Course overview

Course structure

1. **Online video lectures.** Available through YouTube for you to watch asynchronously (about 2 hours per week)
2. **Live Sessions.** Synchronous meetings to work together on practical coding exercises (about 2 hours per week)
3. (Optional) **Live Office Hours.** Synchronous meetings to ask questions about course material, homework, etc. (about 2 hours per week, during the second half of scheduled course meetings)

Where to find what you need

Online coursebook:

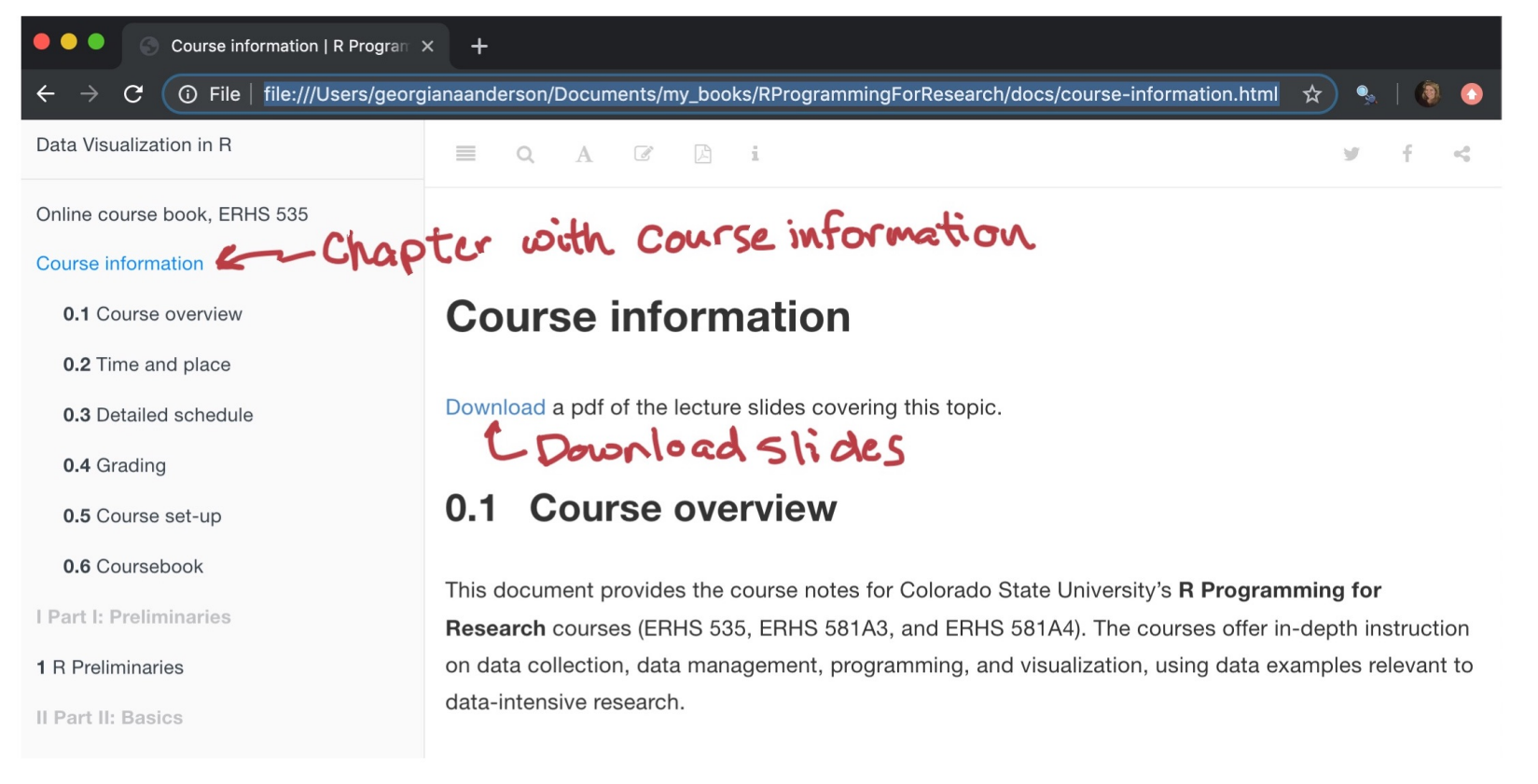
https://geanders.github.io/RProgrammingForResearch/

