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. **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. **Data import is generic?** (no full paths, direct import possible) yes ☐—☐—☐—☐—☐ no
17. **Well commented?** could be improved ☐—☐—☐—☐—☐ fantastic
    remarks: _____
18. **Ratio of Comments vs. Code is adequate?** no comments ☐—☐—☐—☐—☐ too many comments
19. **Easy to read?** (appropriate indentation and spacing) could be improved ☐—☐—☐—☐—☐ fantastic
20. **The code is written for generic data analysis?** (not just one specific data set can be used)
    ☐ absolutely ☐ not really because: _____
21. **The analysis can be run easily on other data sets?** (generic code)
    ☐ absolutely ☐ not really because: _____

22. **Is the code flexible?** (i.e allows inputs of different data types, e.g geoPackage instead of shp)
    ☐ absolutely ☐ not really because: _____
23. **Does the code require a rigid data structure?** (e.g. specific column names in data frame)
    ☐ absolutely ☐ no, quite flexible
24. **Data can be retrieved without contacting the author?**
    ☐ absolutely ☐ not really because: _____
25. **Code follows a logical structure?** ☐ absolutely ☐ partly ☐ not really because: _____
26. **Analysis only includes relevant codes?** (no code or output which is not used afterwards)
    ☐ absolutely ☐ partly ☐ not really because: _____
27. **Are the derived variables self-explanatory?** (e.g. through clear variable names and/or comments)
    ☐ absolutely ☐ partly ☐ not really because: _____
28. **A consistent documentation structure/naming convention is applied?**
    ☐ absolutely ☐ partly ☐ not really because: _____
29. **Appropriate use of commands - no unnecessary complex code snippets?**
    ☐ absolutely ☐ partly ☐ not really because: _____
30. **If a function or command is provided: are example code/data provided/explained?**
    ☐ yes for all ☐ partly ☐ not really because: _____
31. **Does the code minimize the storage of data?** (e.g. removal of unused variables)
    ☐ yes ☐ no ☐ partly
32. **Does the code minimize the use of RAM?** (e.g. appropriate subsetting, no re-reading data)
    ☐ yes ☐ no ☐ partly
33. **Data handling and transformation is coherent and well commented?**
    yes ☐—☐—☐—☐—☐ no ☐ partly
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 ☐ partly
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 dislike about the code:

43. Please describe your impression of the code:

Graphs and Maps

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

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

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

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

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

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

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

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

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

Overall Impression

Please evaluate the following parts

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

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

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

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

59. Do you think it qualifies for being 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:

_____

_____

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_____

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_____

65. What do you especially dislike about this analysis:

_____

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_____

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