**Excel TAKE function compared with Python (numpy.take) and R equivalent (intersection of rows and columns in array)**

1. **Excel TAKE:**

Array in Columns O, P & Q as under:

|  |  |  |
| --- | --- | --- |
| 1 | 2 | 3 |
| 4 | 5 | 6 |
| 7 | 8 | 9 |
| 21 | 22 | 23 |

=TAKE(O1:Q4,-2,-3) –> Output

|  |  |  |
| --- | --- | --- |
| 7 | 8 | 9 |
| 21 | 22 | 23 |

1. **Python – Numpy Library (numpy.take function)**

Import numpy as np

arr=np.array(([1,2,3],[4,5,6],[7,8,9],[21,22,23]))

arr=np.reshape(np.intersect1d(np.take(arr, [0,1,2],axis=1),np.take(arr, [2,3],axis=0)),[2,3])

**Output:**

array([[ 7, 8, 9],

[21, 22, 23]])

1. **R Equivalent (Using base R function - Intersect)**

arr<-t(array(c(1:9,21:23),dim=c(3,4)))

arr<-array(intersect(arr[3:4,],arr[,1:3]),c(2,3))

**Output:**

[,1] [,2] [,3]

[1,] 7 8 9

[2,] 21 22 23