Michael Allen Sprint #1 Review

End of Sprint Survey, Biases, and Data Formats

devleague

Game Plan

1. Create Version 1.0 "End of Sprint Survey" in Survey Monkey
2. Investigate and Document Potential Bias for Survey Data
3. Analyze Output in SurveyMonkey
4. Export SurveyMonkey Data to Excel
5. Convert Excel Categorical Data to Numerical Data
6. Convert Excel to R
7. Look at Survey Data in CSV, illustrate and Annotate
8. Look at Survey Data in R, illustrate and Annotate
9. Create CSV Mind Mapping Concepts
10. Create R Mind Mapping Concepts

End of Sprint Survey

1. What training course did you attend?

- ○ Java Web Engineer
- ○ Cyber Security Professional
- ○ Big Data Analyst
- ○ Enterprise Software Developer

2. Do you have programming experience?

- ○ Yes
- ○ No
- ○ Very little

3. Who was your training instructor?

- ○ Instructor #1
- ○ Instructor #2
- ○ Instructor #3
- ○ Instructor #4
- ○ Instructor #5

4. The instructor's lecture was delivered clearly and helped my learning.

- ○ Strongly Agree
- ○ Agree
- ○ Disagree
- ○ Strongly Disagree

5. My instructor was responsive to my questions and assisted in my learning.

- ○ Strongly Agree
- ○ Agree
- ○ Disagree
- ○ Strongly Disagree

End of Sprint Survey II

6. The pace (speed) of the training was appropriate for my learning.

- ◯ Strongly Agree
- ◯ Agree
- ◯ Disagree
- ◯ Strongly Disagree

7. The length of the course was appropriate for my learning.

- ◯ Strongly Agree
- ◯ Agree
- ◯ Disagree
- ◯ Strongly Disagree

8. The various support portals (Trello, Jupyter Notebook, GitHub, Slack) were intuitive and easy to use.

- ◯ Strongly Agree
- ◯ Agree
- ◯ Disagree
- ◯ Strongly Disagree

9. The Sprints were laid out well and were useful to my learning.

- ◯ Strongly Agree
- ◯ Agree
- ◯ Disagree
- ◯ Strongly Disagree

10. The classroom was comfortable (examples: not too hot, not too cold, not too noisy, etc.).

- ◯ Strongly Agree
- ◯ Agree
- ◯ Disagree
- ◯ Strongly Disagree

Investigate and Document Potential Bias for Survey Data

Knowledgeable Enough to be Attending
Experience / Age / Gender
In a Rush to Complete Survey (Not Built-in Class Time to Complete)
Had a Bad Morning at Home / Hotel that Day
Bad Traffic Day
Not Focused During the Course
Did Not Do the Required Work Throughout the Course
Relationship Issues at Home / Work
Past / Present Working / Personal Relationship with Instructor
Motivation or Lack Thereof / Forced to Attend
Job Depends on Success of Course Understanding and Completion

Investigate and Document Potential Bias for Survey Data II

Response bias refers to the bias that results from problems in the measurement process.

Leading questions. The wording of the question may be loaded in some way to unduly favor one response over another.

For example, a satisfaction survey may ask the respondent to indicate where she is satisfied, dissatisfied, or very dissatisfied.

By giving the respondent one response option to express satisfaction and two response options to express dissatisfaction, this survey question is biased toward getting a dissatisfied response.

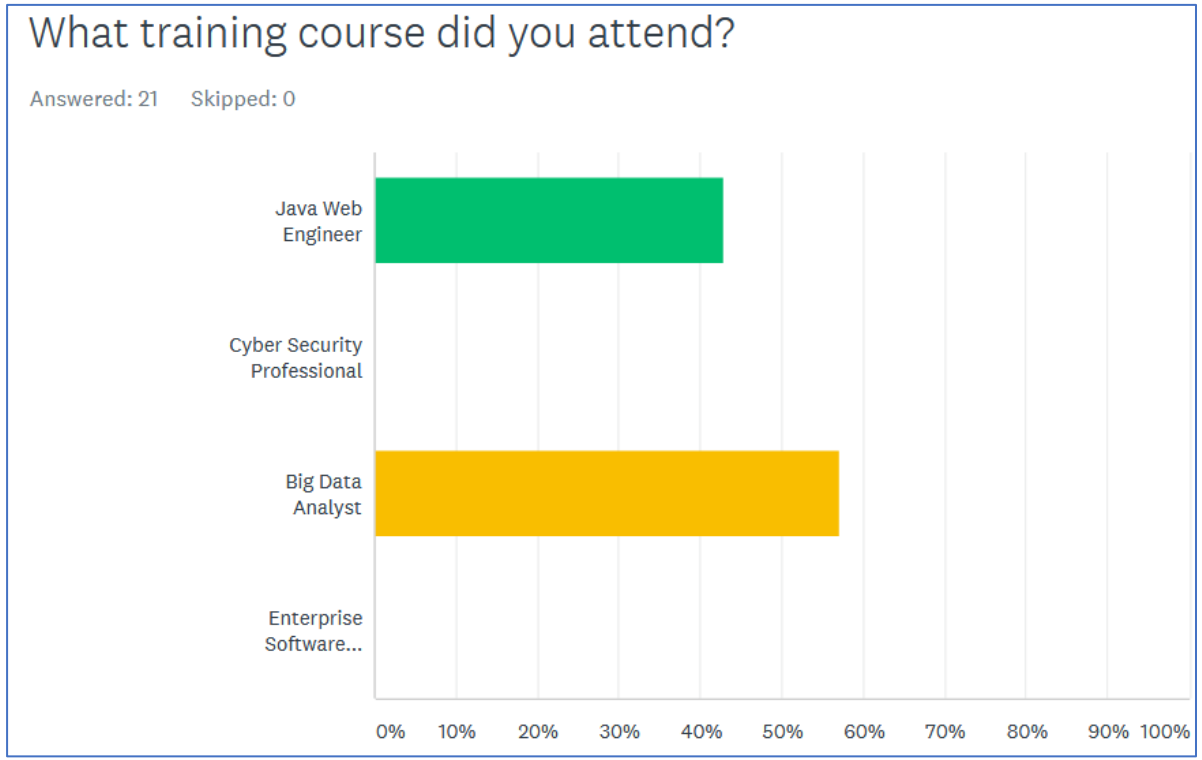
The order you ask questions matters. Mentioning products, brands, or events can affect how people rate their familiarity and attitudes on subsequent questions.

