PRACTICAL NO 5:- Implementation and use of data frames in R.

Theory:- A data frame is a table or a two-dimensional array-like structure in which each column contains values of one variable and each row contains one set of values from each column.
Following are the characteristics of a data frame.

- The column names should be non-empty.
- The row names should be unique.
- The data stored in a data frame can be of numeric, factor or character type.
- Each column should contain same number of data items.

Data Frames are data displayed in a format as a table.Data Frames can have different types of data inside it. While the first column can be character, the second and third can be numeric or logical. However, each column should have the same type of data.

Following are some useful function of data frame in R

To create a data frame	data.frame()	to create a data frame:
Summarize the Data	summary()	Use the function to summarize the data from a Data Frame:
Access Items	[], [[]], $	We can use single brackets [ ], double brackets [[ ]] or $ to access columns from a data frame:

Add Rows	rbind() function	to add new rows in a Data Frame:
Add Columns	cbind() function	to add new columns in a Data Frame:
Amount of Rows and Columns	dim() function	to find the amount of rows and columns in a Data Frame:
Remove Rows and Columns	c() function	to remove rows and columns in a Data Frame:
Data Frame Length	length() function	to find the number of columns in a Data Frame (similar to ncol()):
Combining Data Frames	rbind() function	to combine two or more data frames in R vertically:

Conclusion :- Thus,we have studied data frame in R programming

Practical work exercise
 # Create a data frame named 'exam_data' with four columns: 'name', 'score', 'attempts', and 'qualify'

"Original dataframe:"

	name	score	attempts	qualify
1	Anastasia	12.5	1	yes
2	Dima	9.0	3	no
3	Katherine	16.5	2	yes
4	James	12.0	3	no
5	Emily	9.0	2	no
6	Michael	20.0	3	yes
7	Matthew	14.5	1	yes
8	Laura	13.5	1	no
9	Kevin	8.0	2	no
10	Jonas	19.0	1	yes

Apply all function of data frame