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#Question 1
#Can you write a program that converts a matrix into a one-dimensional array?

rows=c("r1","r2")
cols=c("c1","c2","c3","c4")

M=matrix(c(2:9),nrow=2,byrow=TRUE,dimnames=list(rows,cols))

print("Original matrix:")
print(M)

output=as.vector(M)

print("1D array :")
print(output)

#Question 2
#What are the functions provided by the R program?

# R Program Functions are the programming artifacts that are supported by the
R runtime environment
# to process the programming logic efficiently. R language supported both
native function syntax to create a
# custom function and system define functions that do some predefined task.
# Simple examples of in-built functions are seq(), mean(), max(), sum(x) and
paste(...) etc.
# They are directly called by user written programs.

#Question 3
#What are the R language's limitations?

# 1) Data Handling
# In R, objects are stored in physical memory. It is in contrast with other
programming languages like Python.
# R utilizes more memory as compared to Python. It requires the entire data in
one single place which is in the memory.
# It is not an ideal option when we deal with Big Data.
#
# 2) Basic Security
# R lacks basic security. It is an essential part of most programming
languages such as Python.
# Because of this, there are many restrictions with R as it cannot be embedded
in a web-application.
#
# 3) Complicated Language
# R is a very complicated language, and it has a steep learning curve. The
people who don't have prior knowledge or programming experience may find it
difficult to learn R.
#
# 4) Weak Origin
# The main disadvantage of R is, it does not have support for dynamic or 3D
graphics. The reason behind this is its origin.
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# It shares its origin with a much older programming language "S."
#
# 5) Lesser Speed
# R programming language is much slower than other programming languages such
as MATLAB and Python.
# In comparison to other programming language, R packages are much slower.
#
# In R, algorithms are spread across different packages. The programmers who
have no prior knowledge of packages may find it difficult to implement
algorithms.

#Question 4
#What is the best way to write commands in R?

# The RStudio interface is simple. You type R code into the bottom line of the
RStudio console pane and then click Enter to run it.
# The code you type is called a command, because it will command your computer
to do something for you.
# The line you type it into is called the command line.

#Question 5
#What does the dim() function do? in R

#dim() function in R Language is used to get or set the dimension of the
specified matrix, array or data frame.

#Question 6
#Using the dim() functions, generate a 3-dimensional array of 24 elements in a
simple application.

v =  sample(1:5,24,replace = TRUE)
dim(v) = c(3,2,4)
print("3-dimension array:")
print(v)

#Question 7
#What is the best way to preserve data in R programming?

#To save data as an RData object, use the save function. To save data as a RDS
object, use the saveRDS function.
#In each case, the first argument should be the name of the R object you wish
to save.
#You should then include a file argument that has the file name or file path
you want to save the data set to.
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