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EPID 674.002

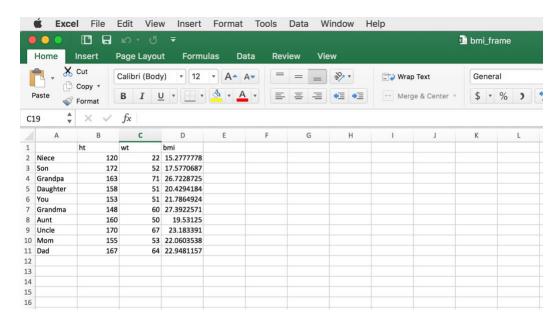Exercise 3A

Problem 1.

```
> df = data.frame (ht, wt, bmi)
> df
          ht wt      bmi
Niece    120 22 15.27778
Son      172 52 17.57707
Grandpa  163 71 26.72287
Daughter 158 51 20.42942
You      153 51 21.78649
Grandma  148 60 27.39226
Aunt     160 50 19.53125
Uncle    170 67 23.18339
Mom      155 53 22.06035
Dad      167 64 22.94812
>
```

Problem 2.

CSV

bmi_frame.csv

	Excel	File	Edit	View	Insert	Format	Tools	Data	Window	Help					bmi_frame

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	A	B	C	D	E	F	G	H	I	J	K	L
1		ht	wt	bmi								
2	Niece	120	22	15.2777778								
3	Son	172	52	17.5770687								
4	Grandpa	163	71	26.7228725								
5	Daughter	158	51	20.4294184								
6	You	153	51	21.7864924								
7	Grandma	148	60	27.3922571								
8	Aunt	160	50	19.53125								
9	Uncle	170	67	23.183391								
10	Mom	155	53	22.0603538								
11	Dad	167	64	22.9481157								
12												
13												
14												
15												
16												

Problem 3.
Min BMI: Niece
Max BMI: Grandma

Problem 4.

Mean BMI: 21.69
Median BMI: 21.92
SD BMI: 3.74

Code.

```
> #Homework 3A | EPID 674.002 | Stephanie Mecham
>
> setwd ("~/Desktop/Hw3") #Setting a working directory
>
> #Problem 1
>
>#Creating vectors
> ht <- c(120, 172, 163, 158, 153, 148, 160, 170, 155, 167)
> wt <- c(22, 52, 71, 51, 51, 60, 50, 67, 53, 64)
< x <-  c("Niece", "Son", "Grandpa", "Daughter", "You", "Grandma", "Aunt", "Uncle", "Mom", "Dad")
>
>#Assigning family members to names attribute of these vectors
> names(ht) <- x
> names(wt) <- x
>
>#Creating data frame
> df = data.frame (ht, wt)
>
>#Creating BMI variable
>
> ht_m <- ht/100
> bmi <- wt/((ht_m)^2)
> bmi
   Niece     Son Grandpa Daughter     You Grandma    Aunt   Uncle
15.27778 17.57707 26.72287 20.42942 21.78649 27.39226 19.53125 23.18339
    Mom     Dad
22.06035 22.94812
>
>
>#Assigning family members to names attribute of new vector
```

```
> names(bmi) <- x
>
>#Adding bmi vector to dataframe
> df = data.frame (ht, wt, bmi)
> df
        ht wt     bmi
Niece   120 22 15.27778
Son     172 52 17.57707
Grandpa  163 71 26.72287
Daughter 158 51 20.42942
You     153 51 21.78649
Grandma  148 60 27.39226
Aunt    160 50 19.53125
Uncle   170 67 23.18339
Mom     155 53 22.06035
Dad     167 64 22.94812
>
>#Saving as permanent object
>save (df, file="bmi_frame.rda")
>
>#Problem 2
>
>#Exporting as csv
> write.csv(df, file="bmi_frame.csv")
>
>
>#Problem 3
>
>#Identifying people with lowest and highest BMI
> sort (bmi)
   Niece     Son    Aunt Daughter     You     Mom     Dad   Uncle
15.27778 17.57707 19.53125 20.42942 21.78649 22.06035 22.94812 23.18339
 Grandpa  Grandma
26.72287 27.39226
>
>
>#Problem 4
>
>#Obtaining mean and median of BMI
> summary(bmi)
   Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
  15.28   19.76   21.92   21.69   23.12   27.39
>
```

```
>#Obtaining standard deviation of BMI
> sapply(df, sd, na.rm = TRUE)
     ht       wt      bmi
14.938392 13.568346  3.742951
>
>
>#End of code
```