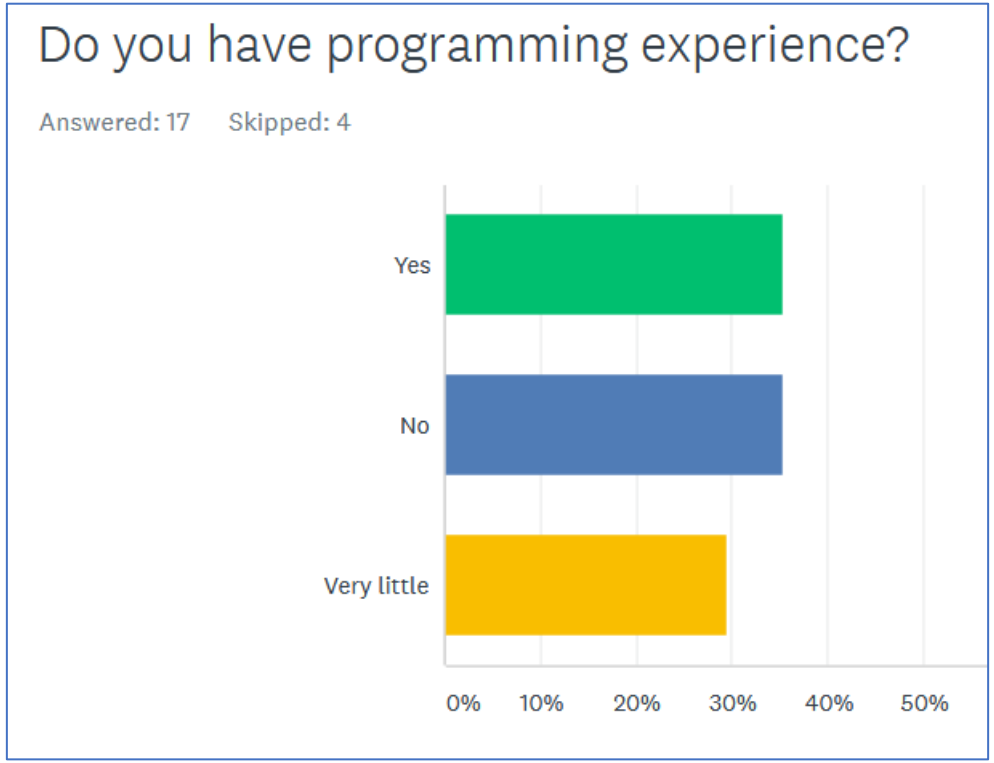
This can be especially harmful in branding and awareness surveys as the mere exposure of a brand name first can influence later questions and findings.

Response options also matter. A respondent might remember a choice that appeared in an earlier question and be more likely to select the response on later questions.

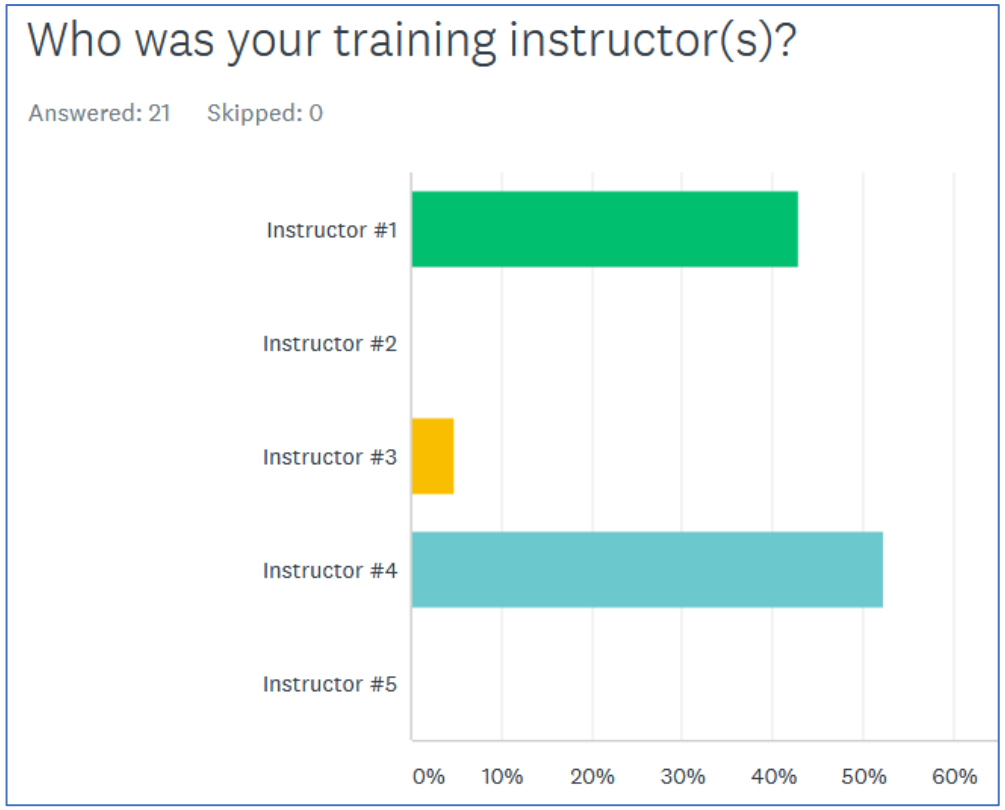
You can often manage many order effects through properly sequenced questions and randomization.

