

Session 18: Putting It All Together — Pen-and-Paper Pair Exercise

PSY 410 | Data Science for Psychology

Name: _____ Date: _____

No laptop today? No problem. This handout lets you practice the same skills on paper. Work with a partner who has a laptop and compare your work at the end.

The task: Debug this code

This code has several errors. Find and fix them all.

```
library(tidyverse)

# Load data
Study_data <- tibble(
  id = 1:5,
  Score = c(10, 15, 12, 18, 14),
  Group = c("A", "B", "A", "B", "A")
)

# Analyze
study_data |>
  filter(Group = "A") |>
  summarize(
    mean_score = mean(score)
    sd_score = sd(score)
  )
```

Your pen-and-paper version

Step 1: Read the code carefully. Go line by line and circle every error you can find. There are at least 4 bugs.

Step 2: List the errors. For each bug, explain what's wrong and how to fix it:

#	Line	What's wrong	Fix
1			

#	Line	What's wrong	Fix
2			
3			
4			

Step 3: Categorize the errors. For each bug, what *type* of error is it? Write the letter:

- (A) Name mismatch (variable/object name doesn't match)
- (B) Wrong operator (using the wrong symbol)
- (C) Syntax error (missing punctuation, brackets, etc.)

Bug #	Type
1	
2	
3	
4	

Step 4: Predict the error messages. For each bug, what error would R give you? Match:

- Error: object 'study_data' not found
- Error in filter(): ... did you mean '=='?
- Error: unexpected symbol
- Error: object 'score' not found

Step 5: Write the corrected code. Rewrite the full code block with all fixes applied:

```
library(tidyverse)

# Load data
_____ <- tibble(
  id = 1:5,
  Score = c(10, 15, 12, 18, 14),
  Group = c("A", "B", "A", "B", "A")
)

# Analyze
_____ |>
filter(Group _____ "A") |>
summarize(
  mean_score = mean(_____)
)
```

```
sd_score = sd(_____)
)
```

Step 6: What should the output be? After fixing the code, what values do you expect?

Group A has scores: _____, _____, _____

mean_score = _____

sd_score = _____ (hint: use n-1 in the denominator)

Check your work

Compare your error list and corrected code with your partner's screen. Did you find all 4 bugs?