```r
#1.
name <- c("alice", "BOB", "Charlie", "DIANA")

#using "tolower()" to make sure all characters are lowercased
#then using "tools::toTitleCase()" to capitalize the first letter of a string
title_case <- tools::toTitleCase(tolower(names))
title_case

#using paste0() instead of paste() to prevent having a space in between the prefix and the name
pasted_names <- paste0("ID_", title_case_names)
pasted_names


#2.
#create a function that will get the vectors then solve for the mean, median, and standard deviation
get_mean_median_sd <- function(vectors) {
  list(
    mean = mean(vectors),
    median = median(vectors),
    standard_deviation = sd(vectors)
  )
}

#generate 20 numbers
random_numbers <- rnorm(20)
#calling the function and assigning its returning list to a variable then printing it
random_numbers
mean_median_sd <- get_mean_median_sd(random_numbers)
mean_median_sd


#3.
# creating a function that will classify numbers
classify <- function(num) {
  # Handle when there is no number passed to the function
  if (length(num) == 0)
    return "There is no number to classify"

  sapply(num, function(x) {
    if (is.na(x)) {
      "NA"
    } else if (x > 0) {
      "Positive"
    } else if (x < 0) {
      "Negative"
    } else {
      "Zero"
    }
  })
}

#provide dataset with NA to test if the function can handle it
number <- c(-1, 2,0, 28, NA, 21)
numbers <- classify(number)
numbers



#4.
scores <- c(70, 85, 90, 65, 95, 88)

# create a list that only contains scores higher the 80
scores_above80 <- scores[scores > 80]
scores_above80
# use the mean() function to get the average
average <- mean(scores_above80)
average

#5.
# Recursive Fibonacci function
fibonacci_calculator <- function(N){
  fibonacci <- c(0,1)
  count <- 2

  while (count < N){
    length <- length(fibonacci) + 1
    result <- fibonacci[length-1] + fibonacci[length-2]
    fibonacci <- append(fibonacci, result)
    count <- count + 1
  }
  return(result)
}

fibonacci_calculator(5)
fibonacci_calculator(10)
```

```
> title_case_names <- tools::toTitleCase(tolower(name))
> title_case_names
[1] "Alice"   "Bob"     "Charlie" "Diana"
>
```

```
> mean_median_sd
$mean
[1] -0.01428208

$median
[1] -0.06467525

$standard_deviation
[1] 0.9293291
```

```
> #provide dataset with NA to test if the function can handle it
> number <- c(-1, 2,0, 28, NA, 21)
> numbers <- classify(number)
> numbers
[1] "Negative" "Positive" "Zero"     "Positive" "NA"       "Positive"
>
```

```
> # create a list that only contains scores higher the 80
> scores_above80 <- scores[scores > 80]
> scores_above80
[1] 85 90 95 88
> # use the mean() function to get the average
> average <- mean(scores_above80)
> average
[1] 89.5
>
```

```
>
> fibonacci_calculator(5)
[1] 3
> fibonacci_calculator(10)
[1] 34
>
```