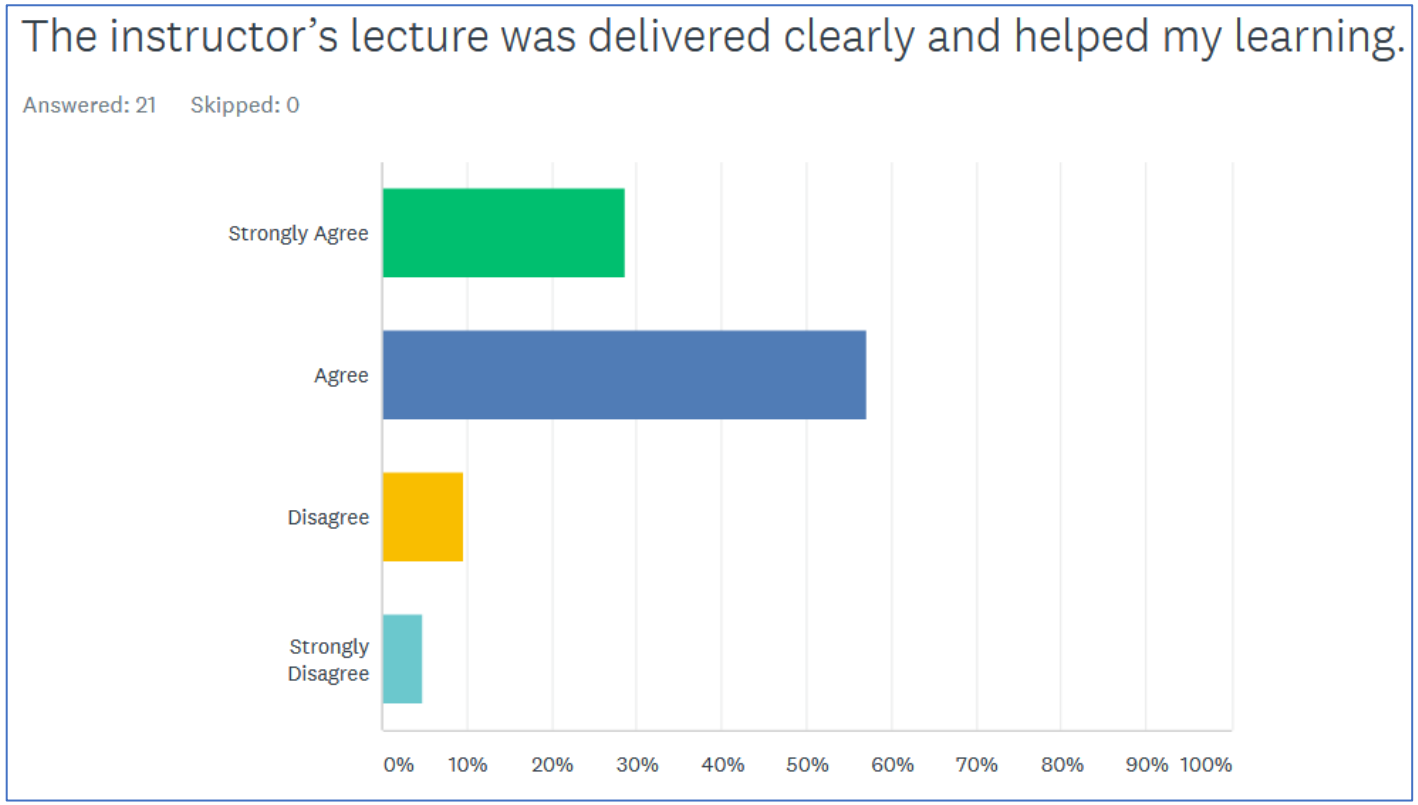
Analyze Output in Survey Monkey



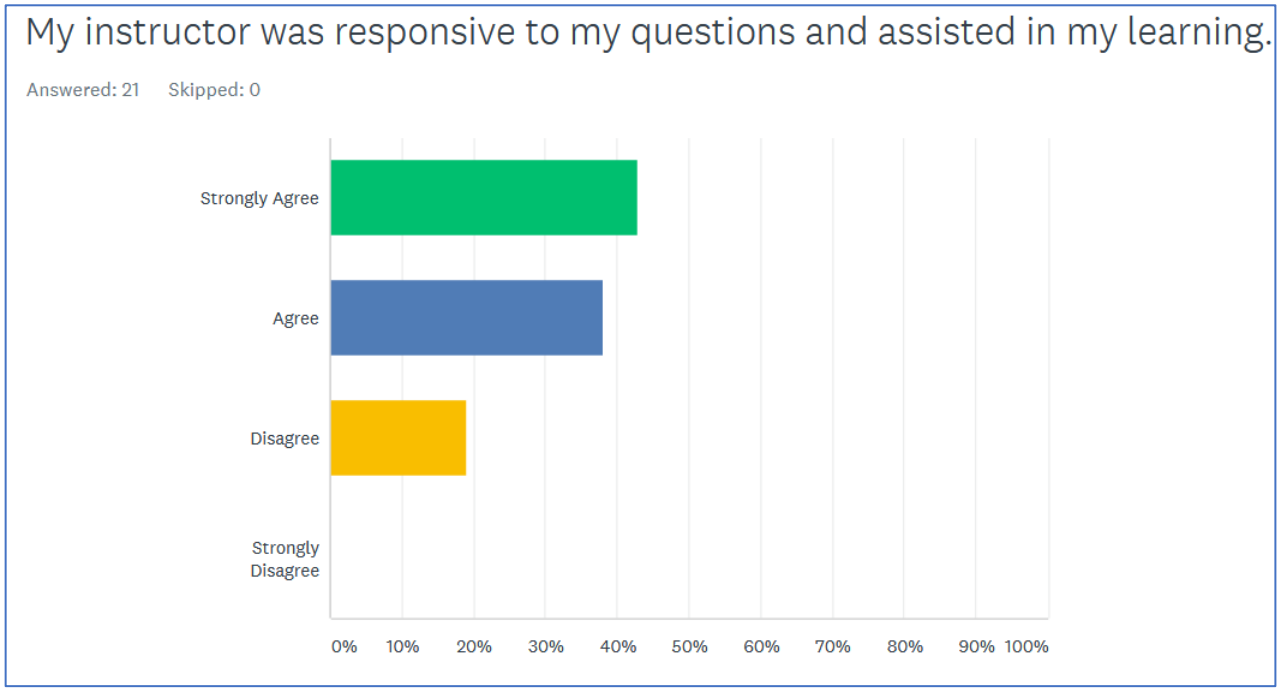


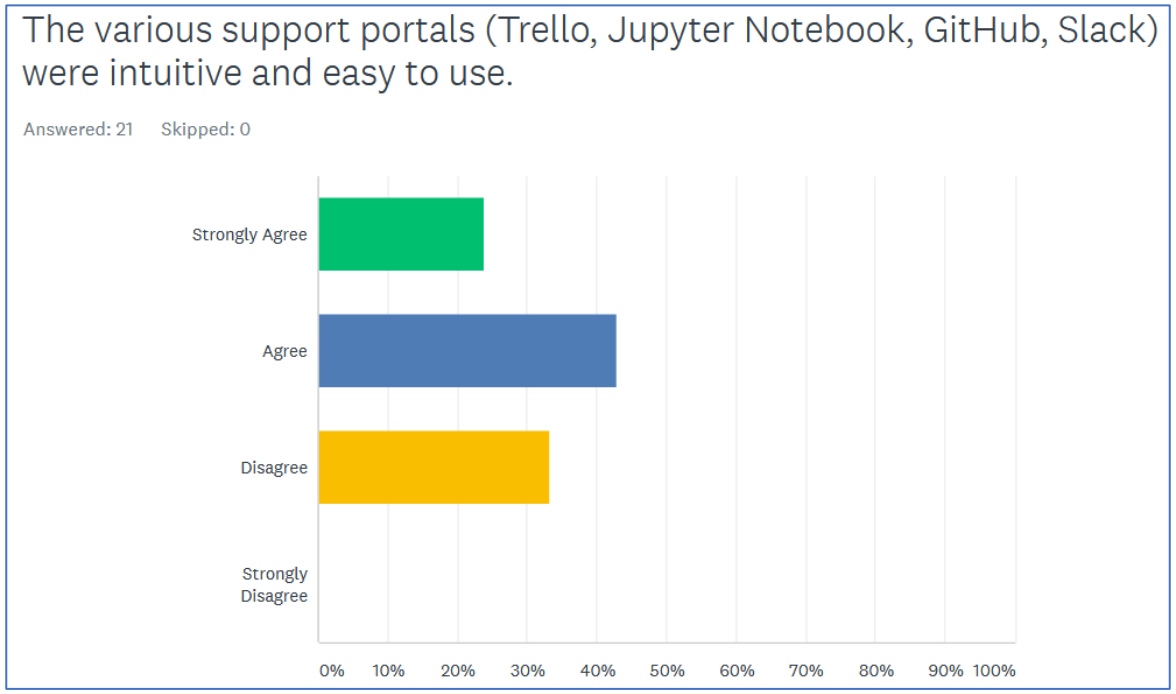
Analyze Output in Survey Monkey II



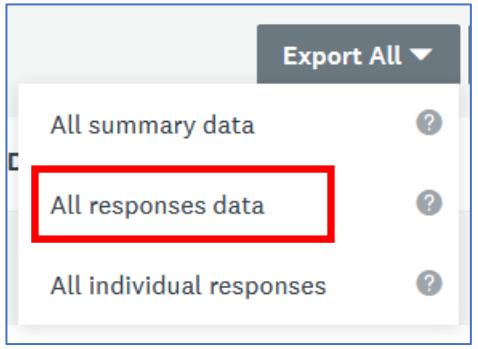


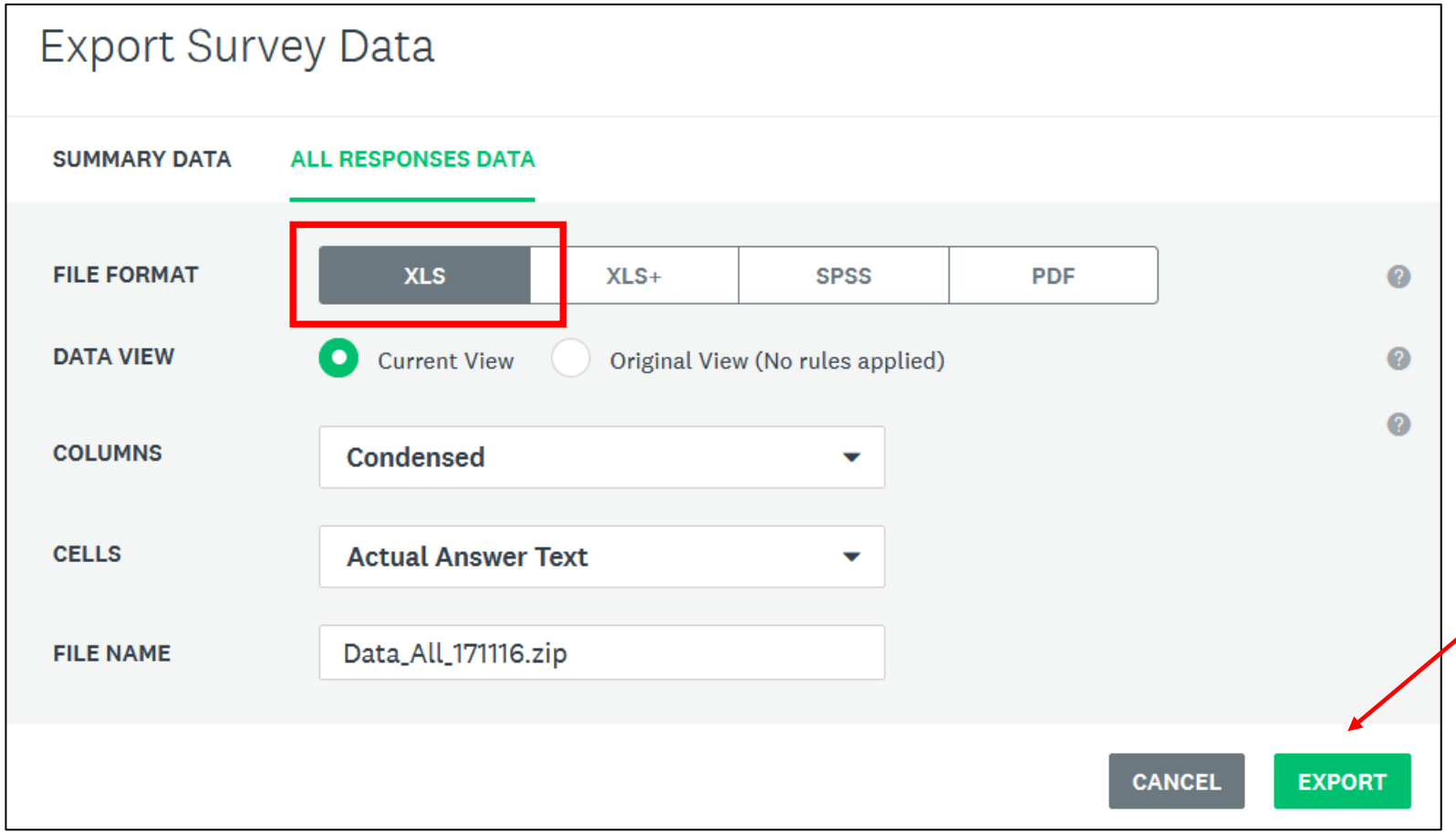
