**Senior Role Task**

**Background:** You are tasked with analyzing an ad campaign by the company “XYZ” that ran for a couple of weeks. The company wants to evaluate how effectively the advertisement message reached the intended audience. To support this analysis, you have access to a sample dataset representing the population of the entire country where the campaign was active. This dataset includes socio-demographic information and detailed media consumption data for the sampled individuals.

**Objective**: Your goal is to explore the provided datasets, identify patterns in how socio-demographics influence media consumption, build a predictive model to understand drivers of purchases, and present actionable insights. Example questions from the client might include:

* Which age groups generated the highest number of impressions across all channels?
* What socio-demographic trends can be observed in media consumption for different channels?
* Which media channels had the greatest impact on driving purchases?

**Datasets information:**

* Dataset “media\_contacts” – number of times each individual in the sample was exposed to the advertisement on various media channels. There is also a column indicating if the individual has purchased the advertised product.
* Dataset “socio\_demos” – socio demographics for each individual from the sample. There is also a weight column representing each individual's share of the total population for the country.

**Additional instructions:**

* Perform data cleaning and pre-processing to ensure the datasets are ready for analysis. Handle inconsistent and anomalies.
* Perform a thorough exploratory data analysis and highlight any interesting relationships, correlations, abnormalities, etc.
* Create visualizations to support your analysis.
* Develop a predictive model to provide deeper insights and answer specific business questions.
* Provide actionable recommendations to optimize advertising performance based on the insights gained.

**Deliverables:**

* Code – Python or R are preferred.
* Live presenting of the findings.

**Evaluation Criteria:**

* Coding style, readability, and efficiency.
* Analytical approach and creativity.
* Clarity and quality of insights.
* Ability to communicate the findings effectively.