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Assignment 1

Q1

```
#Question1
print("Question1")
scores <- c(40, 88, 60, 23, 76, 51, 59, 99, 96, 34)
n <- length(scores)
print(n)
first_and_second <- scores[1:2]
print(first_and_second)
first_and_last <- scores[c(1, n)]
print(first_and_last)
middle_two <- scores[c(n/2, n/2+1)]
print(middle_two)
print('=============================================================')
```

```
[1] "Question1"
[1] 10
[1] 40 88
[1] 40 34
[1] 76 51
[1] "============================================================="
```

Q2

```
#Question2
print("Question2")
avg_score <- mean(scores)
print(avg_score)
below_avg <- scores <= avg_score
print(below_avg)
above_avg <- scores > avg_score
print(above_avg)
count_below_avg <- sum(below_avg)
print(count_below_avg)
count_above_avg <- sum(above_avg)
print(count_above_avg)
print('=============================================================')
```

```
[1] "Question2"
[1] 62.6
 [1]  TRUE FALSE  TRUE  TRUE FALSE  TRUE  TRUE FALSE FALSE  TRUE
 [1] FALSE  TRUE FALSE FALSE  TRUE FALSE FALSE  TRUE  TRUE FALSE
[1] 6
[1] 4
[1] "============================================================="
```

Q3

```
#Question3
print("Question3")
scores_below_avg <- scores[scores <= avg_score]
print(scores_below_avg)
scores_above_avg <- scores[scores > avg_score]
print(scores_above_avg)
print('==========================================================')
```

```
[1] "Question3"
[1] 40 60 23 51 59 34
[1] 88 76 99 96
[1] "=========================================================="
```

Q4

```
#Question4
print("Question4")
odd_index_values <- scores[seq(1, n, by=2)]
print(odd_index_values)
even_index_values <- scores[seq(2, n, by=2)]
print(even_index_values)
print('==========================================================')
```

```
[1] "Question4"
[1] 40 60 76 59 96
[1] 88 23 51 99 34
[1] "=========================================================="
```

Q5

```
#Question5
print("Question5")
format_scores_version1 <- paste(LETTERS[1:10], scores, sep = '=')
print(format_scores_version1)
format_scores_version2 <- paste(LETTERS[10:1], scores, sep = '=')
print(format_scores_version2)
print('==========================================================')
```

```
[1] "Question5"
 [1] "A=40" "B=88" "C=60" "D=23" "E=76" "F=51" "G=59" "H=99" "I=96" "J=34"
 [1] "J=40" "I=88" "H=60" "G=23" "F=76" "E=51" "D=59" "C=99" "B=96" "A=34"
[1] "=========================================================="
```

Q6

```
#Question6
print("Question6")
scores_matrix <- matrix(scores, nrow = 2, ncol = n/2, byrow = TRUE)
print(scores_matrix)
first_and_last_version1 <- matrix(c(scores_matrix[,1], scores_matrix[,ncol(scores_matrix)]), nrow = nrow(scores_matrix))
print(first_and_last_version1)
print('==========================================================')
```

```
[1] "Question6"
     [,1] [,2] [,3] [,4] [,5]
[1,]   40   88   60   23   76
[2,]   51   59   99   96   34
     [,1] [,2]
[1,]   40   76
[2,]   51   34
[1] "============================================================"
```

Q7

```r
#Question7
print("Question7")
named_matrix <- scores_matrix
colnames(named_matrix) <- paste("Student_", 1: ncol(named_matrix), sep = "")
rownames(named_matrix) <- paste("Quiz_", 1: nrow(named_matrix), sep = "")
print(named_matrix)
first_and_last_version2 <- named_matrix[, c(1, ncol(named_matrix))]
print(first_and_last_version2)
```

```
[1] "Question7"
       Student_1 Student_2 Student_3 Student_4 Student_5
Quiz_1        40        88        60        23        76
Quiz_2        51        59        99        96        34
       Student_1 Student_5
Quiz_1        40        76
Quiz_2        51        34
```