In-vehicle coupon recommendation

Source:

https://www.kaggle.com/datasets/mathurinache/invehicle-coupon-recommendation

Data Set Information:

This data was collected via a survey on Amazon Mechanical Turk. The survey describes different driving scenarios including the destination, current time, weather, passenger, etc., and then asks the person whether he will accept the coupon if he is the driver.

Attribute Information:

Nominal: Destination, Passenger, Weather, Coupon, Marital Status, Education, Occupation, Income, Bar, Coffee House, Restaurant Less than 20, Time, Restaurant 20 to 50.

Binary : Gender, Has Children, To Coupon 5 mins, To Coupon 15min, To Coupon 25 mins, Direction Same, Direction Opp.

Numerical: Temperature, Expiration, Age.

destination: No Urgent Place, Home, Work - Nominal
passanger: Alone, Friend(s), Kid(s), Partner (who are the passengers in the car)
weather: Sunny, Rainy, Snowy
temperature:55, 80, 30
time: 2PM, 10AM, 6PM, 7AM, 10PM
coupon: Restaurant(<$20), Coffee House, Carry out & Take away, Bar, Restaurant($20-$50)
expiration: 1d, 2h (the coupon expires in 1 day or in 2 hours)
gender: Female, Male
age: 21, 46, 26, 31, 41, 50plus, 36, below21
maritalStatus: Unmarried partner, Single, Married partner, Divorced, Widowed
has_Children: 1, 0

education: Some college - no degree, Bachelor's degree, Associates degree, High School Graduate, Graduate degree (Masters or Doctorate), Some High School
occupation: Profession, Student, Type of job and working Industury

income: $37500 - $49999, $62500 - $74999, $12500 - $24999, $75000 - $87499, $50000 - $62499, $25000 - $37499, $100000 or More, $87500 - $99999, Less than $12500
Bar: never, less1, 1~3, gt8, nan4~8 (feature meaning: how many times do you go to a bar every month?)
CoffeeHouse: never, less1, 4~8, 1~3, gt8, nan (feature meaning: how many times do you go to a coffeehouse every month?)
CarryAway: n4~8, 1~3, gt8, less1, never (feature meaning: how many times do you get take-away food every month?)
RestaurantLessThan20: 4~8, 1~3, less1, gt8, never (feature meaning: how many times do you go to a restaurant with an average expense per person of less than $20 every month?)
Restaurant20To50: 1~3, less1, never, gt8, 4~8, nan (feature meaning: how many times do you go to a restaurant with average expense per person of $20 - $50 every month?)
toCoupon_GEQ15min: 0,1 (feature meaning: driving distance to the restaurant/bar for using the coupon is greater than 15 minutes)
toCoupon_GEQ25min: 0, 1 (feature meaning: driving distance to the restaurant/bar for using the coupon is greater than 25 minutes)
direction_same: 0, 1 (feature meaning: whether the restaurant/bar is in the same direction as your current destination)
direction_opp: 1, 0 (feature meaning: whether the restaurant/bar is in the same direction as your current destination)
Y: 1, 0 (whether the coupon is accepted)

Target Variable:

