**PUBLIC HEALTH AWARENESS CAMPAIGN ANALYSIS**

**Phase 4 Project:**

1. **Data Preparation:**

Begin by importing your campaign data into IBM Cognos. Ensure that the data is well-organized and clean, addressing any missing or erroneous data.

1. **IBM Cognos Dashboards and Reports:**

Create a new dashboard in IBM Cognos with the objective of visualizing campaign performance.

Design the layout of your dashboard with appropriate widgets and visualizations.

To visualize campaign reach, consider using line charts or area charts to display the progression of impressions or reach over time.

For awareness levels, create bar charts or stacked bar charts to illustrate the different awareness metrics, such as ad clicks, page views, or video views.

Impact metrics can be visualized with pie charts, scatter plots, or heat maps, showcasing the distribution and impact of various metrics.

1. **Data Analysis with Python:**

Utilize Python for more advanced data analysis:

To calculate engagement rates, write Python code to compute engagement ratios, which might involve likes, comments, shares, and reactions divided by total impressions or reach.

For demographic analysis, segment the data based on demographic variables, and employ Python libraries like Seaborn or Plotly for creating demographic-specific visualizations.

If statistical tests are needed, use Python libraries like SciPy or StatsModels to conduct hypothesis testing or regression analysis.

1. **Integration:**

Export the relevant data from IBM Cognos in a format such as CSV or Excel.

Import this data into your Python environment, using Pandas for data manipulation.

1. **Visualization and Reporting Integration:**

Incorporate the Python analysis results into your IBM Cognos dashboards and reports. This could be done by importing Python-generated visuals or embedding reports as web content.

Make sure that your dashboard effectively communicates the insights derived from Python analysis, providing stakeholders with actionable information.

1. **Iterate and Refine:**

Continuously iterate and refine your dashboards and analysis as you receive feedback and as the campaign data evolves.

Automate the data refresh process within IBM Cognos to keep your visualizations up-to-date with the most recent campaign data.