

1. Please mention True or false for the below statements:

a) Prescriptive analytics is used to predict the future outcomes.

Ans: False. Predictive Analytics is used to predict future outcomes while Prescriptive Analytics is used to prescribe or draw out the best possible course of action for a given situation.

b) Base R packages are installed automatically.

Ans: False. We need to install packages by using different command functions. If we use the CRAN repository, then we use the command - `install.packages ("package")` to install different packages.

2. What is Recycling of elements in a vector?

Ans: Whenever there are two vectors and we need to do an operation on them, if one vector is short, R automatically recycles the elements of the shorter one to make it long enough to match that of the longer one.

3. Give an example of Recycling of elements.

Suppose we have two Vectors `x (1,2,3)` , `x (4,5,6,7,8)`, where the first one is shorter with only 3 elements. Now if we sum these two, we will get a warning message as follows.

```
> x(1,2,3) + x(4,5,6,7,8)
[1] 5 7 9 8 10
```

Warning message:

In `x(1, 2, 3) + x(4,5,6,7,8)` : longer object length is not a multiple of shorter object length

So R uses Recycling here which is repeating the elements in shorter one, until it is long enough to match the longer one -

```
> x(1,2,3,1,2) + x(4,5,6,7,8)
[1] 5 7 9 8 10
```