RWorksheet_Arlante#3a

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```
#Using Vectors

#1.LETTERS

#a. You need to produce a vector that contains the first 11 letters.

first11 <- LETTERS[1:11]
(first11)
```

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

```
#b. Produce a vector that contains the odd numbered letters.

oddletters <- LETTERS[seq(1,26, by = 2)]
(oddletters)
```

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

```
#c. Produce a vector that contains the vowels

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

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

{r}

#d. Produce a vector that contains the last 5 lowercase letters.

last5lower <- letters[22:26] (last5lower)

```
#e. Produce a vector that contains letters between 15 to 24 letters in lowercase.

lower15_24 <- letters[15:24]
(lower15_24)
```

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

```
#2. Vector of Temperature.


#a. Character of cities

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. Vectors of Temperature

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

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

```
#c. Data frame to combine the city and the temp

citytemp <- data.frame(City = city, Tempreture = temp)

(citytemp)
```

```
##              City Tempreture
## 1 Tuguegarao City         42
## 2          Manila         39
## 3     Iloilo City         34
## 4        Tacloban         34
## 5    Samal Island         30
## 6      Davao City         27
```

```
#d. rename the columns using the names() function

names(citytemp) <- c("City", "Tempreture")
(citytemp)
```

```
##              City Tempreture
## 1 Tuguegarao City         42
## 2          Manila         39
## 3     Iloilo City         34
## 4        Tacloban         34
## 5    Samal Island         30
## 6      Davao City         27
```

{r}

#e. Print the structure by using str() function.

str(citytemp) #outputs the structure of citytemp

```
#f. The content of row 3 and row 4.

(citytemp[3:4, ])
```

```
##          City Tempreture
## 3 Iloilo City         34
## 4    Tacloban         34
```

```
#g. Display the city with highest temperature and the city with the lowest temperature.

(citytemp[which.max(citytemp$Tempreture), ])
```

```
##              City Tempreture
## 1 Tuguegarao City         42
```

```
(citytemp[which.min(citytemp$Tempreture), ])
```

```
##         City Tempreture
```

```
## 6 Davao City         27
```

```
#Using Matrices

# row = 2
matrix(c(5,6,7,4,3,2,1,2,3,7,8,9),nrow = 2)
```

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

```
## [,1] [,2] [,3] [,4] [,5] [,6]
## [1,] 5 7 3 1 3 8
## [2,] 6 4 2 2 7 9
# row = 3 and column = 2

matrix(data = c(3,4,5,6,7,8),3,2)
```

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

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

# creating a diagonal matrix where x value will always be 1
diag(1,nrow = 6,ncol = 5)
```

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

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

diag(6)
```

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

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