**DAILY ASSESSMENT FORMAT**

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| **Date:** | **23-05-2020** | **Name:** | **Bhavith** |
| **Course:** | **DSP** | **USN:** | **4AL17EC009** |
| **Topic:** | **Introduction to Fourier Series** | **Semester & Section:** | **6TH,A** |
| **Github Repository:** | **Bhavith-Online-Courses** |  |  |

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| **FORENOON SESSION DETAILS** |
| **Image of session**  **PSX_20200526_083344** |
| **Report – Report can be typed or hand written for up to two pages.**  **Introduction to Fourier Series:**   * **A Fourier series is an expansion of a periodic function. in terms of an infinite sum of sines and cosines.** * **Fourier series make use of the orthogonality relationships of the sine and cosine functions.** * **Fourier series are used in applied mathematics, and especially in physics and electronics, to express periodic functions such as those that comprise communications signal waveforms.** * **Some waveforms are simple, such as the pure sine wave, but these are theoretical ideals.**   **Fourier Series using Matlab:**  **Gibbs Phenomenon:**   * **Gibbs Phenomenon. The Gibbs phenomenon is an overshoot of Fourier series and other eigenfunction series occurring at simple discontinuities.** * **It can be reduced with the Lanczos sigma factor. The phenomenon is illustrated above in the Fourier series of a square wave.** * **In [mathematics](https://en.wikipedia.org/wiki/Mathematics" \o "Mathematics), the Gibbs phenomenon, is the peculiar manner in which the [Fourier series](https://en.wikipedia.org/wiki/Fourier_series" \o "Fourier series) of a [piecewise](https://en.wikipedia.org/wiki/Piecewise" \o "Piecewise) continuously differentiable [periodic function](https://en.wikipedia.org/wiki/Periodic_function" \o "Periodic function) behaves at a [jump discontinuity](https://en.wikipedia.org/wiki/Jump_discontinuity" \o "Jump discontinuity).** * **The *n*th [partial sum](https://en.wikipedia.org/wiki/Partial_sum" \o "Partial sum) of the Fourier series has large oscillations near the jump, which might increase the maximum of the partial sum above that of the function itself.** * **The overshoot does not die out as *n* increases, but approaches a finite limit.** * **This sort of behavior was also observed by experimental physicists, but was believed to be due to imperfections in the measuring apparatus.** |

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| **Date:** | **23-05-2020** | **Name:** | **Bhavith** | |
| **Course:** | **Python** | **USN:** | **4AL17EC009** | |
| **Topic:** | **Web map using Python** | **Semester & Section:** | **6th,A** | |
| **AFTERNOON SESSION DETAILS** | | | |
| **Image of session**  **PSX_20200526_083259** | | | |
| **Report – Report can be typed or hand written for up to two pages.**  **Application of Web Map using Python:**  **Screenshot (98)**   * **[Folium](https://python-visualization.github.io/folium/) is a Python package built to bridge the data wrangling muscle of Python with [Leaflet’s](http://leafletjs.com/reference-1.2.0.html) easy-to-use JavaScript library for creating attractive, interactive web maps.** * **The open source Leaflet is a highly popular web mapping tool due to its flexibility, with a healthy number of community-developed plug-ins further expanding its native capabilities.** * **While Python is a robust programming language, with many packages contributing to geospatial analysis– Pandas, GeoPandas, Fiona, Shapely, Matplotlib, and Descartes to name a few– Folium differentiates itself through ease of use and the interactive potential of the final product.** * **After some experimentation with the library, it did not take very long to produce a functional, albeit simple, web map with clustered point data, accompanied by popup windows.** * **However, it was obvious that there is more to explore with Folium, as it plays well with many types of geospatial data, includes built-in functions and methods for producing choropleths, temporal visualizations, and allows for the marriage of the best of Python and Leaflet.** | | | |