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#Annotated R code for Epidemiology Assignment 2
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#My personal file is one word called CMVdata.txt
#My column headers are y_CMS, t_CMS, dydt
#Note: you can rename anything before an "<" to your preference, just be consistent through the code
#Note: you can adjust other parameters in the plot, so play around and explore R!
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```
getwd() #Check where R is looking for files
setwd("C:/Users/Basima/Desktop") #Set R to the directory where your data is saved
getwd() #Verify R is now looking in the correct location
```

```
CMS = read.table("CMSdata.txt", #Name and read your data file into R
                header=TRUE)
```

```
CMS #Check that your data has loaded correctly
head(CMS) #Review the column names of your file
```

```
##### Make one plot (y vs t) #####
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```
plot(y_CMS ~ t_CMS, data=CMS, #Plot y vs t
     xlab = "Time (t)", #Legend title for X-axis
     ylab = "CMS (y)", #Legend title for y-axis
     pch = 16, #Shape of the scatterplot points
     main = "CMS (y vs. t)") #Plot title
```

```
lines(CMS$t_CMS, CMS$y_CMS, type="l") #Add lines between the data points
```

```
##### Get SLR and OLS output (y vs t) #####
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```
SLR_CMS <- lm (CMS$y_CMS ~ CMS$t_CMS) #Find the SLR for this plot (y vs t)
summary(SLR_CMS) #Show the SLR output for this plot (y vs t)
anova(SLR_CMS) #Get the ANOVA summary statistics
```

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##### Plot residuals (y vs t) #####
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CMS$SLR_CMS.res = resid(SLR_CMS)           #Create residuals for y vs t
plot(SLR_CMS.res ~ t_CMS, data=CMS,       #Plot the residuals vs t
     ylab="CMS (y)", xlab="Time (t)",
     main="Y vs. T Residuals")
abline(0, 0)                               #Add the line for residuals at y=0

##### Make new plot (natural log of y vs t) #####

CMS$ln_CMS <- log(CMS$y_CMS)               #Add a new column to the dataset, then plot it
#compare: CMS$log10_CMS <-log10(CMS$y_CMS) #NOTE: in R, log=natural log, use log10=log base 10

plot(ln_CMS ~ t_CMS, data=CMS,
     xlab = "Time (t)",
     ylab = "CMS (ln y)",
     pch = 16,
     main = "CMS (ln y vs. t)")

lines(CMS$t_CMS, CMS$ln_CMS, type="l")

```