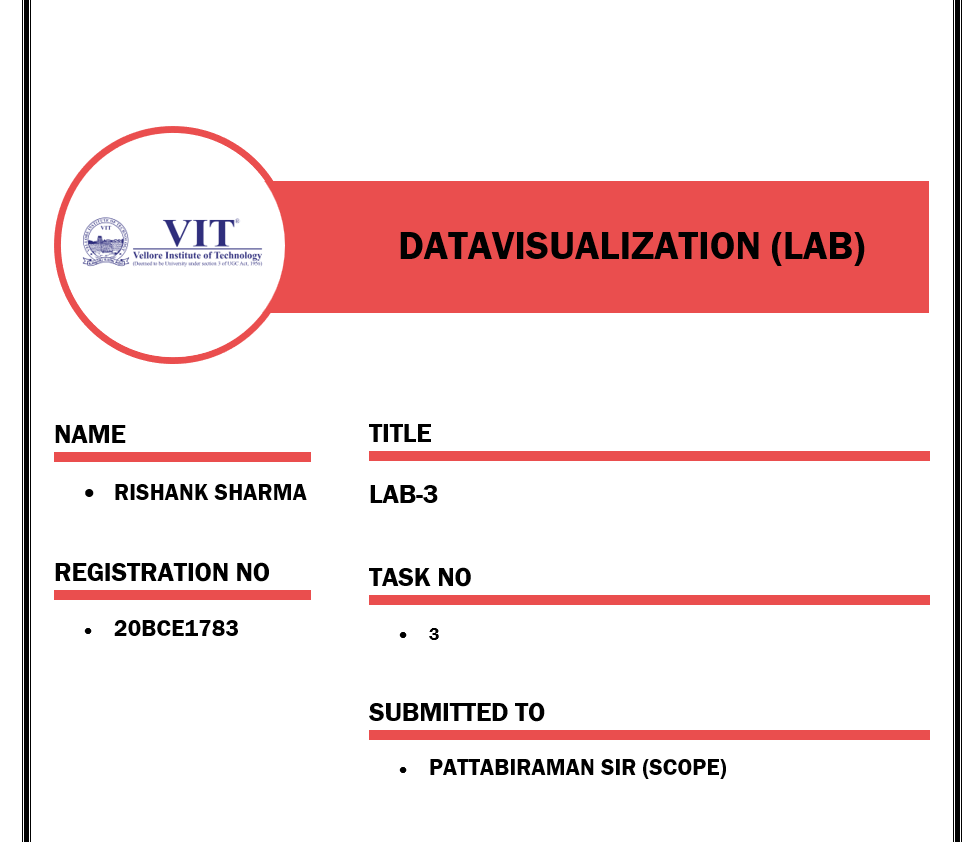
**CODE:**

install.packages("ggplot2");

install.packages("dplyr");

install.packages("reshape2");

install.packages("corrplot");

library(ggplot2);

library(corrplot);

library(reshape2);

churnData = read.csv("churn\_data.csv");

newdata = cor(churnData);

df = data.frame(churnData);

# Correlation Plot-1

corrplot(newdata, method = "circle");

# Correlation Plot-2

corrplot(newdata, method = "number");

# Correlation Plot-3

corrplot(newdata, method = "shade");

# Correlation Plot-3

corrplot(newdata, method = "pie");

# Correlation Plot-4

options(scipen=999);

library(ggplot2);

theme\_set(theme\_bw());

# Scatterplot

ggp = ggplot(df, aes(x=deposits, y=withdrawal)) +

geom\_point() +

geom\_smooth(method="loess", se=F) +

xlim(c(0, 0.1)) +

ylim(c(0, 500000)) +

labs(subtitle="deposits Vs Withdrawal",

y="Withdrawal",

x="deposits",

title="Scatterplot",

caption = "Source: churn\_data");

# Correlation Plot-5

options(scipen=999);

library(ggplot2);

theme\_set(theme\_bw());

ggp <- ggplot(df, aes(deposits, withdrawal))

# Scatterplot

ggp + geom\_point() +

geom\_smooth(method="lm", se=F) +

labs(subtitle="chun\_data: deposits vs withdrawal",

y="withdrawal",

x="deposits",

title="Scatterplot with overlapping points",

caption="Source: churn\_data");

# Correlation Plot-6

# METHOD-1

ggplot(df, aes(x = deposits, y = withdrawal, size = user)) +

geom\_point(alpha = 0.7);

#METHOD-2

# Scatterplot

theme\_set(theme\_bw()) # pre-set the bw theme.

