Week 3 Assignment

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Assignment 3 responses

Below are my responses for Assignment 3.

Create a new column in the AmesData data frame which has a value of 1 if the house is built in year 2000 or later or 0 if it is built before year 2000 using the following method.

Question 1: **ifelse(name this column – w3ifelse). What is the first 10 elements of w3ifelse?**

Response: **See code below**

```
library(AmesHousing)
library(dplyr)
```

```
##
## Attaching package: 'dplyr'
```

```
## The following objects are masked from 'package:stats':
##
##     filter, lag
```

```
## The following objects are masked from 'package:base':
##
##     intersect, setdiff, setequal, union
```

```
# Load data
AmesData <- make_ames()

AmesData$w3ifelse <- if_else(AmesData$Year_Built >= 2000, 1, 0)
head(AmesData$w3ifelse, 10)
```

```
##  [1] 0 0 0 0 0 0 1 0 0 0
```

Question 2: **if-Else and a For loop (name this column – w3for) What is the first 10 elements of w3for?**

Response: **See code below**

```
AmesData$w3for = numeric(nrow(AmesData)) # instantiate column with zeros
for (i in 1:nrow(AmesData)) {

  if (is.na(AmesData$Year_Built[i])){
    AmesData$w3for[i] <- NA
  } else if(AmesData$Year_Built[i] >= 2000){
    AmesData$w3for[i] <- 1
  } else {
    AmesData$w3for[i] <- 0
  }
```

```
}

head(AmesData$w3for, 10)
```

```
##  [1] 0 0 0 0 0 0 1 0 0 0
```

Question 3: **Build your own function and use sapply (name this column - w3apply) What is the first 10 elements of w3apply?**

Response: **See code below**

```
past2000 <- function(x) {
  if (is.na(x)) return (x)
  else if ( x >=2000) return (1)
  else return (0)
}

AmesData$w3apply <- sapply(AmesData$Year_Built, past2000)
head(AmesData$w3apply, 10)
```

```
##  [1] 0 0 0 0 0 0 1 0 0 0
```

Question 4: **Create a column w3diff which is the difference of the two columns w3ifelse and w3apply. DO NOT use a for loop or the apply set of functions for this step. Simple subtraction will work. What is the total sum of this column?**

Response: **See code below**

```
AmesData$w3diff <- AmesData$w3apply - AmesData$w3for
sum(AmesData$w3diff)
```

```
## [1] 0
```

As we can see, the difference is 0.