Analyze Output in Survey Monkey III





Exported End of Sprint Survey Data to Excel





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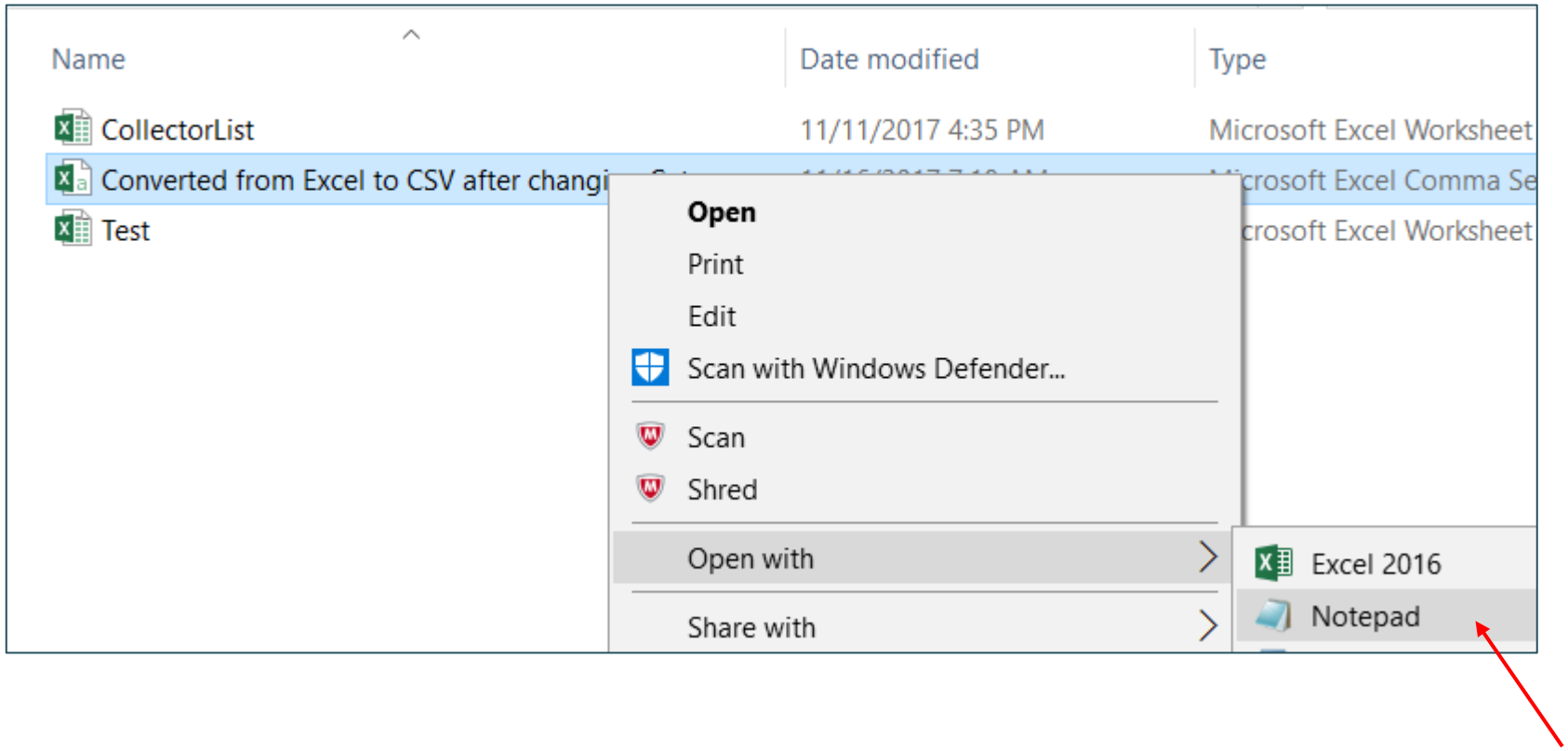
Replaced Excel Categorical Data to Numerical Data

The instructor	My instructor w	The pace (spe	The length of th	The various su	The Sprints we	The classroom
Response	Response	Response	Response	Response	Response	Response
Strongly Agree	Strongly Agree	Agree	Strongly Agree	Strongly Agree	Strongly Agree	Agree
Agree	Agree	Disagree	Agree	Agree	Agree	Disagree
Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree	Strongly Agree	Agree

