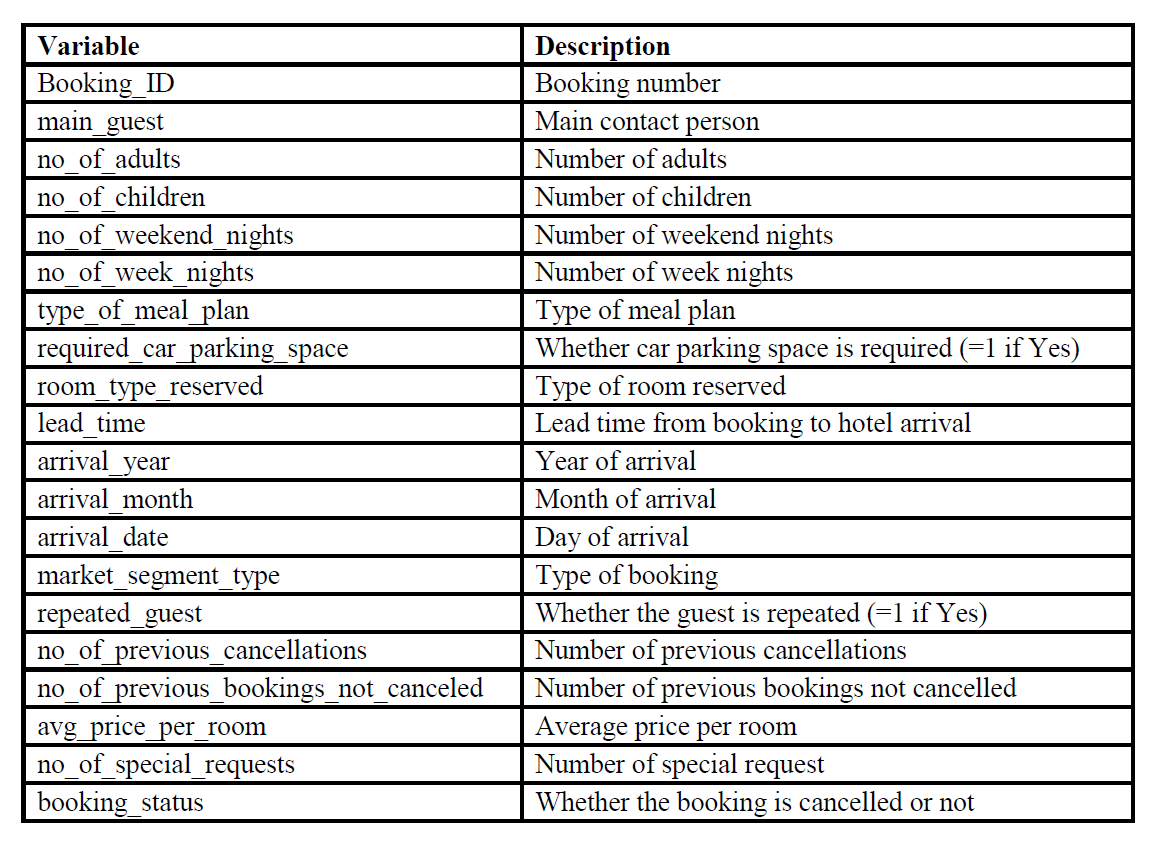
Question

You recently joined Bora Bora Holdings (BBH) as the new general manager of The Capri, a boutique hotel owned by BBH. The hotel industry has been struggling with increased competition, which arises from the now-standard industry practice of permitting cancellations without charges and new booking technologies. The Capri has been facing a rise in cancellations in recent years and the senior management of BBH is committed to addressing this issue. Your immediate task is to develop a business strategy and advise the senior management how a reduction in cancellations can be achieved.

As a general manager who is trained in statistics and data analytics, your first instinct is to turn to recent data on bookings at The Capri, contained in RSS\_ECA\_hotel.csv, to get a better understanding of where the cancellations are taking place and their underlying reasons. However, as The Capri is still in its early stage of developing their data warehouses, you will have to work with limited data while coming up with a sensible business proposal to address the senior management’s concerns. Your dataset contains the following variables:



Write a report, not exceeding 3,300 words (excluding tables, figures, references, and appendix), for the senior management detailing your findings about customers and bookings at The Capri, and include recommendations in your proposal on how cancellations may be reduced.

Your report may follow the CRISP-DM framework. You should consider the following when developing your report:

i. Craft an introduction providing an overview of your data analysis, modelling results and findings, and business recommendations. Think of your introduction as an extended executive summary to be read by the senior management.

ii. Analyse the data using statistics, data visualisations or machine learning tools to gain insights into customers' booking behaviours and characteristics at The Capri.

iii. Formulate and discuss the modelling approaches to be adopted for your report.

iv. Select and implement the appropriate modelling approaches. Evaluate the modelling results and appraise the modelling performance.

v. Create the appropriate data analytical outputs from your data analysis and present your business insights. Craft a proposal to senior management on how you plan to address the issue of cancellations at The Capri.

You are expected to utilise the appropriate statistical and machine learning techniques for your exploratory analysis and data modelling works and employ the appropriate performance evaluation metrics. Please provide sound justifications for your choice of exploratory, modelling and performance evaluation approaches.

Your report will be assessed on the quality of its introduction, exploratory data analysis and insights, choice of modelling approaches, modelling implementation and insights, and your business proposal. As the report is meant to be read by the senior management, ensure that it is clear, logical, and accessible to a non-technical person.

You may use bibliographical references as support for your arguments or relevant background work. Please ensure that the presentation of your results, citations and bibliographical references conform to the APA guidelines.

You must provide evidence of data work. You may include such supporting evidence in the appendix.

Marks Allocation:

Marks will be awarded to the different components of the research report on the following basis:

Weighted Total Score (WTS) = 0.1\*Score A + 0.2\*Score B + 0.1\*Score C + 0.25\*Score D + 0.15\*Score E + 0.20\*Score F

where the different components are:

A. Introduction

B. Data understanding and exploratory data analysis

C. Modeling choice and justification

D. Modeling results and evaluation

E. Business insights and business proposal

F. Overall quality of the report