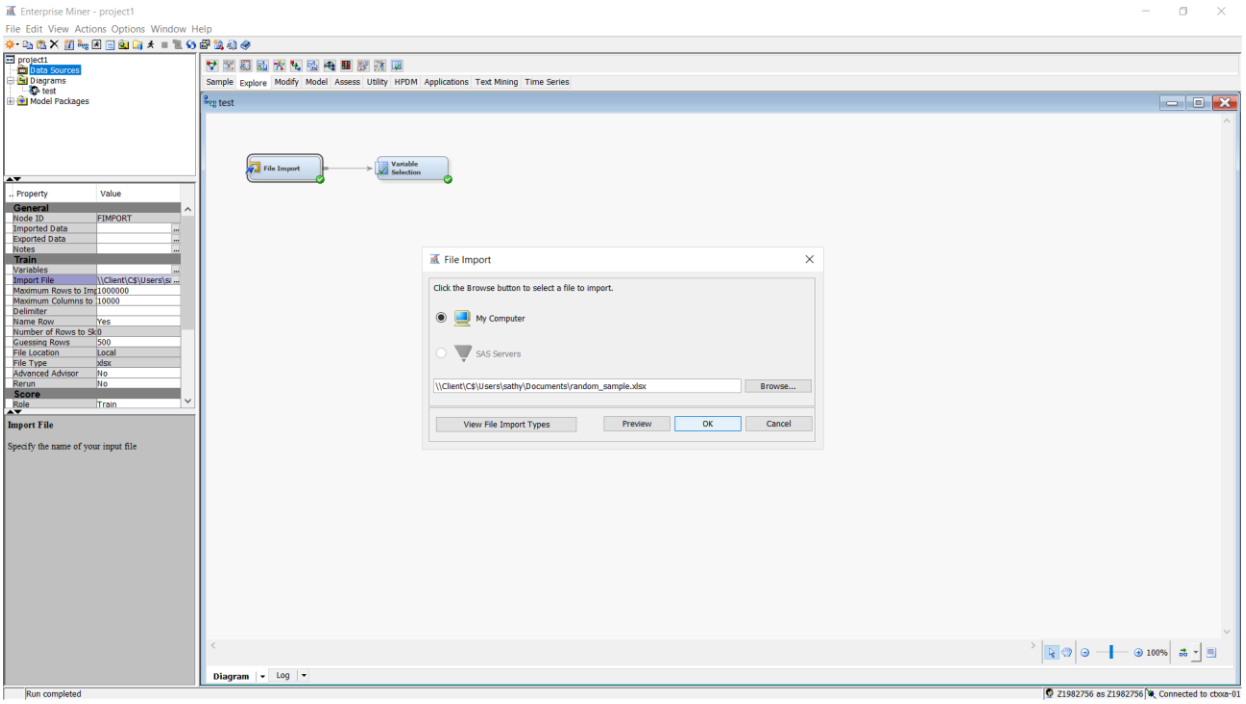
Binary - Whether the coupon is accepted or not (Yes/No or 1 / 0)

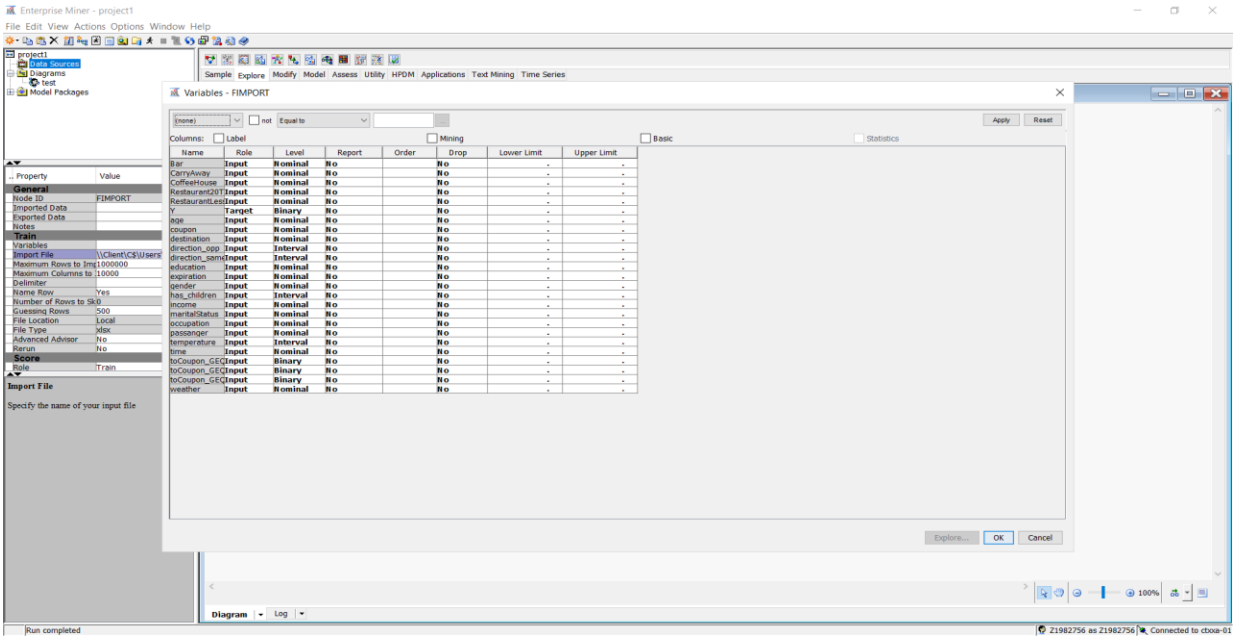
Reason*:* We want to predict *b*ased on multiple scenarios, if a coupon is offered at a drive thru, will that person accept it or not. Here, the variables are a mix of nominal and binary.