- Embedded video lectures
- Links to YouTube playlists of lectures
- PDF downloads of lecture slides
- In-class exercise prompts
- Homework assignments
- Quiz vocabulary
- Course information, including detailed schedule

Where to find what you need

- In person
  - Regularly scheduled meetings
  - Announcements at start of session
  - Breakout groups to do coding exercises in small groups
  - In-course quizzes through link (Google Forms)
  - Optional office hours
  - Group work for final project
- Email
  - Reminder of assignment of video lectures to watch before live meetings
  - Repeat of major announcements
  - Homework submission, grades, and feedback
  - Quiz grades and feedback

Online coursebook



Time and place

- Time: Mondays and Wednesdays 10:00 am–11:50 am
- Exceptions:
  - There will be no meeting on Labor Day.
  - There are no course meetings the week of Thanksgiving.
- Place: MRB 463
  - In person for exercises, online through YouTube for lectures, and online coursebook

Laptops

- Please plan to bring a personal laptop to all classes.
- If you do not have access to a laptop you can bring to class, talk to me and we can try to figure something out.
- In this course we will be working with some large datasets. Please talk to me before the fifth week of class if you have limited space on your laptop.

Content

We will cover four large themes in this course:

- Entering and cleaning data
- Exploring data
- Reporting data results
- Reproducible research

Content

The first week covers preliminaries, and after that there will be “cycles” of covering these topics:

- **Preliminaries** Week 1
- **Basic** Weeks 2–5
- **Intermediate** Weeks 6–9
- **Advanced** Weeks 10–15
- **Final** Week 16

A detailed course schedule is available in the online course book.

Grading

Your grade will be determined based on the following components:

Assessment component	Percent of grade
Final group project	30
Weekly in-class quizzes, weeks 2–10	25
Homeworks 1–6	25
Attendance and class participation	10
Weekly in-course group exercises	10

Attendance and class participation

You will meet twice each week in a live session.

On Mondays and Wednesdays, everyone will meet from **10:00 AM–11:00 AM**.

Optional live office hours will be from 11:00 AM–11:50 AM.