The instructor	My instructor w	The pace (spe	The length of th	The various su	The Sprints we	The classroom
Response	Response	Response	Response	Response	Response	Response
40	40	30	40	40	40	30
30	30	20	30	30	30	20
40	40	40	40	40	40	30

Strongly Agree = 40
Agree = 30
Disagree = 20
Strongly Disagree = 10

Opened and Saved Converted Excel Data to a CSV file



Annotated CSV file

A CSV file containing 46 surveys completed was first Exported from Survey Monkey, then I cleaned the data and made the following replacements: Strongly Agree - 40, Agree - 30, Disagree - 20, Strongly Disagree 10

```
Course ,Experience,Instructor,Delivered clearly and helped my learning.,Responsive to my questions and assisted in my learning.,Pace ,Length,Support portals,Sprints,Classroom

Response,Response,Response,Response,Response,Response,Response,Response,Response,Response
Cyber Security Professional,Very little,Instructor #3,40,40,30,40,40,40,30
Big Data Analyst,No,Instructor #2,30,30,20,30,30,30,20
Java Web Engineer,Yes,Instructor #1,40,40,40,40,40,40,30
Cyber Security Professional,Very little,Instructor #3,40,40,30,40,40,40,30
Big Data Analyst,No,Instructor #2,30,30,,30,30,30,20
Java Web Engineer,Yes,Instructor #1,40,40,40,40,40,40,30
Cyber Security Professional,Very little,Instructor #2,30,30,20,30,30,30,20
Big Data Analyst,No,Instructor #1,40,40,40,40,40,40,30
Java Web Engineer,Yes,Instructor #3,40,40,30,40,40,40,30
Big Data Analyst,Very little,Instructor #2,30,30,10,30,30,30,20
Java Web Engineer,No,Instructor #2,40,40,40,40,40,40,30
Big Data Analyst,Yes,Instructor #1,30,30,20,30,30,30,20
Java Web Engineer,No,Instructor #2,40,40,40,40,40,40,30
Cyber Security Professional,Yes,Instructor #1,40,40,30,40,40,40,30
Cyber Security Professional,Very little,Instructor #3,30,30,20,30,30,30,20
```

Q1 = Question 1 of Survey / Q2 = Question 2 of Survey....)

Q1 Q2 Q3 Q4/Q5/Q6/Q7/Q8/Q9/Q10

At the top are the Headers also separated by commas

Single records (row) of data and lack of one answer

Each field separated by a comma

Last field in the record must not have a comma

This particular program (Survey Monkey) added an additional header "response" for the participant for each question

```
Cyber Security Professional,No,Instructor #2,40,40,40,40,40,40,30
Big Data Analyst,Yes,Instructor #1,30,30,20,30,30,30,20
Big Data Analyst,Yes,Instructor #2,40,40,40,40,40,40,30
Big Data Analyst,Very little,Instructor #1,40,40,10,40,40,40,30
Big Data Analyst,No,Instructor #3,30,30,20,30,30,30,20
```

A "Row"of answers from the participant

Determined Working Directory and Read CSV file in R

```
getwd()
[1] "C:/Users/micha/Documents"


setwd("C:/Users/micha/Desktop/DevLeague Begins Nov 7 2017/")

> getwd()
[1] "C:/Users/micha/Desktop/DevLeague Begins Nov 7 2017“

read.csv("Simulated Survey Data II/CSV/Mock Survey Data.csv")
```

Annotated R File

```
surveys = read.csv("Simulated Survey Data II/CSV/Mock Survey Data.csv")
> surveys
   i..Course Experience Instructor
1   Response   Response  Response
2  Cyber Security Professional Very little Instructor #3
3              Big Data Analyst         No Instructor #2
4             Java Web Engineer        Yes Instructor #1
5  Cyber Security Professional Very little Instructor #3
6              Big Data Analyst         No Instructor #2
7             Java Web Engineer        Yes Instructor #1
8  Cyber Security Professional Very little Instructor #2
9              Big Data Analyst         No Instructor #1
10            Java Web Engineer        Yes Instructor #3
11             Big Data Analyst Very little Instructor #2
12            Java Web Engineer         No Instructor #2
13             Big Data Analyst        Yes Instructor #1
14            Java Web Engineer         No Instructor #2
15 Cyber Security Professional          Yes Instructor #1
16 Cyber Security Professional Very little Instructor #3
17 Cyber Security Professional          No Instructor #2
18             Big Data Analyst         Yes Instructor #1
19             Big Data Analyst         Yes Instructor #2
20             Big Data Analyst Very little Instructor #1
21             Big Data Analyst         No Instructor #3
22             Big Data Analyst         Yes Instructor #2
23             Big Data Analyst         No Instructor #3
24             Big Data Analyst         Yes Instructor #2
25 Cyber Security Professional Very little Instructor #3
26             Big Data Analyst         No Instructor #2
27            Java Web Engineer        Yes Instructor #1
28 Cyber Security Professional Very little Instructor #3
```

