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# Applied Data Science

IST687 Intro to Data Science, Spring 2019

Due Date: 04/8/2019

Homework: 1

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#R Code - unexecuted

# ----- HW1: Intro -----

# create a vector "height" containing numbers

height <- c(59,60,61,58,67,72,70)

# create a vector "weight" containing numbers

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

# define a variable a (a = 150)

a <- 150

# -----

# Step 1: Calculating means

# compute, using R, the average(mean) height

mean(height)

# compute, using R, the average(mean) weight

mean(weight)

# calculate the length of the vector height (the number of elements inside the vector)

length(height)

# calculate the length of the vector weight (the number of elements inside the vector)

length(weight)

# calculate the sum of the heights

sum(height)

```
# compute the average height by dividing the sum by the length of the vector
sum(height)/length(height)
```

```
# compute the average weight by dividing the sum by the length of the vector
sum(weight)/length(weight)
```

```
# -----
```

```
# Step 2: Using max/min functions
```

```
# compute the max height, store the result in maxH
```

```
maxH <- max(height)
```

```
maxH
```

```
# compute the min weight, store the results in minW
```

```
minW <- min(weight)
```

```
minW
```

```
# -----
```

```
# Step 3: Vector Math
```

```
# create a new vector, which is the weight + 5 (every person gained 5 pounds)
```

```
weightPlusFive <- weight + 5
```

```
weightPlusFive
```

```
# compute the pounds/inch for each person, using the new weight just created
```

```
poundsPerInch <- weightPlusFive / height
```

```
poundsPerInch
```

```
# -----
```

```
# Step 4: Using Conditional if statements
```

```
# test if max height is greater than 60 (output yes or no)
```

```
if(max(height)>60) print("yes") else print("no")
```

```
# test if min weight is greater than the variable a (output yes or no)
```

```
if(min(weight)>a) print("yes") else print("no")
```

```

#R Code – unexecuted
> # ----- HW1: Intro -----
>
> # create a vector "height" containing numbers
> height <- c(59,60,61,58,67,72,70)
> # create a vector "weight" containing numbers
> weight <- c(150,140,180,220,160,140,130)
> # define a variable a (a = 150)
> a <- 150
>
> # -----
> # Step 1: Calculating means
> # compute, using R, the average(mean) height
> mean(height)
[1] 63.85714
>
> # compute, using R, the average(mean) weight
> mean(weight)
[1] 160
>
> # calculate the length of the vector height (the number of elements inside
the vector)
> length(height)
[1] 7
>
> # calculate the length of the vector weight (the number of elements inside
the vector)
> length(weight)
[1] 7
>
> # calculate the sum of the heights
> sum(height)
[1] 447
>
> # compute the average height by dividing the sum by the length of the vecto
r
> sum(height)/length(height)
[1] 63.85714
>
> # compute the average weight by dividing the sum by the length of the vecto
r
> sum(weight)/length(weight)
[1] 160
>
>
> # -----
> # Step 2: Using max/min functions
> # compute the max height, store the result in maxH
> maxH <- max(height)
> maxH
[1] 72
>
> # compute the min weight, store the results in minW
> minW <- min(weight)
> minW
[1] 130
>

```

```

> # -----
> # Step 3: Vector Math
> # create a new vector, which is the weight + 5 (every person gained 5 pounds)
> weightPlusFive <- weight + 5
> weightPlusFive
[1] 155 145 185 225 165 145 135
>
> # compute the pounds/inch for each person, using the new weight just created
> poundsPerInch <- weightPlusFive / height
> poundsPerInch
[1] 2.627119 2.416667 3.032787 3.879310 2.462687 2.013889 1.928571
>
> # -----
> # Step 4: Using Conditional if statements
> # test if max height is greater than 60 (output yes or no)
> if(max(height)>60) print("yes") else print("no")
[1] "yes"
>
> # test if min weight is greater than the variable a (output yes or no)
> if(min(weight)>a) print("yes") else print("no")
[1] "no"

```