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## Exploratory Data Analysis #

## CourseProject 2          #

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## Question 5: How have emissions from motor vehicle sources changed from 1999-2008      #
## in Baltimore City?                                             #

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## Reads PM2.5 Emissions Data

NEI <- readRDS("./data/summarySCC_PM25.rds")

## Reads Source Classification Code Table

NCC <- readRDS("./data/Source_Classification_Code.rds")

## Setting up the PNG Devices

png(file="plot5.png",width=480,height=480)

par(mfrow = c(1,1))

## Subset for Maryland, Baltimore City

NEIMary <- NEI[NEI$fips == "24510",]

## subsetting all mobile or on-road as a proxy for "motor vehicle sources"

## based on our discussions forums and loose application wikipedia definition

mVehicles <- subset(NCC, grepl("Mobile|On-Road", EI.Sector, ignore.case = TRUE))

## Subset Maryland for only motor vehicle related codes

mVehMary <- subset(NEIMary,NEIMary$SCC %in% mVehicles$SCC)

pmeMDVeh <- tapply(mVehMary$Emissions, mVehMary$year, sum)

pmeMDVehDf <- data.frame(Year=unique(mVehMary$year),Total=pmeMDVeh[])

plot(pmeMDVehDf$Year, pmeMDVehDf$Total, type="l", lwd=1, col="brown", ylab="Total Emissions",
xlab="Year",main="Baltimore Motor Vehicles")

## Closing the device

dev.off()
```