ggp <- ggplot(df, aes(x = deposits, y = withdrawal)) +

labs(subtitle="ChurnData: deposits vs withdrawal",

title="Bubble chart")

ggp + geom\_jitter(aes(col=withdrawal, size=user)) +

geom\_smooth(method="lm", se=F);

# Correlation Plot-7

# METHOD-1

options(scipen = 999);

library(ggplot2);

library(ggalt);

midwest\_select <- df[df$withdrawal > 0 &

df$withdrawal <= 3 &

df$deposits > 0 &

df$deposits < 50, ]

# Plot

ggplot(df, aes(x = deposits, y = withdrawal)) +

geom\_point(aes(col="red", size=user)) + # draw points

geom\_smooth(method="loess", se=F) +

xlim(c(0, 100)) +

ylim(c(0, 100)) +

geom\_encircle(aes(x = deposits, y = withdrawal),

data=midwest\_select,

color="red",

size=2,

expand=10) + # encircle

labs(subtitle="Area Vs Population",

y="Population",

x="Area",

title="Scatterplot + Encircle",

caption="Source: ChurnData");

# Correlation Plot-8

library(ggplot2)

theme\_set(theme\_bw())

ggplot(df, aes(x = deposits, y = withdrawal)) +

geom\_bar(stat='identity', width=.5) +

scale\_fill\_manual(name="Mileage",

labels = c("Above Average", "Below Average"),

values = c("above"="#00ba38", "below"="#f8766d")) +

labs(subtitle="Normalised forms of ChurnDataset'",

title= "Diverging Bars") +

coord\_flip();

# Correlation Plot-9

# Positive and Negative correlations

library(ggplot2);

library(dplyr);

dt <- select\_if(df, is.numeric);

cor\_matrix <- cor(dt);

negative\_correlations <- cor\_matrix[cor\_matrix < 0];

negative\_correlations;

ggplot(melt(cor\_matrix), aes(x = deposits, y = withdrawal, fill = value)) +

geom\_tile() +

scale\_fill\_gradient2(low = "red", high = "green", mid = "white", midpoint = 0);

library(ggplot2);

library(dplyr);

dt <- select\_if(df, is.numeric);

cor\_matrix <- cor(dt);

positive\_correlations <- cor\_matrix[cor\_matrix > 0];

positive\_correlations;

ggplot(melt(cor\_matrix), aes(x = deposits, y = withdrawal, fill = value)) +

geom\_tile() +

scale\_fill\_gradient2(low = "red", high = "green", mid = "white", midpoint = 0);

# Correlation Plot-10

library(ggplot2)

theme\_set(theme\_bw())

# Plot

ggplot(df, aes(x = deposits, y = withdrawal, label=deposits)) +

geom\_point(stat='identity', aes(col="red"), size=6) +

scale\_color\_manual(name="Mileage",

labels = c("Above Average", "Below Average"),

values = c("above"="#00ba38", "below"="#f8766d")) +

geom\_text(color="white", size=2) +

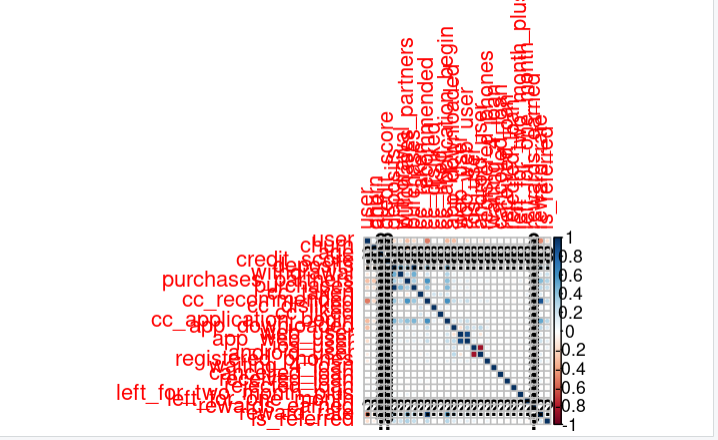
labs(title="Diverging Dot Plot",

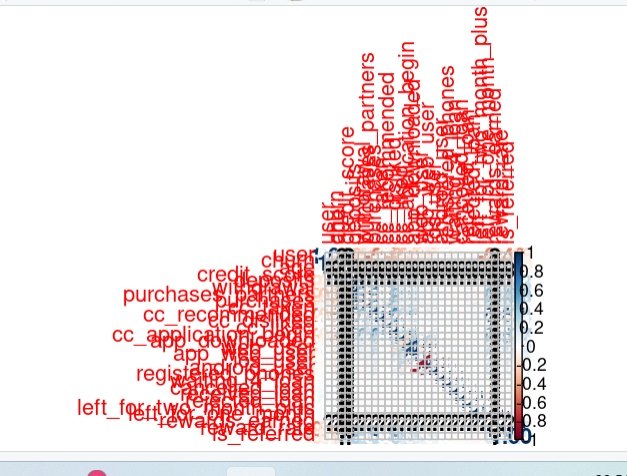
subtitle="Normalized mileage from 'ChurnData': Dotplot") +

