**Question 1(Q1)**

# a)

scores <- c(40,88,60,23,76,51,59,99,96,34)

#b) lenth of itmes

n <- length(scores)

n

#c) first and second items

first\_and\_second <- scores[c(1,2)]

first\_and\_second

#d) first and last items

first\_and\_last <- scores[c(1,n)]

first\_and\_last

#e) middle two items

middle\_two <- scores[c(n/2,n/2+1)]

middle\_two

**Console result:**

#Question 1(Q1)

> # a)

> scores <- c(40,88,60,23,76,51,59,99,96,34)

>

> #b) lenth of itmes

> n <- length(scores)

> n

[1] 10

> #c) first and second items

> first\_and\_second <- scores[c(1,2)]

> first\_and\_second

[1] 40 88

>

> #d) first and last items

> first\_and\_last <- scores[c(1,n)]

> first\_and\_last

[1] 40 34

> #e) middle two items

> middle\_two <- scores[c(n/2,n/2+1)]

> middle\_two

[1] 76 51

**#Question 2 (Q2)**

#a)average scores

avg\_score <- mean(scores)

avg\_score

#b)comparision

below\_avg <- scores <= avg\_score

below\_avg

#c)

above\_avg <- scores > avg\_score

above\_avg

#d)

count\_below\_avg <- sum(below\_avg)

count\_below\_avg

#e)

count\_above\_avg <- sum(above\_avg)

count\_above\_avg

**Console result:**

#Question 2 (Q2)

>

> #a)average scores

> avg\_score <- mean(scores)

> avg\_score

[1] 62.6

>

> #b)comparision

> below\_avg <- scores <= avg\_score

> below\_avg

[1] TRUE FALSE TRUE TRUE FALSE TRUE TRUE FALSE FALSE TRUE

>

> #c)

> above\_avg <- scores > avg\_score

> above\_avg

[1] FALSE TRUE FALSE FALSE TRUE FALSE FALSE TRUE TRUE FALSE

> #d)

> count\_below\_avg <- sum(below\_avg)

> count\_below\_avg

[1] 6

>

> #e)

> count\_above\_avg <- sum(above\_avg)

> count\_above\_avg

[1] 4

>

**Question 3:**

#Q3

#a)

scores\_below\_avg <- scores[(scores)<(avg\_score)]

scores\_below\_avg

#b)

scores\_above\_avg <- scores[scores > avg\_score]

scores\_above\_avg

**Console result:**

> #Q3

> #a)

> scores\_below\_avg <- scores[(scores)<(avg\_score)]

> scores\_below\_avg

[1] 40 60 23 51 59 34

> #b)

> scores\_above\_avg <- scores[scores > avg\_score]

> scores\_above\_avg

[1] 88 76 99 96

>

**Question 4:**

#Q4

#a)

odd\_index\_values <- scores[seq(1,n,2)]

odd\_index\_values

#b)

even\_index\_values <- scores[seq(2,n,2)]

even\_index\_values

**Console result:**

#Q4

>

> #a)

> odd\_index\_values <- scores[seq(1,n,2)]

> odd\_index\_values

[1] 40 60 76 59 96

> #b)

> even\_index\_values <- scores[seq(2,n,2)]

> even\_index\_values

[1] 88 23 51 99 34

>

Question 5:

#Q5

#a)

format\_scores\_version1 <- paste(LETTERS[1:n],scores,sep = "=")

format\_scores\_version1

#b)

format\_scores\_version2 <- paste(LETTERS[n:1],scores,sep = "=")

format\_scores\_version2

**Console result:**

#Q5

> #a)

> format\_scores\_version1 <- paste(LETTERS[1:n],scores,sep = "=")

> format\_scores\_version1

[1] "A=40" "B=88" "C=60" "D=23" "E=76" "F=51" "G=59" "H=99" "I=96" "J=34"

> #b)

> format\_scores\_version2 <- paste(LETTERS[n:1],scores,sep = "=")

> format\_scores\_version2

[1] "J=40" "I=88" "H=60" "G=23" "F=76" "E=51" "D=59" "C=99" "B=96" "A=34"

>

**Question6:**

#Q6

#a)

score\_matrix <- matrix(scores,nrow = 2,byrow = TRUE)

score\_matrix

#b)

first\_and\_last\_version1<- score\_matrix[,c(1,ncol(score\_matrix))]

first\_and\_last\_version1

**Console result:**

> #Q6

> #a)

> score\_matrix <- matrix(scores,nrow = 2,byrow = TRUE)

>

> score\_matrix

[,1] [,2] [,3] [,4] [,5]

[1,] 40 88 60 23 76

[2,] 51 59 99 96 34

>

> #b)

> first\_and\_last\_version1<- score\_matrix[,c(1,ncol(score\_matrix))]

> first\_and\_last\_version1

[,1] [,2]

[1,] 40 76

[2,] 51 34

>

**7.Question**

#Q7

#a)

named\_matrix <-score\_matrix

dimnames(named\_matrix)<- list(paste("Quiz",c(1:nrow(score\_matrix)),sep = "\_"),

paste("Student",c(1:ncol(score\_matrix)),sep = "\_"))

named\_matrix

#b)

first\_and\_last\_version2 <- named\_matrix[,c(1,ncol(named\_matrix))]

first\_and\_last\_version2

**Console result:**

#Q7

> #a)

> named\_matrix <-score\_matrix

> dimnames(named\_matrix)<- list(paste("Quiz",c(1:nrow(score\_matrix)),sep = "\_"),

+ paste("Student",c(1:ncol(score\_matrix)),sep = "\_"))

> named\_matrix

Student\_1 Student\_2 Student\_3 Student\_4 Student\_5

Quiz\_1 40 88 60 23 76

Quiz\_2 51 59 99 96 34

>

> #b)

> first\_and\_last\_version2 <- named\_matrix[,c(1,ncol(named\_matrix))]

> first\_and\_last\_version2

Student\_1 Student\_5

Quiz\_1 40 76

Quiz\_2 51 34

>