Dataset Modifications*:* The original dataset has more than 12,600 rows and 26 columns. We Removed one column and rows which are empty data. We were left with 12000 rows, out of which we randomly selected 5000 rows. We used Pandas in python to do the data processing.

Project Workflow:

A new project is created in SAS and then a new diagram is created. After that, a target variable is selected. The sequence of steps is attached in the format of snapshots as follows.




Enterprise Miner - project1
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Sample Explore Modify Model Assess Utility HPDM Applications Text Mining Time Series
Variables - FIMPORT
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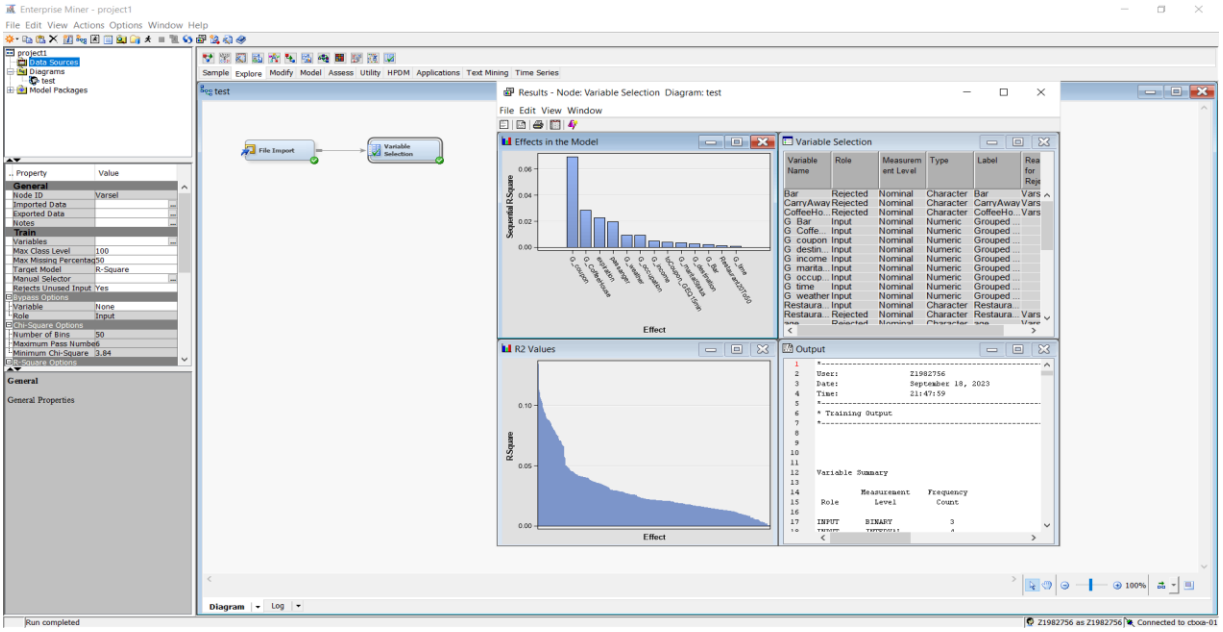
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File Import
Variable Selection
Results - Node: Variable Selection Diagram: test
File Edit View Window
Effects in the Model
Sequential R-Square
Effect
Variable Selection
R2 Values
R-Square
Effect
Output
Variable Summary
Diagram
Log
Run completed

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