#install libraries #tinytex::install_tinytex()

Title: "IST687 – Intro Homework"
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Exercise: Define the following vectors, which represent the weight and height of people on a particular team (in inches and pounds):

Declare Variables:

```r
#  Declare height
    height <- c(59,60,61,58,67,72,70)

#  Declare weight
    weight <- c(150,140,180,220,160,140,130)

#   Declare variable "a"
    a <- 150
```

Step 1: Calculating means

```r
# 1) Compute, using R, the average height (called mean in R)
      meanH <- mean(height)

# 2) Compute, using R, the average height (called mean in R)
      meanW <- mean(weight)

# 3) Calculate the length of the vector 'height' and 'weight'
      lengthH <- length(height)
      lengthW <- length(weight)

# 4) Calculate the sum of the heights
      sumH <- sum(height)
      sumW <- sum(weight)

# 5) Compute the average of both height and weight, by dividing the sum (of the height or the width, as

      avgH <- sumH/lengthH
      avgW <- sumW/lengthW

      if(meanH == avgH)  "Mean and Avearge heights are same"
```

```
## [1] "Mean and Avearge heights are same"
```

```r
      if(meanW == avgW)  "Mean and Avearge weights are same"
```

```
## [1] "Mean and Avearge weights are same"
```

Step 2: Using max/min functions

```r
# 6) Compute the max height, store the result in 'maxH'
    maxH <- max(height)

# 7) Compute the min weight, store the results in 'minW'
    minW <- min(weight)
```

Step 3: Vector Math

```r
# 8) Create a new vector, which is the weight + 5 (every person gained 5 pounds)
    newWeight <- weight+5

# 9) Compute the weight/height for each person, using the new weight just created
    newWoverH <- newWeight/height
```

Step 4: Using Conditional if statements

```r
# 10) Write the R code to test if max height is greater than 60 (output "yes" or "no")
    if(maxH > 60) "yes" else "no"
```

```
## [1] "yes"
```

```r
# 11) Write the R code to if min weight is greater than the variable 'a' (output "yes" or "no")
    if(minW > a) "yes" else "no"
```

```
## [1] "no"
```