

Lecture 1.10 – Troubleshooting Problems

Specific Learning Objectives:

3.5.1 – Learn basic skills in debugging and troubleshooting error messages.

Strategies for Troubleshooting Code



- First, take a deep breath and remember you can fix it. And if you can't figure it out, someone can help you.

- Follow the simple steps below:
 1. Did you spell it correctly? *Are you sure?*
 2. Is the capitalization/punctuation correct?
 3. Is the syntax correct?
 4. Is the object in your environment?

Troubleshooting Strategy: Splitting

- What do you do if you don't know which part of the code is the problem?
- Try splitting the line into the smallest elements. Run each independently to try and pinpoint the problem.
- Example: many ways to split the statement.



The diagram illustrates the process of splitting the R code line into its smallest elements for troubleshooting. The code line is: `> mean(Indometh$conc[Indometh$Time==8.00])`. Above the code, several horizontal lines of different colors (red, orange, green, teal, purple, blue) are positioned to show how the code can be split into segments. The segments are: `>`, `mean`, `(`, `Indometh$conc`, `[`, `Indometh$Time==8.00`, `]`, and `)`.

```
> mean(Indometh$conc[Indometh$Time==8.00])  
[1] NaN
```

Troubleshooting Strategy: Splitting

```
> mean(Indometh$conc[Indometh$Time==8.00])
```

```
[1] NaN
```

```
2 mean(Indometh$conc[Indometh$Time==8.00])
```

```
3
```

```
4
```

```
> Indometh$conc
```

```
[1] 1.50 0.94 0.78 0.48 0.37 0.19 0.12 0.11 0.08 0.07 0.05 2.03 1.63 0.71 0.70 0.64  
[17] 0.36 0.32 0.20 0.25 0.12 0.08 2.72 1.49 1.16 0.80 0.80 0.39 0.22 0.12 0.11 0.08  
[33] 0.08 1.85 1.39 1.02 0.89 0.59 0.40 0.16 0.11 0.10 0.07 0.07 2.05 1.04 0.81 0.39  
[49] 0.30 0.23 0.13 0.11 0.08 0.10 0.06 2.31 1.44 1.03 0.84 0.64 0.42 0.24 0.17 0.13  
[65] 0.10 0.09
```

```
1  
2 mean(Indometh$conc[Indometh$Time==8.00])
```

```
3
```

```
4
```

```
1  
2 mean(Indometh$conc[Indometh$Time==8.00])
```

```
3
```

```
4
```

```
> Indometh$Time==8.00
```

```
logical(0)
```

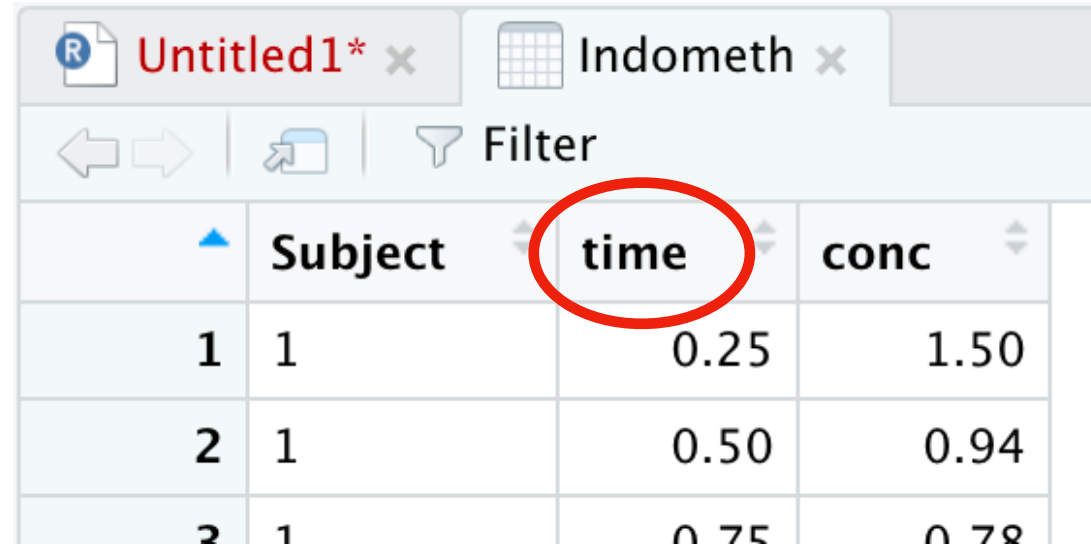
```
> Indometh$Time
```

```
NULL
```

Troubleshooting Strategy: Splitting

```
> mean(Indometh$conc[Indometh$Time==8.00])  
[1] NaN
```

```
> View(Indometh)
```



