Diversity Index Score and Level

```
# Import the needed packages
library(xlsx)

# Read in CSV data. Data is the American Community Survey (ACS) 2015 5-year estimates.
CenData <- read.csv(file="ACS_Census_2010-2015.csv", header=TRUE, sep=",")


# Calculate the Diversity Index. To do so, square the percentage of each race/ethnic group (Whit
e, Black, American Indian, Asian, Hawaiian/Pacific Islander, Other, and Multiracial) and save it
 as a new column.
CenData[26] <- (CenData[,5]/rowSums(CenData[,5:11]))^2
CenData[27] <- (CenData[,6]/rowSums(CenData[,5:11]))^2
CenData[28] <- (CenData[,7]/rowSums(CenData[,5:11]))^2
CenData[29] <- (CenData[,8]/rowSums(CenData[,5:11]))^2
CenData[30] <- (CenData[,9]/rowSums(CenData[,5:11]))^2
CenData[31] <- (CenData[,10]/rowSums(CenData[,5:11]))^2
CenData[32] <- (CenData[,11]/rowSums(CenData[,5:11]))^2

# Sum the squares, subtract by 1, and multiply by 100 to give a score between 0-100 for each cen
sus tract, and save as new Diversity Score column.
CenData$Diversity<- (1-(rowSums(CenData[,26:32])))*100

# Create low, medium, and high categories for the diversity scores based on quintiles. First cre
ate a function to assign the codes.
newvar<-0
recode<-function(variable,high,medium,low){
  newvar[variable<=high]<-"High"
  newvar[variable<=medium]<-"Medium"
  newvar[variable<=low]<-"Low"
  return(newvar)
}

attach(CenData)

# Find the quantiles to make the breaks by
summary(Diversity)
```

```
##    Min. 1st Qu.  Median    Mean 3rd Qu.    Max.
##    0.00   17.70   37.14   35.54   52.76   72.93
```

```
# Use the function to create a new column of codes for the Diversity Score Level
CenData$Div_code <- recode(Diversity,72.94,52.76,17.70)

# Save results and export to Excel spreadsheet
write.xlsx(CenData, "ACS_Census_Diversity_coded.xlsx")
```