Attendance and class participation

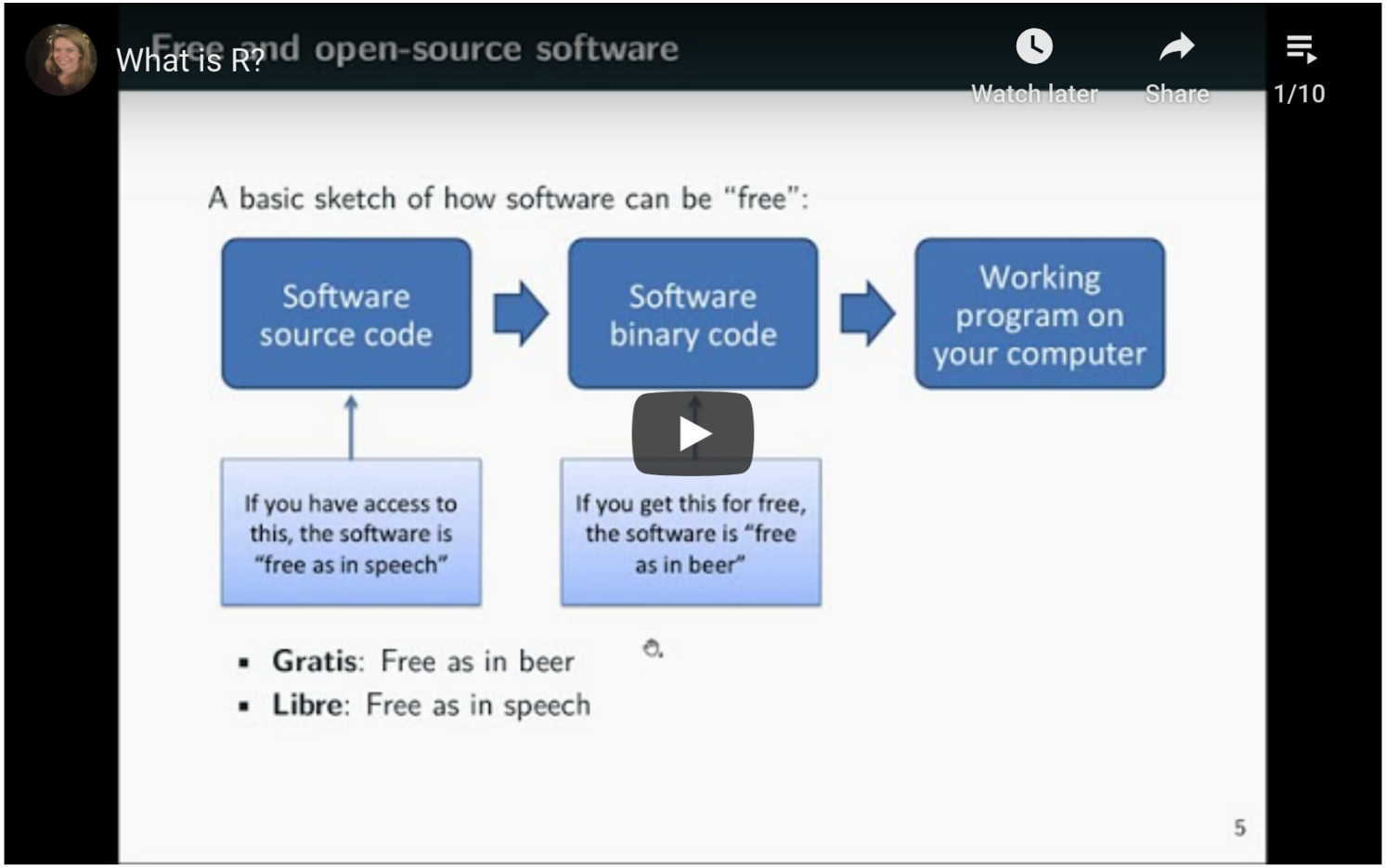
Because so much of the learning for this class is through interactive work in class, it is critical that you come to class.

On days that you have a quiz, the quiz will also be used to assess attendance. On other days, you will fill out an "Exit Ticket" when you leave the class.

Lectures will be shared through YouTube. They are embedded in the online course book within each chapter. At the start of each chapter, you can also find a link to a YouTube playlist with all videos for the chapter.