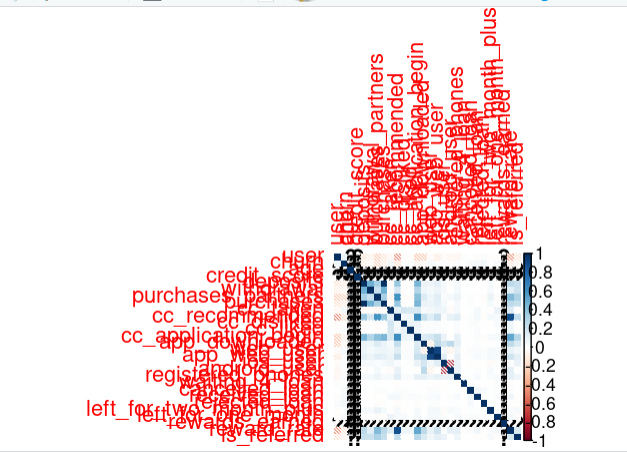
ylim(0, 100) +

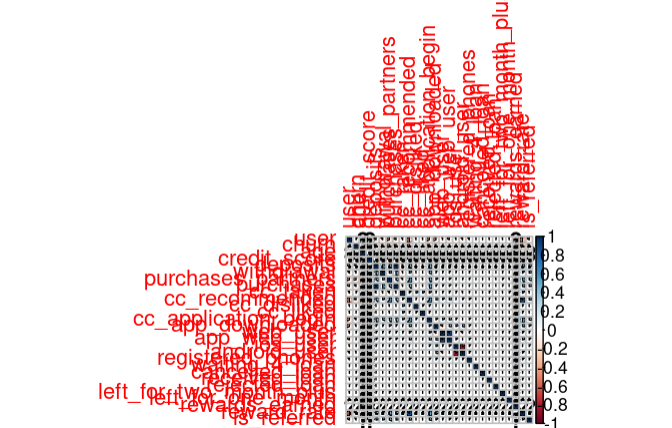
coord\_flip();

