

1. Say True or False for the below statements:

- Prescriptive Analytics used to predict the future outcomes? : FALSE
- Base R packages installed automatically?: TRUE

2. What is Recycling of elements in a vector?

When applying an operation to two vectors that requires them to be the same length, R automatically repeats elements of the shorter one, until it is long enough to match the longer Vector. This process is called Recycling of elements in a vector.

3. Give an example of recycling of element

Suppose we have two Vectors $c(1,2,4,9,6) + c(6,0,9,7,3,4,3,1,8)$, where the first one is shorter with only 5 elements. Now if we sum these two, we will get a warning message as follows.

```
> c(1,2,4,9,6) + c(6,0,9,7,3,4,3,1,8)
```

```
[1] 7 2 13 16 9 5 5 5 17
```

Warning message:

In $c(1, 2, 4, 9, 6) + c(6, 0, 9, 7, 3, 4, 3, 1, 8)$:

longer object length is not a multiple of shorter object length

>

Here R , Sum those Vectors by Recycling or repeating the elements in shorter one, until it is long enough to match the longer one as follows..

```
> c(1,2,4,9,6,1,2,4,9) + c(6,0,9,7,3,4,3,1,8)
```

```
[1] 7 2 13 16 9 5 5 5 17
```