#Question1:

#a)

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

#b)

n <- length(scores)

n

#c)

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

first\_and\_second

#d)

# first and last elements in vector.

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

first\_and\_last

#e)

#finding middle two elements in any even number vector.

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

middle\_two

Answer 1:

> #Q1

> #a)

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

> #b)

> n <- length(scores)

> n

[1] 10

> #c)

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

> first\_and\_second

[1] 40 88

> #d)

> # first and last elements in vector.

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

> first\_and\_last

[1] 40 34

> #e)

> #finding middle two elements in any even number vector.

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

> middle\_two

[1] 76 51

Question2:

#Q2

#a)

avg\_score <- mean(scores)

avg\_score

#b)

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

Answer 2:

> #Q2

>

> #a)

> avg\_score <- mean(scores)

> avg\_score

[1] 62.6

> #b)

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

> below\_avg

[1] TRUE FALSE TRUE TRUE FALSE TRUE

[7] TRUE FALSE FALSE TRUE

> #c)

> above\_avg <- scores > avg\_score

> above\_avg

[1] FALSE TRUE FALSE FALSE TRUE FALSE

[7] 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

Question3:

#Q3

#a)

scores\_below\_avg <- scores[scores <= avg\_score]

scores\_below\_avg

#b)

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

scores\_above\_avg

Answer 3:

#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[c(1:n)%%2 ==1]

odd\_index\_values

#b)

even\_index\_values<- scores[c(1:n)%%2 ==0]

even\_index\_values

Answer 4:

> #Q4

> #a)

> odd\_index\_values <-scores[c(1:n)%%2 ==1]

> odd\_index\_values

[1] 40 60 76 59 96

> #b)

> even\_index\_values<- scores[c(1:n)%%2 ==0]

> even\_index\_values

[1] 88 23 51 99 34

Code for Question 5:

> #Q4

> #a)

> odd\_index\_values <-scores[c(1:n)%%2 ==1]

> odd\_index\_values

[1] 40 60 76 59 96

> #b)

> even\_index\_values<- scores[c(1:n)%%2 ==0]

> even\_index\_values

[1] 88 23 51 99 34

>

Answer 5:

> #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"

[6] "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"

[6] "E=51" "D=59" "C=99" "B=96" "A=34"

>

Code for Question 6:

> #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"

[6] "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"

[6] "E=51" "D=59" "C=99" "B=96" "A=34"

>

Answer 6:

> #Q6

> #a)

> score\_matrix <- matrix(scores,nrow = 2,ncol = n/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 column will have all rows but first and last column. first

> #column has index 1 and last column has index of total columns number.

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

> first\_and\_last\_version1

[,1] [,2]

[1,] 40 76

[2,] 51 34

>

Code for question 7:

#Q7

#a)

named\_matrix <- score\_matrix

colnames(named\_matrix) <- paste("Student",1:ncol(named\_matrix),sep = "\_")

rownames(named\_matrix)<- paste("Quiz",1:nrow(named\_matrix),sep = "\_")

named\_matrix

#b)

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

first\_and\_last\_version2

answer 7:

> #Q7

> #a)

> named\_matrix <- score\_matrix

> colnames(named\_matrix) <- paste("Student",1:ncol(named\_matrix),sep = "\_")

> rownames(named\_matrix)<- paste("Quiz",1:nrow(named\_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

>