

CAMPAIGN MARKETING

DATA OVERVIEW

It contains **6 rows** and **8 columns** with a header row. The dataset is related to a marketing campaign, focusing on the allocation of advertisements across different media channels, specifically TV and radio ads.

 **Problem Statement:** The problem involves optimizing a marketing campaign by determining the optimal number of TV and radio ads to maximize the campaign's reach or effectiveness, subject to various constraints such as budget limits and minimum/maximum ad requirements.

A candidate for mayor has allocated \$40,000 for last minute advertising in the days preceding the election. Two types of ads will be used: radio and television. Each radio ad costs \$200 and reaches an estimated 3000 people. Each television ad costs \$500 and reaches an estimated 7000 people. The campaigning mayor would like to reach as many people as possible, but she has stipulated that at least 10 ads of each type be used. Also, the number of radio ads must be at least as great as the number of television ads.

1. How many ads of each type should be used?
2. How many people will be reached?

INFORMATION:

1. **Objective (Max):** This column likely represents the objective function to be maximized, which could be related to the number of people reached or the effectiveness of the campaign.
2. **No. of people reached:** This column indicates the number of people reached by the campaign which is 5,95000
3. **Constraints Table:** This column lists various constraints for the campaign, such as budget limits and minimum/maximum ad requirements.
4. **No. of radio ads:** This column specifies the number of radio ads, with values ranging from 175 to 3000.
5. **No. of TV ads:** This column specifies the number of TV ads, with values ranging from 10 to 7000.

6. **Dummy numbers and coefficients for objective:** This column includes dummy numbers and coefficients used in the objective function formula.

STEPS TO SOLVE THE PROBLEM:

1. **Define the Objective Function:** Identify the objective function to be maximized, which could be the total number of people reached by the campaign.
2. **Identify Constraints:** List all the constraints, including budget limits, minimum and maximum number of ads, and any other specific requirements.
3. **Formulate the Linear Program:** Use the objective function and constraints to formulate a linear programming (LP) problem.
4. **Use Solver (Simplex LP):** Apply the Simplex LP method to solve the formulated LP problem.
5. **Analyze Results:** Interpret the results to determine the optimal number of TV and radio ads.

CONCLUSION:

The dataset provides essential information for optimizing a marketing campaign through linear programming. By defining the objective function and constraints, and using the Simplex LP method, one can determine the optimal allocation of TV and radio ads to maximize the campaign's reach or effectiveness. The final solution will help in making informed decisions to achieve the campaign's goals within the given constraints.