Worksheet 2

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```
#Using Vectors

#1.a
#Code:
seq(-5, 5, 1)

#Output:
#-5 -4 -3 -2 -1  0  1  2  3  4  5


#1.b
#Code
x <- 1:7
x

#Output
#The value of x is 1 2 3 4 5 6 7


#2.
#Code
seq(1,3,by= 0.2)

#Output
#1.0 1.2 1.4 1.6 1.8 2.0 2.2 2.4 2.6 2.8 3.0


#3.
#Code:
Workers <- c(34, 28, 22, 36, 27, 18, 52, 39, 42, 29, 35, 31, 27, 22, 37, 34, 19,
20, 57, 49, 50, 37, 46, 25, 17, 37, 43, 53, 41, 51, 35, 24,33, 41, 53, 40, 18,
44, 38, 41, 48, 27, 39, 19, 30, 61, 54, 58, 26, 18)



#3.a Accessing 3rd element
#Code:
Workers[3]

#Output:
#22
```

```
#3.b Accessing 2nd and 4th element.
#Code:
Workers[2]
Workers[4]

Output:
# The value is 28 for index 2 and 36 for index 4.

#3.c
#Code:
Workers[2:49]

#Output: 28 22 36 27 18 52 39 42 29 35 31 27 22 37 #34 19 20 57 49 50 37 46 25
17 37 43 53 41 51 35 24 #33 41 53 40 18 44 38 41 48 27 39 19 30 61 54 58 26


#4.
#a-b
#Code:
x <- c("first"=3, "second"=0, "third"=9)
names(x)

#Output:
#"first"  "second" "third"


#Code:
x[c("first", "third")]

#Output:
#first third
#   3      9




#5. a-b
#Code:
x <- -3:2
x[2] <- 0
x

#Output:
#-3  0 -1  0  1  2
#The output is still the same for the reason that the modified element is
changed into 0 which is no value and the value number 2 take it's place.


#6.
#a.
#Code:
Month <- c("Jan", "Feb", "March", "Apr", "May", "June")

Price_per_liter_php <- c(52.50, 57.25, 60.00, 65.00, 74.25, 54.00)
```

```
Purchase_quantity_liter <- c(25, 30, 40, 50, 10, 45)
Month
#Output: "Jan"    "Feb"    "March" "Apr"    "May"    #"June"

Price_per_liter_php
#Output: 52.50 57.25 60.00 65.00 74.25 54.00

Purchase_quantity_liter
#Output: 25 30 40 50 10 45


data_frame <- data.frame(Month, Price_per_liter_php, Purchase_quantity_liter )
data_frame
#Output:
#Month Price_per_liter_php Purchase_quantity_liter
#1    Jan                52.50                    25
#2    Feb                57.25                    30
#3 March                60.00                    40
#4    Apr                65.00                    50
#5    May                74.25                    10
#6   June                54.00                    45

#b.
#Code:
weighted.mean(Price_per_liter_php, Purchase_quantity_liter)

#Output: 59.2625




#7)
#a.
#Code:
data <- c(length(rivers), sum(rivers), mean(rivers), median(rivers), var(rivers), sd(rivers), min(rivers
data

#Output:
#141.0000   83357.0000     591.1844     425.0000 243908.4086
#493.8708     135.0000    3710.0000


#8.
#a. Vectors
#Codes:
PowerRanking <- 1:25
CelebrityName <- c("Tom Cruise", "Rolling Stones", "Oprah Winfrey", "U2",
                   "Tiger Woods", "Steven Spielberg", "Howard Stern", "50 Cent",
                   "Cast of the sopranos", "Dan Brown", "Bruce Springsteen",
                   "Donald Trump", "Muhammad Ali", "Paul McCartney",
                   "George Lucas", "Elton John", "David Letterman",
                   "Phil Mickelson", "J.K Rowling", "Bradd Pitt",
                   "Peter Jackson", "Dr. Phil McGraw", "Jay Lenon",
                   "Celine Dion", "Kobe Bryant")
```

```
Pay <- c(67, 90, 225, 110, 90, 332, 302, 41, 52, 88, 55, 44, 55, 40,
        233, 34, 40, 47, 75, 25, 39, 45, 32, 40, 31)

Data_Ranking <- data.frame(PowerRanking, CelebrityName, Pay)
Data_Ranking

#Output:
#PowerRanking          CelebrityName Pay
#1              1                 Tom Cruise   67
#2              2              Rolling Stones   90
#3              3              Oprah Winfrey 225
#4              4                         U2 110
#5              5               Tiger Woods   90
#6              6           Steven Spielberg 332
#7              7               Howard Stern 302
#8              8                    50 Cent   41
#9              9 Cast of the sopranos   52
#10            10                  Dan Brown   88
#11            11          Bruce Springsteen   55
#12            12               Donald Trump   44
#13            13               Muhammad Ali   55
#14            14              Paul McCartney   40
#15            15                George Lucas 233
#16            16                 Elton John   34
#17            17             David Letterman   40
#18            18              Phil Mickelson   47
#19            19                 J.K Rowling   75
#20            20                  Bradd Pitt   25
#21            21               Peter Jackson   39
#22            22             Dr. Phil McGraw   45
#23            23                  Jay Lenon   32
#24            24                 Celine Dion   40
#25            25                Kobe Bryant   31

#b.
#Code:
PowerRanking [19] <- 15
PowerRanking
Pay [19] <- 90
Pay

#Output:
#67  90 225 110  90 332 302  41  52  88  55  44  55  40 233
#34  40  47  90  25  39  45  32  40  31

#c.
#Code:
Magazine_Ranking <- data.frame(PowerRanking, CelebrityName, Pay)
Magazine_Ranking

#Output:
#  PowerRanking          CelebrityName Pay
#1              1                 Tom Cruise   67
```

```
#2          2        Rolling Stones  90
#3          3        Oprah Winfrey 225
#4          4                   U2 110
#5          5         Tiger Woods  90
#6          6     Steven Spielberg 332
#7          7         Howard Stern 302
#8          8              50 Cent  41
#9          9 Cast of the sopranos  52
#10        10            Dan Brown  88
#11        11     Bruce Springsteen  55
#12        12         Donald Trump  44
#13        13         Muhammad Ali  55
#14        14        Paul McCartney  40
#15        15         George Lucas 233
#16        16           Elton John  34
#17        17       David Letterman  40
#18        18       Phil Mickelson  47
#19        15          J.K Rowling  90
#20        20           Bradd Pitt  25
#21        21        Peter Jackson  39
#22        22       Dr. Phil McGraw  45
#23        23            Jay Lenon  32
#24        24          Celine Dion  40
#25        25          Kobe Bryant  31
```