Attendance and class participation

1.2 R and R Studio



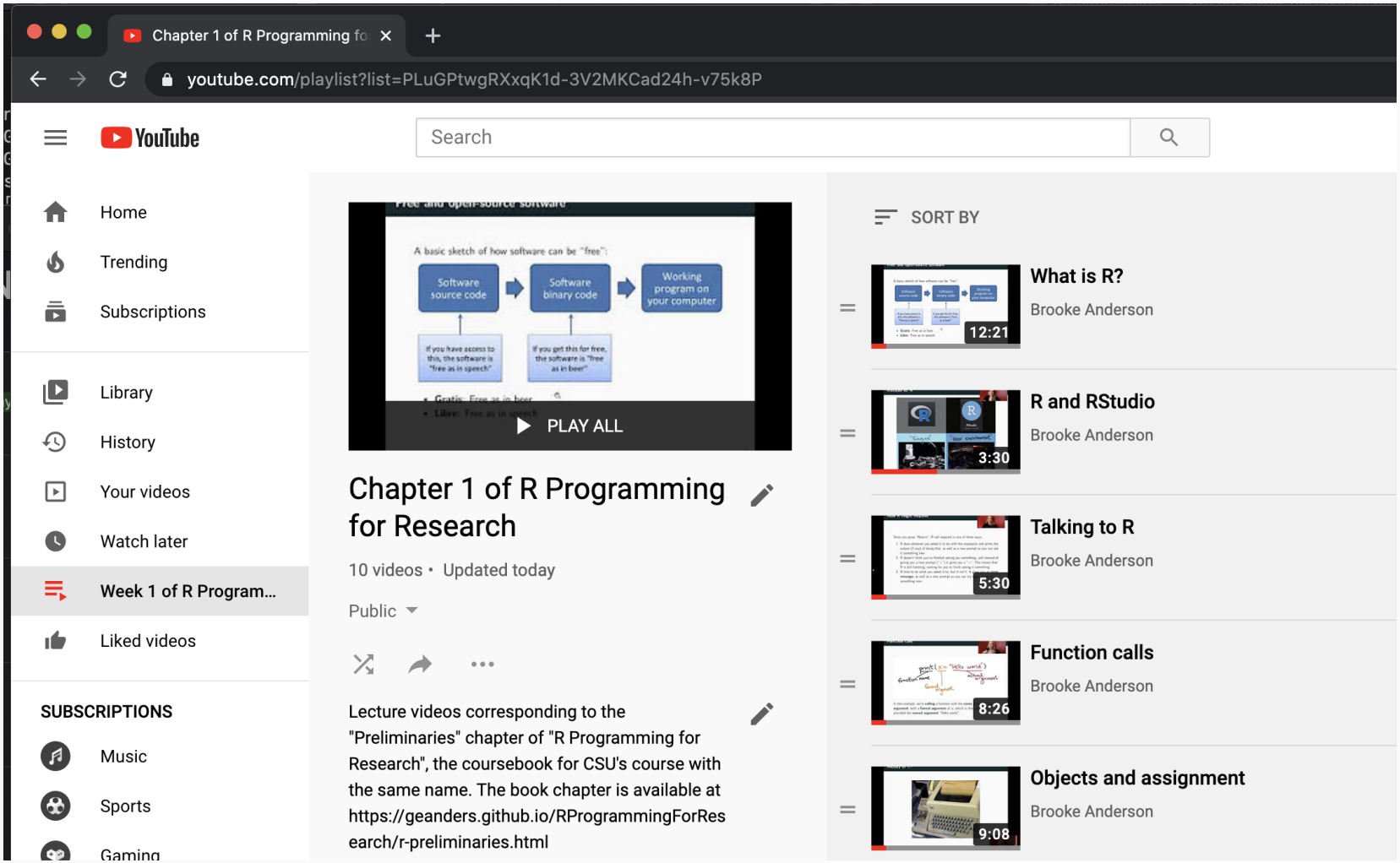
Download a pdf of the lecture slides for this video.

Attendance and class participation

Chapter 1 R Preliminaries

The video lectures for this chapter are embedded at relevant places in the text, with links to download a pdf of the associated slides for each video. You can also access a full playlist for the videos for this chapter.

Attendance and class participation



Attendance and class participation

You will be responsible for watching certain videos *before* you attend each live session. You will receive an email reminder with the list of videos you need to watch before each meeting. There will be about two hours worth of video lectures each week, broken into videos about 10–15 minutes each.

This week, you will be responsible for watching the first nine videos in Chapter 1 ("R Preliminaries"). The full schedule of lecture videos is available in the online-coursebook under the detailed class schedule.

Attendance and class participation

Excused absences:

- Attendance this week will not be counted
- CSU-related: This is typically missing to attend a conference or for a field study for your research. To be excused, this requires a letter/email from your adviser.
- Serious medical issue.
- For an absence to be excused, you must email me a copy of the letter (if required) by 5:00 pm the Friday afternoon following the class you missed.

