Code Evaluation questionnaire

this document aims to provide a guideline how to evaluate (R) code in my course

Please note: not all item might be applicable - please cross-out any non-relevant parts.

1. **Informative naming of the file(s)/package/commands?**
   ☐ absolutely   ☐ not really because: _____

Meta-Information

2. **Meta-information does exist?**   ☐ Yes   ☐ No

3. **Authors name**: _____

4. **Contact details are provided (email, URL, git)?**   ☐ Yes   ☐ No

5. **Date of development is listed?**   ☐ Yes   ☐ No

6. **Main purpose of the analysis is explained?**   ☐ yes   ☐ not really because: _____

7. **Needed input is defined?** (format incl. which information are requirede.g. shp with column of type x and content of y)   ☐ yes   ☐ not really because: _____

8. **Output is defined?** (incl. explanations, format etc.)   ☐ yes   ☐ not really because: _____

9. **R version used and R packages needed are listed?**   ☐ yes   ☐ not really because: _____

10. **Operating system used is listed or on which one it has been tested?**   ☐ yes   ☐ no

11. **Required other scripts/commands are listed?** (e.g. script with functions called via source())
    ☐ yes   ☐ not really because: _____

12. **Required other software is explained?**   ☐ yes   ☐ not really because: _____

13. **Informative header is well formatted?**   ☐ yes   ☐ not really because: _____

14. **All necessary details are provided?**
    ☐ Yes, I understand its aim and needed input
    ☐ No, I need to check the code carefully
    ☐ just some parts are provided.

15. **What do you think until now what the output/results will be? Describe it briefly before checking the actual code:**

    _____
    _____
    _____

_____

Actual Code for the Analysis

16. **Data import is generic?** (no full paths, direct import possible)   yes ☐—☐—☐—☐—☐ no

17. **Well commented?**   horrible ☐—☐—☐—☐—☐ fantastic
    remarks: _____

18. **Ratio of Comments vs. Code is adequate?**   no comments ☐—☐—☐—☐—☐ too many comments

19. **Easy to read?** (appropriate indentation and spacing)   horrible ☐—☐—☐—☐—☐ fantastic

20. **The code is written for generic data analysis?** (not just one specific data set can be used)
    ☐ absolutely   ☐ not really because: _____

21. **Does the code require a rigid data structure?** (e.g. specific column names in data frame)
    ☐ absolutely   ☐ no, quite flexible

22. **Is the code flexible?** (i.e allows inputs of different data types)
    ☐ absolutely   ☐ not really because: _____

23. **Data can be retrieved without contacting the author?**
    ☐ absolutely   ☐ not really because: _____

24. **Code follows a logical structure?**   ☐ absolutely   ☐ not really because: _____

25. **Analysis only includes relevant codes?** (no code or output which is not used afterwards)
    ☐ absolutely   ☐ not really because: _____

26. **Are the derived variables self-explanatory?** (e.g. through clear variable names and/or comments)
    ☐ absolutely   ☐ not really because: _____

27. **A standard documentation structure/naming convention is applied?**
    ☐ absolutely   ☐ not really because: _____

28. **The analysis can be run easily on other data sets?** (generic code)
    ☐ absolutely   ☐ not really because: _____

29. **Appropriate use of commands - no unnecessary complex code snippets?**
    ☐ absolutely   ☐ not really because: _____

30. **If a function or command is provided: are example code/data provided/explained?**
    ☐ absolutely   ☐ not really because: _____

31. **Does the code minimize the storage of data?** (e.g. removal of unused variables)
    ☐ yes   ☐ no

32. **Does the code minimize the use of RAM?** (e.g. appropriate subsetting, no re-reading data)
    ☐ yes   ☐ no

33. **Data handling and transformation is coherent and well commented?**   yes ☐—☐—☐—☐—☐ no

34. **Novel code not covered in the course is used?**   a lot ☐—☐—☐—☐—☐ just known commands

35. **The script is actually a package?**   ☐ yes   ☐ no

36. **Proper documentation (manual pages) is provided for this package?**   ☐ yes   ☐ no

37. **Analysis is fast (based on performance measures)** yes ☐—☐—☐—☐—☐ no

    Which parts could be improved?

    _____
    _____
    _____

38. **The code can be executed without any fixes?**   ☐ absolutely   ☐ not really because: _____

    _____
    _____
    _____

Code Impression

39. **The analysis triggered interest and you learned new things?**
    yes, a lot ☐—☐—☐—☐—☐ no, not a bit

40. **Please describe what was special/interesting:**

    _____
    _____
    _____

41. **What is missing from the code?**

    _____
    _____
    _____

42. **What do you especially <u>dislike</u> about the code:**

_____

_____

_____

_____

43. **Please describe your impression of the code:**

_____

_____

_____

_____

Graphs and Maps

44. **Graphs or Maps are providing key messages?** □ absolutely □ not really because: _____

45. **Plots/Maps are are self-explanatory?** □ absolutely □ not really because: _____

46. **Plots/maps are informative?** yes □—□—□—□—□ no

47. **Graphs include all necessary items?** (legend, axis title etc.)
□ absolutely □ not really because: _____

48. **Plots/maps are not overloaded?** yes, clean □—□—□—□—□ no, totally cluttered

49. **Plots/maps layout is consistent through-out the analysis?**
□ absolutely □ not really because: _____

50. **Plots/maps have appropriate colour scheme?** □ absolutely □ not really because: _____

51. **Plots/maps have appropriate font size/type/orientation?** □ absolutely □ not really because: _____

52. **Maps have scale bars, legend, coordinates?** □ absolutely □ not really because: _____

53. **Maps include landmarks, cities, roads for orientation?**
□ absolutely □ not really because: _____

54. **Please write what you (dis-)liked in the graphs/maps:**

_____

_____

_____

_____

_____

_____

Overall Impression

Please evaluate the following parts

55. **Readability** horrible □—□—□—□—□ fantastic

56. **Information** horrible □—□—□—□—□ fantastic

57. **Structure** horrible □—□—□—□—□ fantastic

58. **Innovation** horrible □—□—□—□—□ fantastic

59. **Do you think it qualifies for being scientifically reproducible?**

    ☐ yes

    ☐ no

    ☐ needs some more work: _____

60. **Is the code really worth the effort for you to check it out?**
    ☐ Yes, totally.   ☐ Probably not.   ☐ Don't know.

61. **Would you be interested to use this code for your analysis?**

    ☐ yes, would love to

    ☐ no, not really anything I couldn't do myself

    ☐ yes, definitely parts of it.

    ☐ No clue what is does. I just can't figure it out.

Impression of the analysis

62. **When you check your anticipated results/output (Q 14) at the beginning - are your expectations met? and if no, why not:**

    _____

    _____

    _____

63. **What is missing from the analysis?**

    _____

    _____

    _____

64. **What do you especially like about this analysis:**

    _____

    _____

    _____

    _____

    _____

    _____

    _____

65. **What do you especially <u>dislike</u> about this analysis:**

    _____

    _____

    _____

    _____

    _____

    _____

    _____

66. **How do you think the analysis can be improved or which crucial parts need to be fixed/added:**

    _____

    _____

    _____