The screenshot shows the RStudio interface with a data frame named 'Indometh' open in the 'View' window. The window title is 'Indometh x'. The data is displayed in a table with columns 'Subject', 'time', and 'conc'. The 'time' column header is circled in red. The data rows are as follows:


	Subject	time	conc
1	1	0.25	1.50
2	1	0.50	0.94
3	1	0.75	0.78

Fix it:

```
> mean(Indometh$conc[Indometh$time==8.00])  
[1] 0.07166667
```

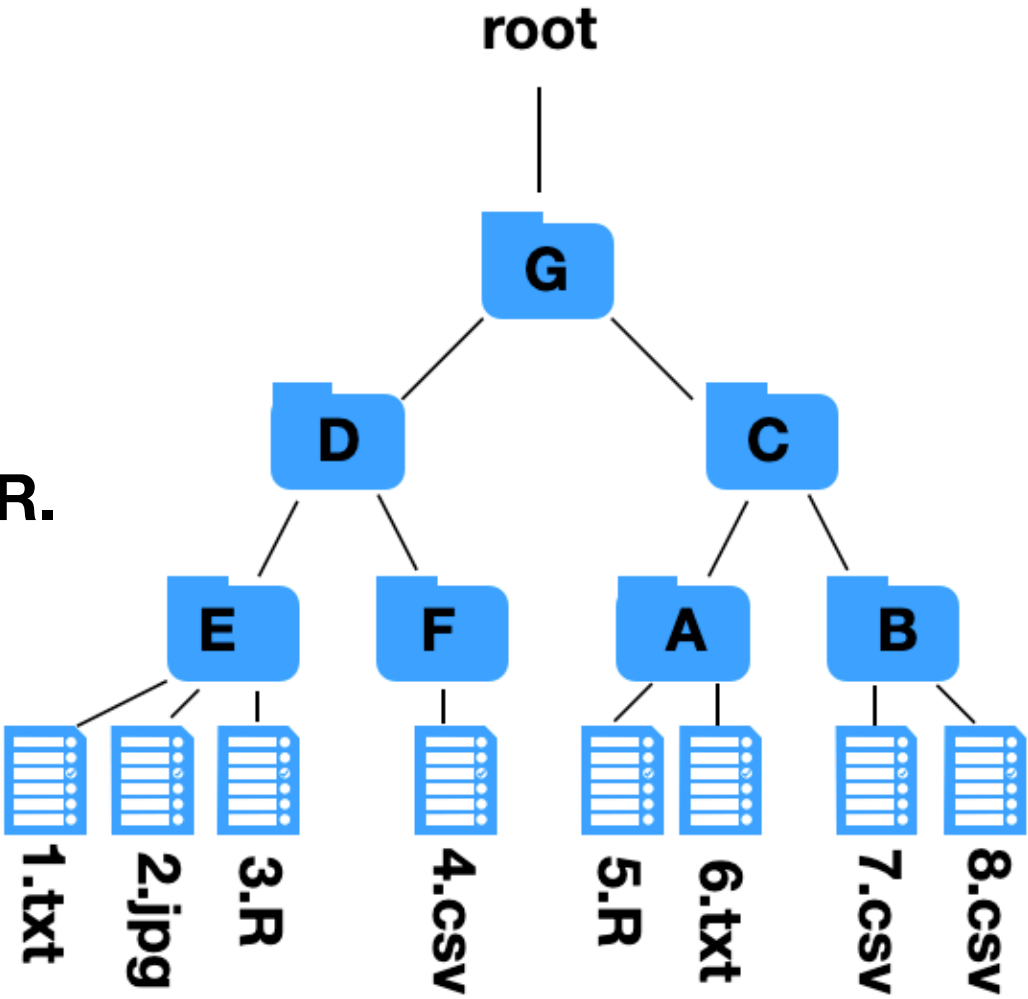
Practice Skill Check Questions

1. ChickWeight data set is a data frame with four columns, named below:

▼ ChickWeight	578 obs. of 4 variables	
\$ weight:	num	42 51 59 64 76 93 106 125 149 171 ...
\$ Time :	num	0 2 4 6 8 10 12 14 16 18 ...
\$ Chick :	Ord.factor w/ 50 levels	"18"<"16"<"15"<...: 15 15...
\$ Diet :	Factor w/ 4 levels	"1","2","3","4": 1 1 1 1 1 1 ...

Write code to find the weights of all chicks fed diet 2 at time 4.

2. Write down the absolute file path to file 3.R.



Action Items

- 1. Complete Assignments 1.14.**
- 2. Prepare for your first Skill Check!**