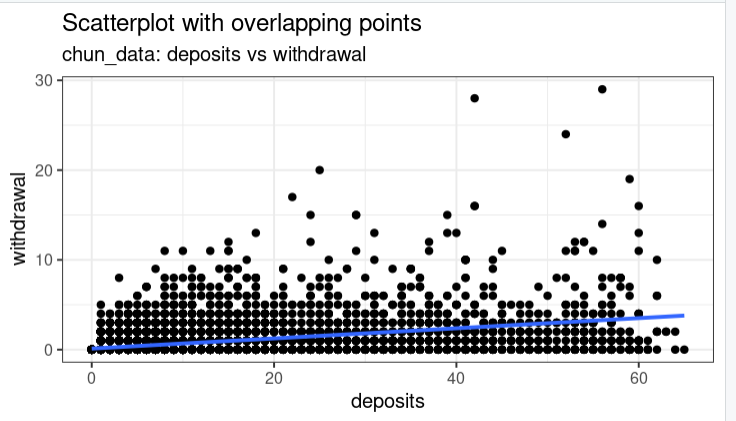
**OUTPUT:**

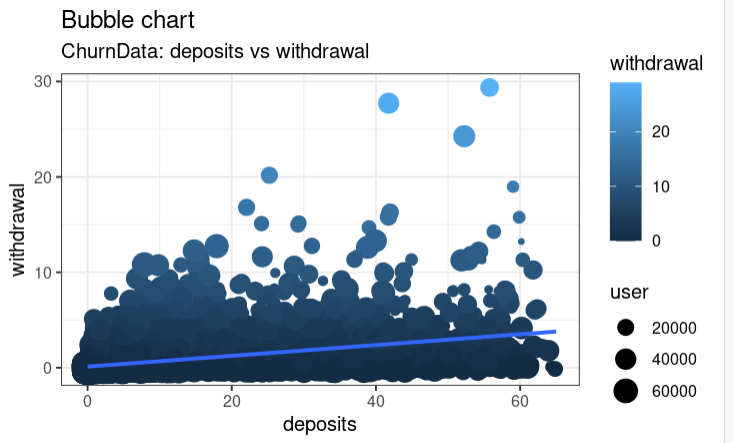
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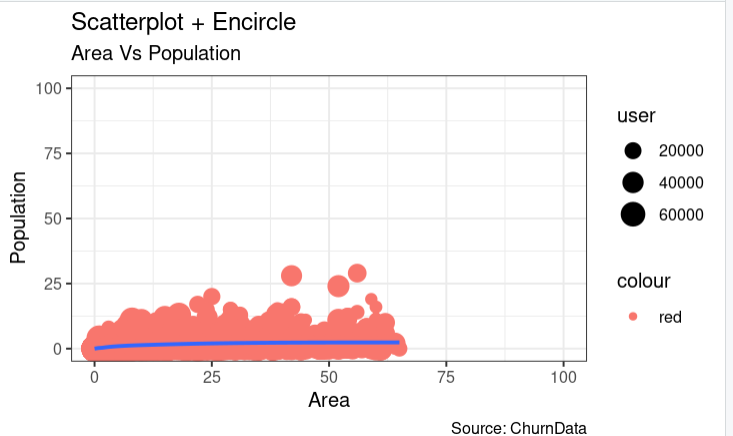
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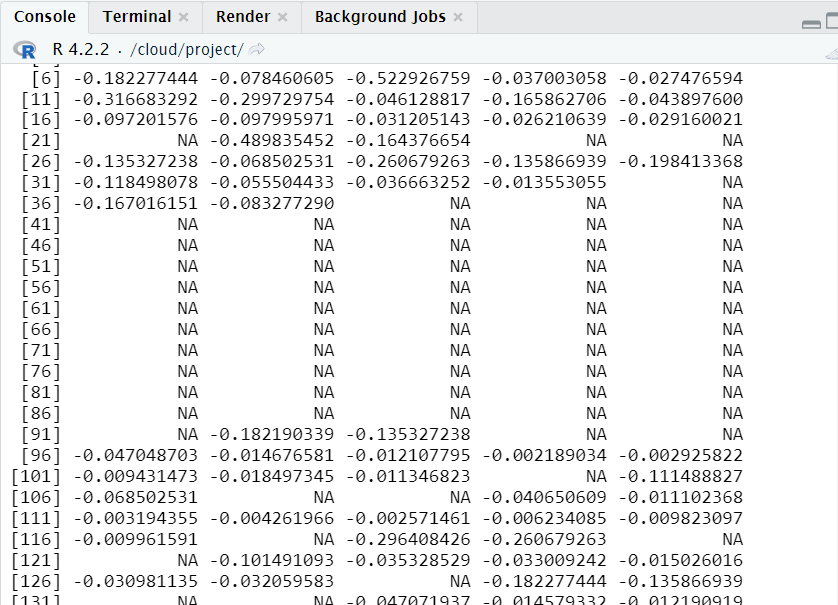
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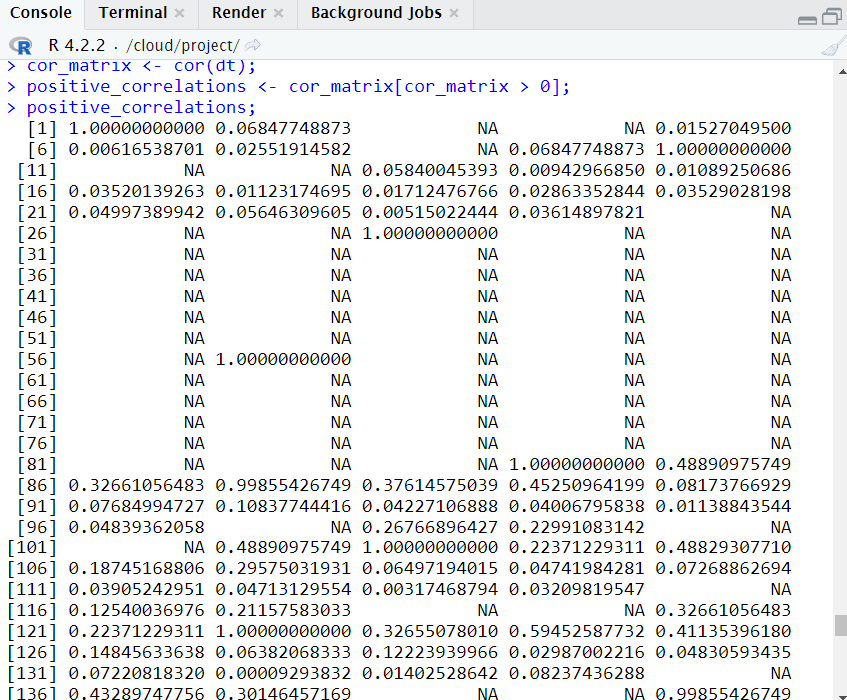
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