SNS COLLEGE OF ENGINEERING

Kurumbapalayam (Po), Coimbatore – 641 107

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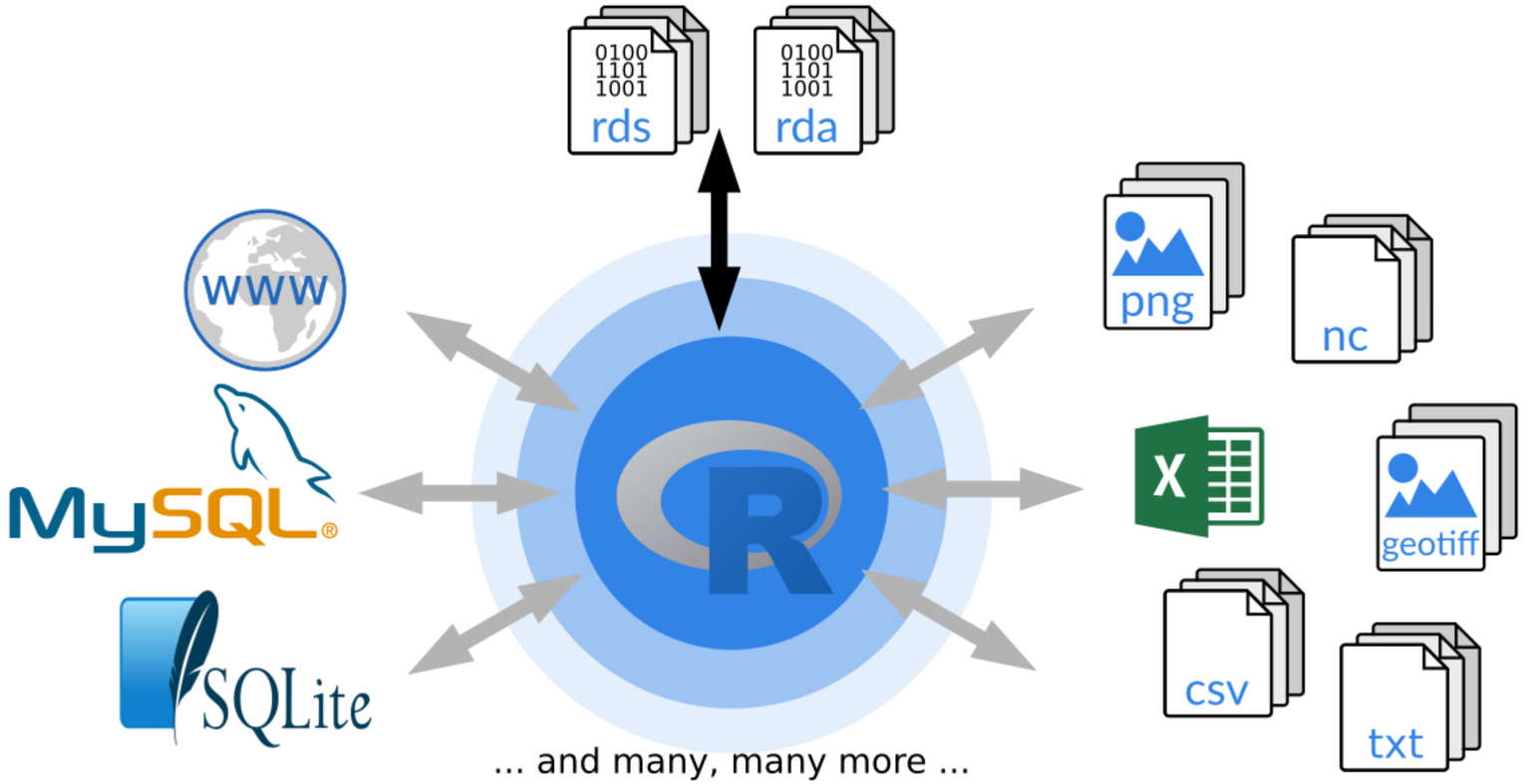
DEPARTMENT OF COMPUTER SCIENCE AND TECHNOLOGY

COURSE NAME :19CS407 DATA ANALYTICS WITH R

II YEAR /IV SEMESTER

Unit 5- DATA VISUALIZATION USING R

Topic : R - XML Files


0100
1101
1001
rds
0100
1101
1001
rda
www
MySQL
SQLite
R
png
nc
X
geotiff
csv
txt
... and many, many more ...