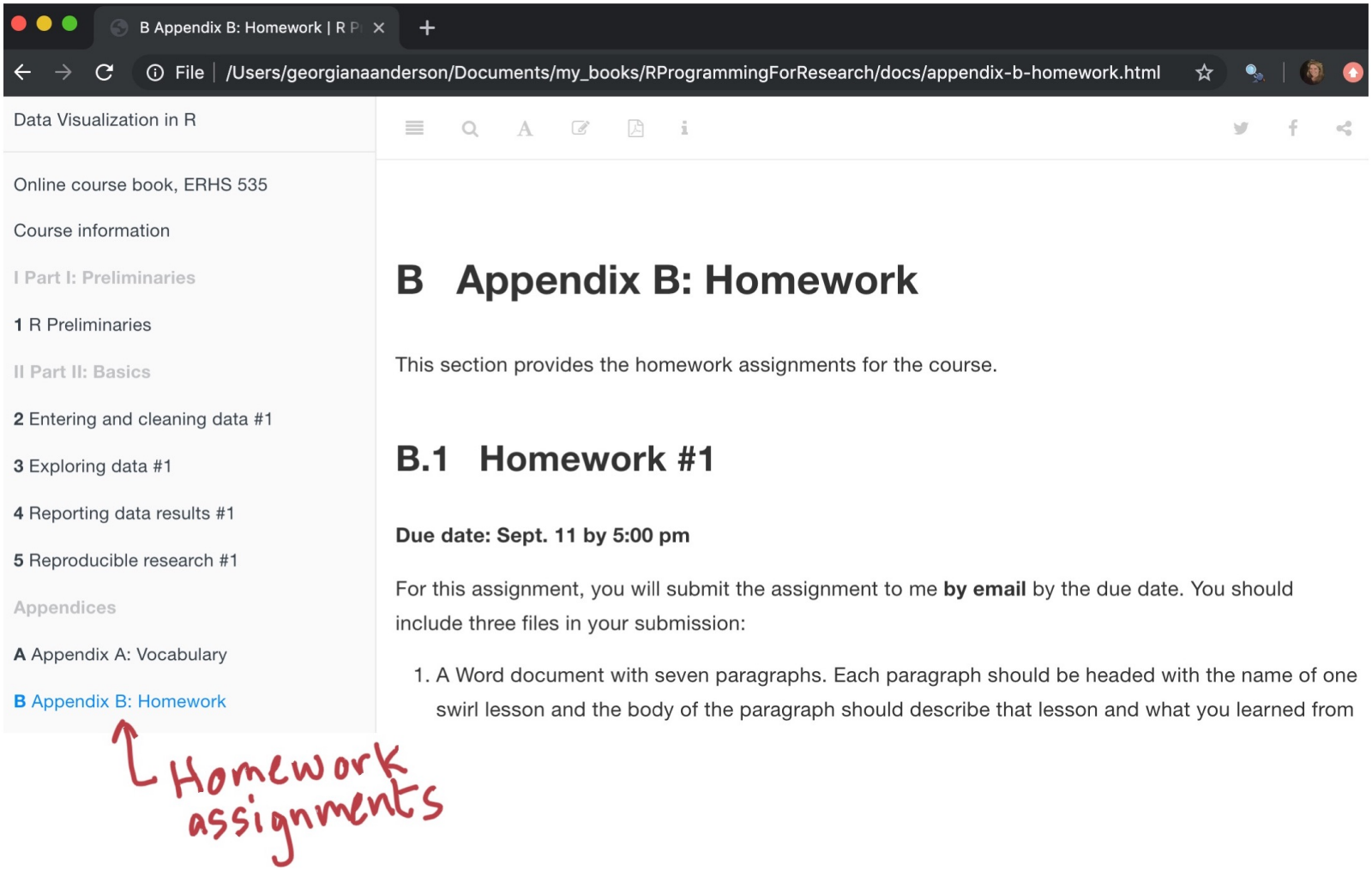
Weekly in-course group exercises

- As long as you are in class and participate in these exercises, you will get full credit for this component.
- **If you miss a class,** to get credit towards this component of your grade, you will need to turn in a few paragraphs describing what was covered in the exercise and what you learned.
- To get credit for this, you must submit it to me by email by 5:00 pm the Friday afternoon of the week of the class you missed.
- All in-class exercises are included in the online course book at the end of the chapter on the associated material.

