# RWorksheet_salve#3aPDF

Ben Robert T. Salve.

2022-10-24

## Ben Robert T. Salve. BSIT2-A

## Worksheet3

### 1)

```
LETTERS
```

```
##  [1] "A" "B" "C" "D" "E" "F" "G" "H" "I" "J" "K" "L" "M" "N" "O" "P" "Q" "R" "S"
## [20] "T" "U" "V" "W" "X" "Y" "Z"
```

```
letters
```

```
##  [1] "a" "b" "c" "d" "e" "f" "g" "h" "i" "j" "k" "l" "m" "n" "o" "p" "q" "r" "s"
## [20] "t" "u" "v" "w" "x" "y" "z"
```

#### a.

```
x <- LETTERS
x [1:11]
```

```
##  [1] "A" "B" "C" "D" "E" "F" "G" "H" "I" "J" "K"
```

#### b.

```
odd_letters <- LETTERS
odd_letters
```

```
##  [1] "A" "B" "C" "D" "E" "F" "G" "H" "I" "J" "K" "L" "M" "N" "O" "P" "Q" "R" "S"
## [20] "T" "U" "V" "W" "X" "Y" "Z"
```

```r
odd_letters <- LETTERS[1:26 %% 2 !=0]
odd_letters
```

```
##  [1] "A" "C" "E" "G" "I" "K" "M" "O" "Q" "S" "U" "W" "Y"
```

**c.**

```r
vowel_letters <- LETTERS[c(1, 5, 9, 15, 21)]
vowel_letters
```

```
## [1] "A" "E" "I" "O" "U"
```

**d.**

```r
last_5ll <- letters
last_5ll [22:26]
```

```
## [1] "v" "w" "x" "y" "z"
```

**e.**

```r
letters_between <- letters
letters_between [15:24]
```

```
##  [1] "o" "p" "q" "r" "s" "t" "u" "v" "w" "x"
```

**2)**

**a.**

**R code:**

```r
city <- c("Tuguegarao City", "Manila", "Iloilo City", "Tacloban", "Samal Island", "Davao City")
city
```

```
## [1] "Tuguegarao City" "Manila"          "Iloilo City"     "Tacloban"
## [5] "Samal Island"    "Davao City"
```

**b.**

```
temp <- c(42, 39, 34, 34, 30, 27)
temp
```

```
## [1] 42 39 34 34 30 27
```

**c.**

```
names(temp) <- city
temp
```

```
## Tuguegarao City          Manila     Iloilo City        Tacloban    Samal Island
##              42              39              34              34              30
##      Davao City
##              27
```

#The result of the code is, it set a name for the object temp.

**d.**

**Rcode:**

```
temp[c(5, 6)]
```

```
## Samal Island   Davao City
##           30           27
```

#The content of index 5 and 6 are: #Samal Island Davao City #30 27

# Using Matrices

**2)**

**a.**

**R code:**

```
mat1 <- matrix(c(1:8, 11:14), 3, 4)
mat1
```

```
##      [,1] [,2] [,3] [,4]
## [1,]    1    4    7   12
## [2,]    2    5    8   13
## [3,]    3    6   11   14
```

**b.**

**R code:**

```
mat1*2
```

```
##      [,1] [,2] [,3] [,4]
## [1,]    2    8   14   24
## [2,]    4   10   16   26
## [3,]    6   12   22   28
```

**c.**

**R code:**

```
mat1[2,]
```

```
## [1]  2  5  8 13
```

**d.**

**R code:**

```
mat1 [c(1,2),c(3,4)]
```

```
##      [,1] [,2]
## [1,]    7   12
## [2,]    8   13
```

**e.**

**R code:**

```
mat1 [c(3),c(2,3)]
```

```
## [1]  6 11
```

**f.**

**R code:**

```
mat1 [,4]
```

```
## [1] 12 13 14
```

### g.

### R code:

```
dimnames(mat1) <- list(c("isa", "dalawa", "tatlo"),c("uno", "dos", "tres", "quatro"))
mat1
```

```
##        uno dos tres quatro
## isa      1   4    7     12
## dalawa   2   5    8     13
## tatlo    3   6   11     14
```

### h.

### R code:

```
dim(mat1) <- c(6,2)
mat1
```

```
##      [,1] [,2]
## [1,]    1    7
## [2,]    2    8
## [3,]    3   11
## [4,]    4   12
## [5,]    5   13
## [6,]    6   14
```

## Using arrays

### 3.

### a.

### R code:

```
a1 <- array(c(1, 2, 3, 6, 7, 8, 9, 0, 3, 4, 5, 1))
a1
```

```
##  [1] 1 2 3 6 7 8 9 0 3 4 5 1
```

```
v1 <- array(rep(a1, 2), dim = c(2,4,3))
v1
```

```
## , , 1
##
##      [,1] [,2] [,3] [,4]
## [1,]    1    3    7    9
## [2,]    2    6    8    0
##
## , , 2
##
##      [,1] [,2] [,3] [,4]
## [1,]    3    5    1    3
## [2,]    4    1    2    6
##
## , , 3
##
##      [,1] [,2] [,3] [,4]
## [1,]    7    9    3    5
## [2,]    8    0    4    1
```

### b.

### R code:

```
dim(v1)
```

```
## [1] 2 4 3
```

#We have 3 dimensions.

### c.

### R code:

```
dimnames(v1) <- list(letters[1:2], LETTERS[1:4], c("1st-Dimensional Array", "2nd-Dimentional Array", "3
v1
```

```
## , , 1st-Dimensional Array
##
##   A B C D
## a 1 3 7 9
## b 2 6 8 0
##
## , , 2nd-Dimentional Array
##
##   A B C D
## a 3 5 1 3
```

```
## b 4 1 2 6
##
## , , 3rd-Dimensional Array
##
##   A B C D
## a 7 9 3 5
## b 8 0 4 1
```