh.io import output\_file, output\_notebook  from bokeh.plotting import figure, show  from bokeh.models import ColumnDataSource  from bokeh.layouts import row, column, gridplot  from bokeh.models.widgets import Tabs, Panel  # Prepare the data  # Determine where the visualization will be rendered  output\_file('filename.html') # Render to static HTML, or  output\_notebook() # Render inline in a Jupyter Notebook  # Set up the figure(s)  fig = figure() # Instantiate a figure() object  # Connect to and draw the data  # Organize the layout  # Preview and save  show(fig) # See what I made, and save if I like it Generating Your First Figure There are [multiple ways to output your visualization](https://bokeh.pydata.org/en/latest/docs/user_guide/concepts.html#output-methods) in Bokeh. In this tutorial, you’ll see these two options:   * **output\_file('filename.html')** will write the visualization to a static HTML file. * **output\_notebook()** will render your visualization directly in a Jupyter Notebook.   It’s important to note that neither function will actually show you the visualization. That doesn’t happen until show() is called. However, they will ensure that, when show() is called, the visualization appears where you intend it to.  By calling both output\_file() and output\_notebook() in the same execution, the visualization will be rendered both to a static HTML file and inline in the notebook. However, if for whatever reason you run multiple output\_file() commands in the same execution, only the last one will be used for rendering.  This is a great opportunity to give you your first glimpse at a default Bokeh figure() using output\_file():  # Bokeh Libraries  from bokeh.io import output\_file  from bokeh.plotting import figure, show  # The figure will be rendered in a static HTML file called output\_file\_test.html  output\_file('output\_file\_test.html',  title='Empty Bokeh Figure')  # Set up a generic figure() object  fig = figure()  # See what it looks like  show(fig) | | | |