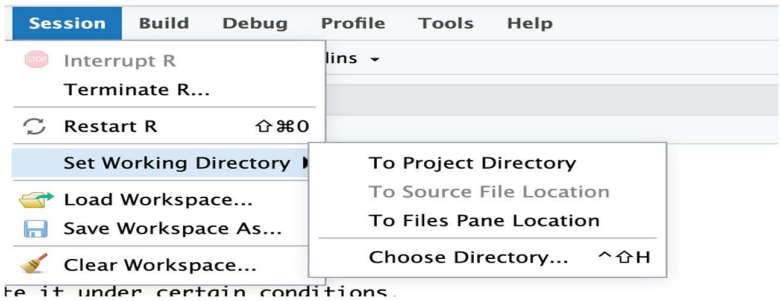
Download dataset for the examination and set the working directory.

1. Download 1st-Internal dataset from website (https://sitmbadept.github.io/BDTM/)
2. Create new folder with your name/USN on Desktop
3. Copy Paste Downloaded file in the folder created in Step#2
4. Unzip downloaded file(Right click > Extract All) or using Winzip software
5. Set Unzip folder as a project working directory in R Studio
   (Click on Session Menu → Set Working Directory → Choose Directory)



Q1. Write R Code for creating numeric vector and display all vector elements [5]

11, 22, 33, 44, 55, 66, 77, 88, 99, 100

Ans.

```
# Vector creation
x = c(11, 22, 33, 44, 55, 66, 77, 88, 99, 100)

# Display Vector Elements
print(x)
```

Q2. Write R Code for following statement. [5]

1. Read SPSS survey.sav file in R
2. Display the structure and dimension of data

Note: Download & load external packages to read SPSS file

```
install.packages("haven", dep=TRUE)
library(haven)
```

Ans.

```
install.packages("haven", dep=TRUE)
library(haven)

survey = read_sav("survey.sav")

# Structure & Dimension
str(survey)
```

```
dim(survey)
```

Q3. Read Marketing Spend (marketing-spend.csv) data, Perform simple linear regression and display summary of regression model in R.

Dataset contains 12 months of Monthly Spends & Sales details, whereas Spends & Month are independent variables and Sales is dependent variable.

[10]

```
# Read/Import data
data <- read.csv("marketing-spend.csv")

# Prepare Formula & Regression Function
model <- lm(Sales~Spend, data)

#Summary of Regression Model
summary(model)
```

Q4. Create SQL Statement for below tables [15]

usn	**name**	**City**	**Degree**
1	John	USA	BTech
2	Dom	UK	BSc
3	Nick	USA	BCom
4	Sager	CHINA	BCA
5	Paul	UK	MTech

a) Create above table in SQL using CREATE TABLE
b) Insert table records in SQL using INSERT INTO
c) Display all the records

Ans.

4[A]

```
CREATE TABLE student(
        usn text,
        name text,
        city text,
        degree text
);
```

4[B]

```
INSERT INTO student VALUES ('1', 'John', 'USA', 'BTech');
INSERT INTO student VALUES ('2', 'Dom', 'UK', 'BSc');
INSERT INTO student VALUES ('3', 'Nick', 'USA', 'BCom');
INSERT INTO student VALUES ('4', 'Sager', 'CHINA', 'BCA');
INSERT INTO student VALUES ('5', 'Paul', 'UK', 'MTech');
```

4[C]

```
SELECT * FROM student;
```

Q5. Read Credit Card churn dataset and write R code for following statements. [15]

About Dataset:

- **CLIENTNUM**: Client number. Unique identifier for the customer holding the account
- **Attrition_Flag**: Internal event/Churn (customer activity) variable - if the account is closed then 1 else 0
- **Customer_Age**: Demographic variable - Customer's Age in Years
- **Gender**: Demographic variable - M=Male, F=Female
- **Dependent_count**: Demographic variable - Number of dependents
- **Education_Level**: Educational Qualification of the account holder (example: high school, college graduate, etc.)
- **Marital_Status**: Demographic variable - Married, Single, Divorced, Unknown
- **Income_Category**: Demographic variable - Annual Income Category of the account holder
- **Card_Category**: Product Variable - Type of Card (Blue, Silver, Gold, Platinum)
- **Months_on_book**: Period of relationship with bank
- **Total_Relationship_Count**: Total no. of products held by the customer
- **Months_Inactive_12_mon**: No. of months inactive in the last 12 months
- **Contacts_Count_12_mon** No. of Contacts in the last 12 months
- **Credit_Limit**: Credit Limit on the Credit Card
- **Total_Revolving_Bal**: Total Revolving Balance on the Credit Card
- **Avg_Open_To_Buy**: Open to Buy Credit Line (Average of last 12 months)
- **Total_Amt_Chng_Q4_Q1**: Change in Transaction Amount (Q4 over Q1)
- **Total_Trans_Amt**: Total Transaction Amount (Last 12 months)
- **Total_Trans_Ct**: Total Transaction Count (Last 12 months)
- **Total_Ct_Chng_Q4_Q1**: Change in Transaction Count (Q4 over Q1)
- **Avg_Utilization_Ratio** Average Card Utilization Ratio

Write R Code for following statements :

A. Read (BankChurners.csv) CSV file
B. Display the structure and dimension of data
C. Display top 6 records from the Dataset
D. Display bottom 6 records from the Dataset
E. Display quick summary of all the columns
F. Display frequency of Attrition_Flag using table function
G. Display frequency of Gender & Attrition_Flag using table function
H. Display Unique values of Education_Level column in data

```
#A.Read (BankChurners.csv) CSV file
data = read.csv("BankChurners.csv")

#B.Display the structure  and dimension of data
str(data)
dim(data)

#C.Display top 6 records from the Dataset
head(data,6)

#D.Display bottom 6 records from the Dataset
```

```
tail(data,6)

#E.Display quick summary of all the columns
summary(data)

#F.Display frequency of Attrition_Flag using table function
table(data$Attrition_Flag)

#G.Display frequency of Gender & Attrition_Flag using table function
table(data$Gender, data$Attrition_Flag)

#H.Display Unique values of  Education_Level column in data
unique(data$Education_Level)
```