The analysis is conducted using the R programming language. The version details and libraries utilized include:

- R Version: 4.3.2
- RStudio Version:22.0.3

Data Analysis and Plotting Libraries:

- dplyr: Select specific columns from the dataset and perform data manipulation.
- ggplot2: Create visually appealing and customizable plots.
- gridExtra: Plot graphs side by side in groups.
- tidyr: Facilitate data tidying and reshaping.
- corrplot: Visualize correlation matrices for numerical variables.

Machine Learning Libraries:

- caTools: Divide the dataset into training and test sets.
- e1071: Implement SVM function for classification.
- ROCR: Analyze accuracy using precision-recall and ROC curves.
- caret: Evaluate accuracy, confusion matrix, and more.

Importing the Dataset

The dataset is loaded from the source file, and a glimpse of the initial data is provided to understand its structure.

```
dataset = read.csv("../input/heart-attack-analysis-prediction-dataset/heart.csv")
head(dataset)
```

2.2 Exploratory Data Analysis (EDA)

Descriptive statistics, histograms, and correlation matrices are generated to gain insights into the distribution and relationships between variables.

```
summary(dataset)
histograms <- [Histogram Generation Code]
corrplot(corr, method = "circle")
```

2.3 Data Preprocessing

Categorical variables are separated from numerical variables, and factors are appropriately formatted. Scaling and normalization are applied to numerical variables for better model performance.