Q1 Q2 Q3

How I initially read the file in R

At the top are the Headers for Question 1 (Q1), Q2, & Q3

And the "Row" of answers

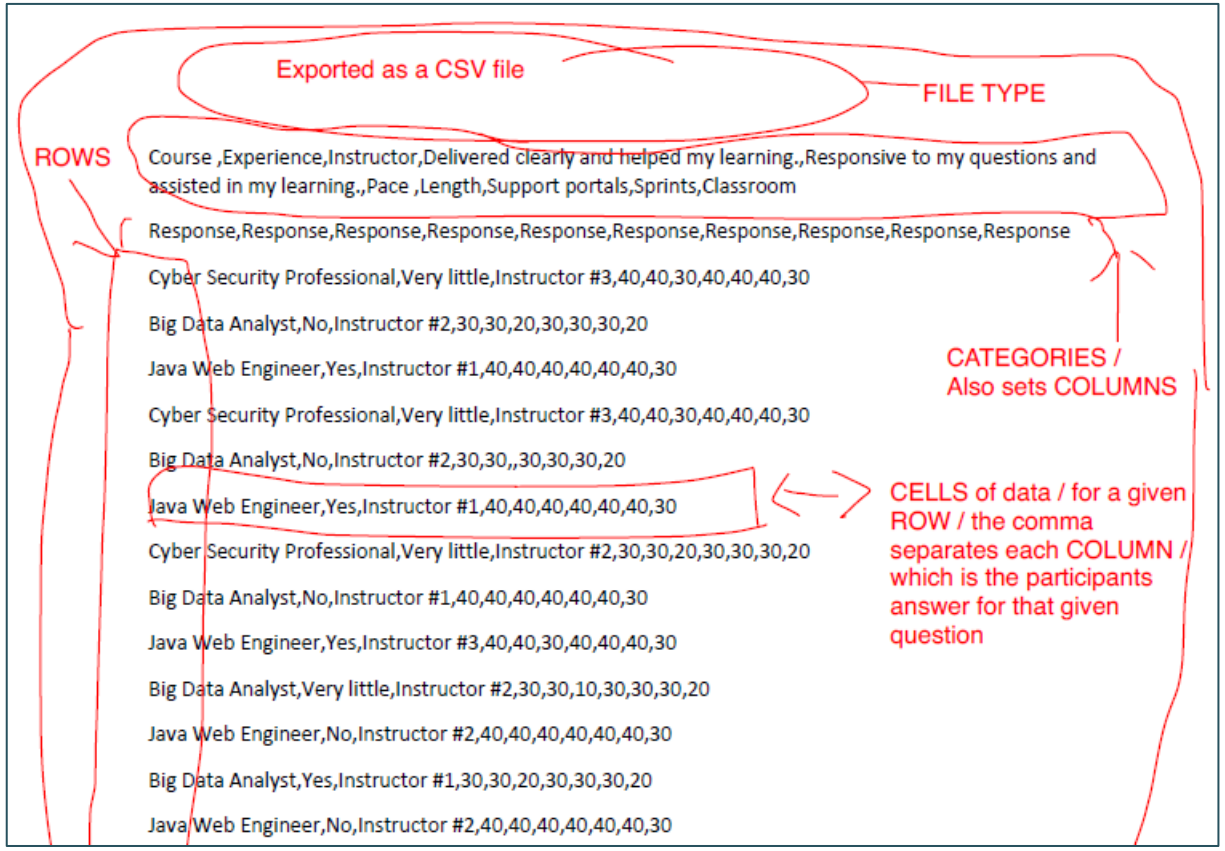
```
46                                                    30
47                                                    40
   Responsive.to.my.questions.and.assisted.in.my.learning.      Pace
1                                                 Response Response
2                                                       40       30
3                                                       30       20
4                                                       40       40
5                                                       40       30
6                                                       30
7                                                       40       40
8                                                       30       20
9                                                       40       40
10                                                      40       30
11                                                      30       10
12                                                      40       40
13                                                      30       20
14                                                      40       40
15                                                      40       30
16                                                      30       20
17                                                      40       40
18                                                      30       20
19                                                      40       40
20                                                      40       10
21                                                      30       20
22                                                      40       40
23                                                      30       20
```