R - XML Files

- XML is a file format which shares both the file format and the data on the World Wide Web, intranets, and elsewhere using standard ASCII text. It stands for Extensible Markup Language (XML). Similar to HTML it contains markup tags. But unlike HTML where the markup tag describes structure of the page, in xml the markup tags describe the meaning of the data contained into he file.

- You can read a xml file in R using the "XML" package. This package can be installed using following command.

- install.packages("XML")

Reading XML File

- The xml file is read by R using the function xmlParse(). It is stored as a list in R.

```
# Load the package required to read XML files.
library("XML")
# Also load the other required package.
library("methods")
# Give the input file name to the function.
result <- xmlParse(file = "input.xml")
# Print the result.
print(result)
```

```
1
Rick
623.3
1/1/2012
IT

2
Dan
515.2
9/23/2013
Operations

3
Michelle
611
11/15/2014
IT

4
Ryan
729
5/11/2014
HR

5
Gary
843.25
3/27/2015
Finance
```

```
6
Nina
578
5/21/2013
IT

7
Simon
632.8
7/30/2013
Operations

8
Guru
722.5
6/17/2014
Finance
```

Get Number of Nodes Present in XML File

```
# Load the packages required to read XML files.
library("XML")
library("methods")
# Give the input file name to the function.
result <- xmlParse(file = "input.xml")
# Exract the root node form the xml file.
rootnode <- xmlRoot(result)
# Find number of nodes in the root.
rootsize <- xmlSize(rootnode)
# Print the result.
print(rootsize)
```

output

```
[1] 8
```

Details of the First Node

Let's look at the first record of the parsed file. It will give us an idea of the various elements present in the top level node.

```
# Load the packages required to read XML files.
library("XML")
library("methods")
# Give the input file name to the function.
result <- xmlParse(file = "input.xml")
# Exract the root node form the xml file.
rootnode <- xmlRoot(result)
# Print the result.
print(rootnode[1])
```

```
$EMPLOYEE
   1
   Rick
   623.3
   1/1/2012
   IT


attr(,"class")
[1] "XMLInternalNodeList" "XMLNodeList"
```

Get Different Elements of a Node

```
# Load the packages required to read XML files.
library("XML")
library("methods")
# Give the input file name to the function.
result <- xmlParse(file = "input.xml")
# Exract the root node form the xml file.
rootnode <- xmlRoot(result)

# Get the first element of the first node.
print(rootnode[[1]][[1]])

# Get the fifth element of the first node.
print(rootnode[[1]][[5]])

# Get the second element of the third node.
print(rootnode[[3]][[2]])
```

```
1
IT
Michelle
```

XML to Data Frame

To handle the data effectively in large files we read the data in the xml file as a data frame. Then process the data frame for data analysis.

```
# Load the packages required to read XML files.
library("XML")
library("methods")

# Convert the input xml file to a data frame.
xmldataframe <- xmlToDataFrame("input.xml")
print(xmldataframe)
```

	ID	NAME	SALARY	STARTDATE	DEPT
1	1	Rick	623.30	2012-01-01	IT
2	2	Dan	515.20	2013-09-23	Operations
3	3	Michelle	611.00	2014-11-15	IT
4	4	Ryan	729.00	2014-05-11	HR
5	NA	Gary	843.25	2015-03-27	Finance
6	6	Nina	578.00	2013-05-21	IT
7	7	Simon	632.80	2013-07-30	Operations
8	8	Guru	722.50	2014-06-17	Finance

Assessment 1

References

1. João Moreira, Andre Carvalho, Tomás Horvath – “A General Introduction to Data Analytics” – Wiley -2018
2. https://www.tutorialspoint.com/r/r_xml_files.htm

Thank You