Code Evaluation questionnaire
this document aims to provide a guideline how to evaluate (R) code

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

1. **Informative naming of the file(s)/package?**
   □ 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 required e.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. **If other software is required, it is explained?** (download url, installation etc.)
    □ yes   □ no, because pure R code is used   □ no, but it is desparately needed: _____

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. **The script is actually a package?**   □ yes   □ no

17. **Proper documentation (manual pages) is provided for this package?**   □ yes   □ no   □ partly

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

19. **Well commented?**   could be improved □—□—□—□—□ fantastic
    remarks: _____

20. **Ratio of Comments vs. Code is adequate?**   no comments □—□—□—□—□ too many comments

21. **Easy to read?** (appropriate indentation and spacing)   could be improved □—□—□—□—□ fantastic

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

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

24. Is the code flexible? (i.e allows inputs of different data types, e.g geoPackage instead of shp)
☐ absolutely   ☐ not really because: _____

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

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

27. Code follows a logical structure?   ☐ absolutely   ☐ partly   ☐ not really because: _____

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

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

30. A consistent documentation structure/naming convention is applied?
☐ absolutely   ☐ partly   ☐ not really because: _____

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

32. If a function or command is provided: are example code/data provided/explained?
☐ yes for all   ☐ partly   ☐ not really because: _____

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

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

35. Data handling and transformation is coherent and well commented?
yes, fully ☐—☐—☐—☐—☐ no, not at all

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

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. Plots or maps are providing key messages?   □ absolutely   □ not really because: _____

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

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

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

48. Plots/maps are informative?   yes □—□—□—□—□ no

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

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

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

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

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

54. Maps have scale bars, legend, coordinates?
□ yes, all   □ partly   □ not really because: _____

55. Maps include landmarks, cities, roads for orientation?
□ yes   □ partly   □ not really because: _____

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

_____

_____

_____

_____

_____

_____

Overall Impression of the Coding

Please evaluate the following parts:

57. Readability   could be improved □—□—□—□—□ fantastic

58. Information   could be improved □—□—□—□—□ fantastic

59. Structure   could be improved □—□—□—□—□ fantastic

60. Innovation   could be improved □—□—□—□—□ fantastic

61. Do you think it qualifies for being reproducible?

     □ yes

     □ no

     □ needs some more work: _____

62. Is the code really worth the effort for you to check it out?
     □ yes, totally.   □ rather not.   □ don't know, not fully understood yet.

63. 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.

Overall Rating of the Analysis

Please evaluate the following parts:

64. Goal of the analysis is obvious?   could be improved □—□—□—□—□ fantastic

65. Research questions and hypothesis properly defined?   could be improved □—□—□—□—□ fantastic

66. Triggered interest?   could be improved □—□—□—□—□ fantastic

67. Innovation of the Analysis   could be improved □—□—□—□—□ fantastic

68. Do you think it qualifies for being a scientific analysis?

     □ yes

     □ no

     □ needs some more work: _____

69. When you check your anticipated results/output (Q 15) at the beginning - are your expectations met? and if no, why not:

_____

_____

_____

70. What is missing from the analysis?

_____

_____

_____

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

_____
_____
_____
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_____

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

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

_____
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