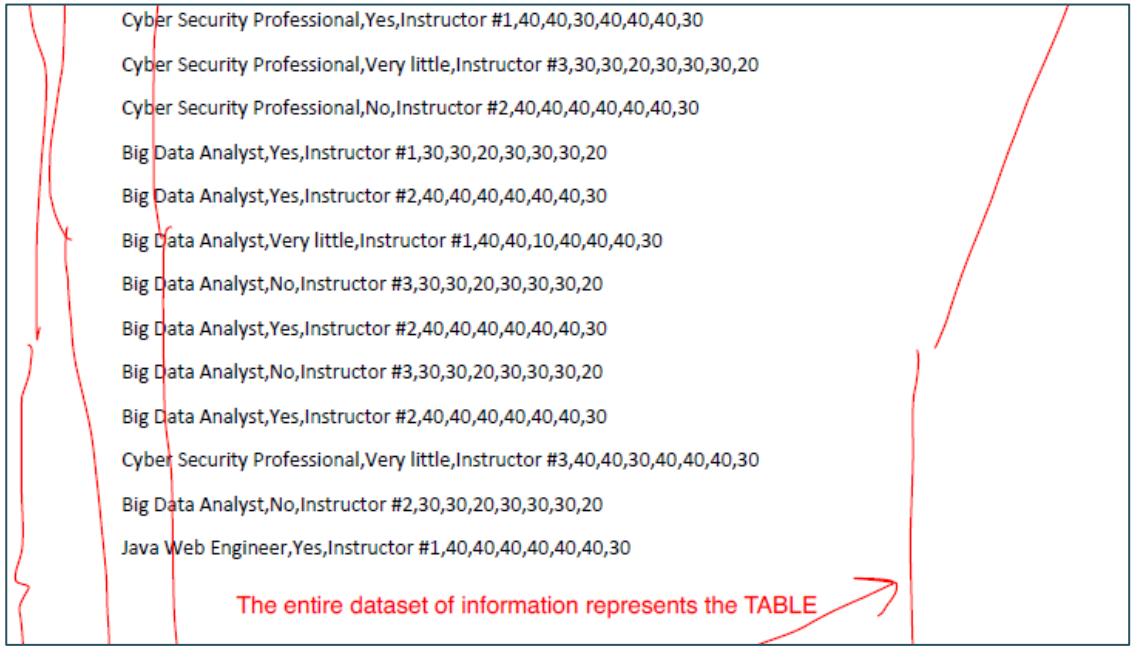
Here are the Headers for Q5 & Q6

Answers for Q5 & Q6

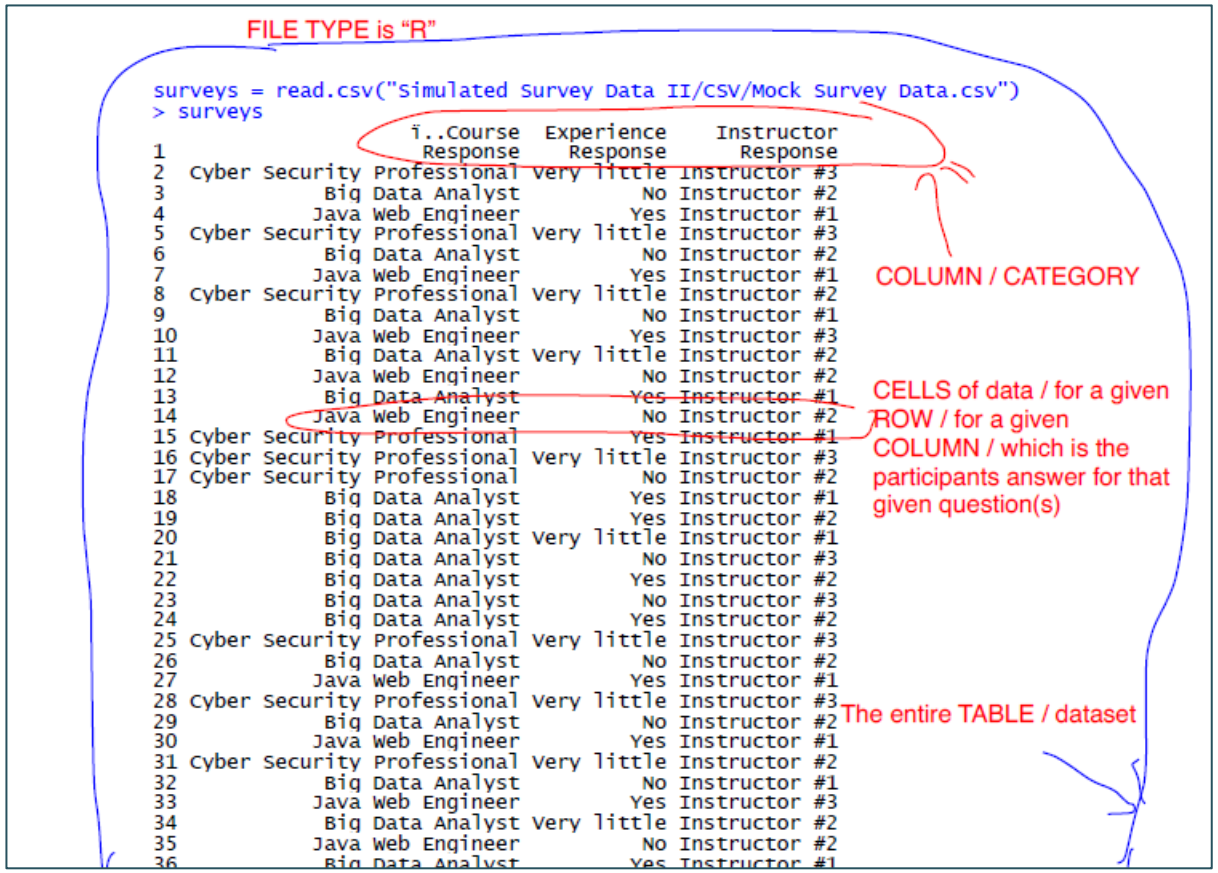
Lack of answer

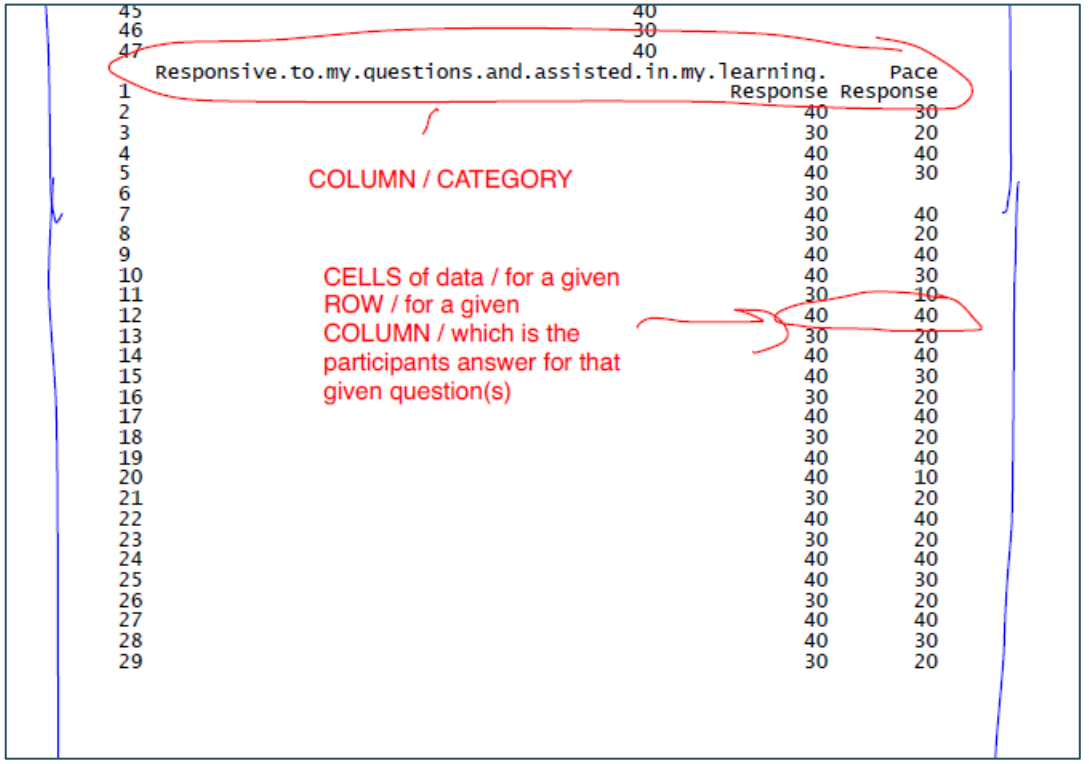
Created Mind Mapping for CSV File





Created Mind Mapping for R File





Thank you