Lab 02 - Logical Operators

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Load the necessary packages and dataset.

```
##load data
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
```

```
library(pander)
dat <- read.csv( "https://raw.githubusercontent.com/lecy/maps-in-R/master/Data/syr_parcels.csv" )
```

Question 1

What is the total assessed value of all of the taxable land in Syracuse?

- $7,538,424,950

```
totalassessedva <- sum(dat$AssessedVa, na.rm=T)
as.numeric((totalassessedva))
```

```
## [1] 7538424950
```

Question 2

What proportion of land parcels is not taxable? What is the value of these non-taxable parcels?

1. 12.28%
2. $3,022,568,602

```
taxable <- dat$LandUse=="Single Family" | dat$LandUse=="Two Family" | dat$LandUse=="Three Family" | dat$
percent.nottaxable <- sum( !taxable ) / length(dat$LandUse)
percent.nottaxable
```

```
## [1] 0.1227652
```

```
paste0((round((percent.nottaxable*100),digits = 2)),"%")
```

```
## [1] "12.28%"
```

```
#Value of the non-taxable parcels
sum (dat$AssessedVa [!taxable])
```

```
## [1] 3022568602
```

Question 3

Which property has the highest delinquient tax bill?

- Property with row location 22469 in the data set has the highest delinquent tax bill.

```
which.max(dat$AmtDelinqu)
```

```
## [1] 22469
```

```
max.delinquent <- dat[22469,]
pander( max.delinquent )
```

Table 1: Table continues below

	TAX_ID	PRINTKEY	FRONTFEET	DEPTH	SqFt	Acres
22469	3.115e+25	104.-22-01.2	266	477	119649	2.747

Table 2: Table continues below

	Sec_Block	TAX_ID_1	SURA	Quad	Nhood	TNT_NAME
22469	3.115e+15	3.115e+25	N	NW	Downtown	Downtown

Table 3: Table continues below

	Special_Nh	Assessment	CensusTrac	CC_Dist	COUNTY_LEG
22469	NA	1	32	4	8

Table 4: Table continues below

	SEIZB	Owner	LUCODE	LandUse	Units
22469	NA	UNITED STATES OF AMERICA	464	Commercial	0

Table 5: Table continues below

	AmtDelinqu	Totint	TaxYrsDeli	StNum	StName
22469	1543354	3517981	13	100-34	CLINTON ST S & WASHINGTON

Table 6: Table continues below

	AS400_OCV	IPS_OCV	Condition	AssessedLa	AssessedVa
22469	0	NA	NA	1139200	21933900

Table 7: Table continues below

	VacantBuil	DVDATE	CityTaxabl	STARS	STARC	STAR	Owner2
22469	N	0	0	0	0	NA	NA

Table 8: Table continues below

	Add1	Add2	Add3	Add4	ZIP	ZIP2
22469	NA	NA	26 FEDERAL PLAZA RM 2407	NEW YORK NY	10278	NA

Table 9: Table continues below

	WaterServi	YearBuilt	SALES	PNUMBR	OverdueWat	WARD
22469	A	1976	NA	917100501	638.8	9

Table 10: Table continues below

	SBL	CountyTXBL	SchoolTXBL	Bankruptcy	TOTSYR
22469	104.-22-01.2	0	0	NA	783806

Table 11: Table continues below

	TOTONO	INTSYR	INTONO	TaxTrust	SENIOR_EXE	VET_EXEMPT
22469	759548	1810034	1707947	NA	NA	NA

	Redemption	Round
22469	0	NA

Question 4

Which of these neighborhoods listed below has the highest proportion of vacant buildings?

- Strathmore, at 8.76% of vacancies.

```
find.vacantbld <- function(mycrib)
{
  empty.nhood <- dat$Nhood == mycrib & dat$VacantBuil == "Y"
  prop.emptynhood <- sum(empty.nhood, na.rm=T) / sum(dat$Nhood == mycrib, na.rm=T)
  return(prop.emptynhood)
}

emptywcott <- find.vacantbld("Westcott")
emptynside <- find.vacantbld("Northside")
emptysmore <- find.vacantbld("Strathmore")
emptysside <- find.vacantbld("Southside")
empty.4hoods <- c(emptywcott,emptynside,emptysside, emptysmore)

names(empty.4hoods) <- c("Westcott", "Northside", "Strathmore", "Southside")
which.max(empty.4hoods)
```

```
## Strathmore
##          3
```

```
index<- which.max(empty.4hoods)
prop.mostempty <- empty.4hoods[index]
paste0((round((prop.mostempty*100),digits = 2)),"%")
```

```
## [1] "8.76%"
```

Question 5

How many single family homes worth more than $100,000 each are located in each of the four neighborhoods above?

- Westcott has 208 homes worth more than $100K

- Northside has 5 homes worth more than $100K
- Strathmore has 461 homes worth more than $100K
- Southside has 0 homes worth more than $100K

```
find.100khomes <- function(mycrib){
  singlehome.inhood <- dat$LandUse=="Single Family" & dat$Nhood == mycrib & dat$AssessedVa > 100000
  return(sum(singlehome.inhood))
}
find.100khomes("Westcott")
```

```
## [1] 208
```

```
find.100khomes("Northside")
```

```
## [1] 5
```

```
find.100khomes("Strathmore")
```

```
## [1] 461
```

```
find.100khomes("Southside")
```

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