Homework

- In approximately the first five weeks, there will be two homework assignments (see detailed schedule in the online course book). There will be six over the course of the semester.
- The first should be done individually.
- Homeworks will be graded for correctness, but some partial credit will be given for questions you try but fail to answer correctly. Some of the exercises will not have "correct" answers, but instead will be graded on completeness.

Homework


B Appendix B: Homework | R P
File | /Users/georgianaanderson/Documents/my_books/RProgrammingForResearch/docs/appendix-b-homework.html
Data Visualization in R
Online course book, ERHS 535
Course information
I Part I: Preliminaries
1 R Preliminaries
II Part II: Basics
2 Entering and cleaning data #1
3 Exploring data #1
4 Reporting data results #1
5 Reproducible research #1
Appendices
A Appendix A: Vocabulary
B Appendix B: Homework
B Appendix B: Homework
This section provides the homework assignments for the course.
B.1 Homework #1
Due date: Sept. 11 by 5:00 pm
For this assignment, you will submit the assignment to me by email by the due date. You should include three files in your submission:
1. A Word document with seven paragraphs. Each paragraph should be headed with the name of one swirl lesson and the body of the paragraph should describe that lesson and what you learned from
Homework assignments

Homework

- Homework is due to me by email by midnight on the due date.
- Your grade will be reduced by 10 points for each day it is late, and will receive no credit if it is late by over a week.

In-class quizzes

- You will have quizzes weekly, starting next Wednesday
- Quizzes will be on Wednesdays at the start of class (first 10–15 minutes)
- Quizzes will continue until week 10 of the course
- Quizzes will be conducted through Google Forms. They will be immediately graded, and you will get back your grade and feedback as soon as you submit the quiz.

In-class quizzes

- Quiz questions will be multiple choice, matching, short-answer, or similar styles of questions. The questions are designed so that each can be answered fairly quickly.
- If you miss a class with a quiz, you may make it up during office hours on the week of the missed quiz. Except in exceptional circumstances, this will be the only time when make-up quizzes will be offered.

In-class quizzes

- There will be *at least* 10 questions per quiz. Usually, there will be 12–15.
- If you get, on average, 10 correct questions per quiz, you will get the maximum possible points for the quiz component of your grade.

In-class quizzes

Nine quizzes total:

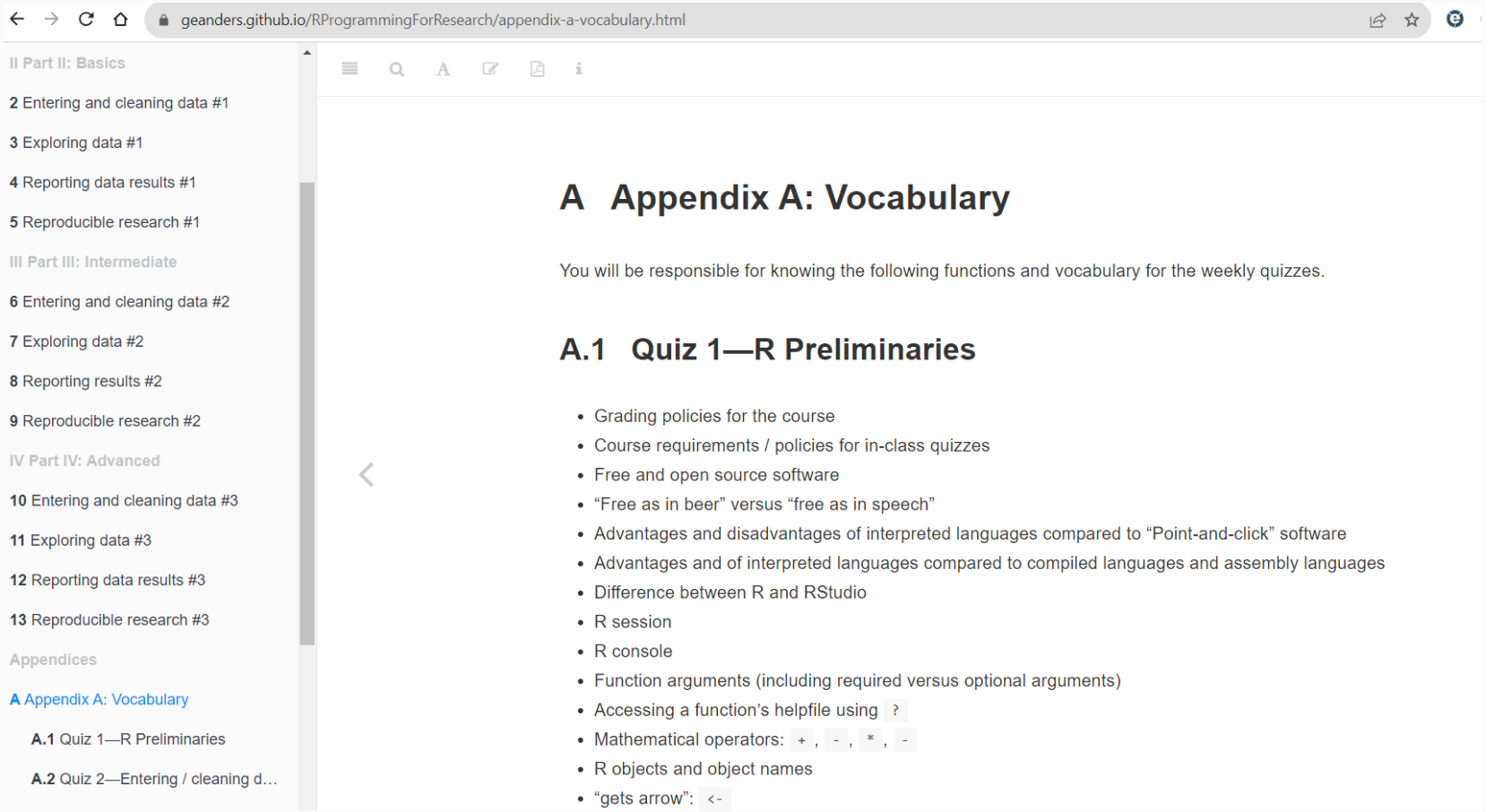
$$\text{Quiz grade} = 25 * \frac{\text{Number of correct quiz answers}}{90}$$

Note: You can not get more than the maximum of for this component quiz component (25 points).

In-class quizzes

- The "Vocabulary" appendix of our online book has the list of material for which you will be responsible for this quiz.
- Most of the functions and concepts will have been covered in class, but some may not.
- You are responsible for going through the list and, if there are things you don't know or remember from class, learning them. To do this, you can use help functions in R, Google, StackOverflow, books on R, ask a friend, and any other resource you can find.

In-class quizzes



In-class quizzes

An example of the vocabulary list:

- `mean()`
- `read_csv`, argument `skip =`
- R object
- open source software
- Hadley Wickham

In-class quizzes

- Using R frequently in your research or other coursework will also help you prepare.
- Working on your homework assignments will also help you prepare.

What you have due soon

- Wednesday, Aug. 28, during class: First in-class quiz. The "Vocabulary" appendix of our online book has the list of material for which you will be responsible for this quiz (Quiz 1 list).
- Monday, Sept. 9: First homework is due by midnight by email.