**Code Review Template**

For each part of code review, the steps are listed. For any errors, use the notes column to note the line and/or code chunk number and any issues.

I recommend reviewing each script file individually.

Remember to take breaks and not work in chunks of longer than one hour at a time.

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# Labeling and naming

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| --- | --- | --- |
| **Content of Review** | **y/n** | **Notes** |
| Compare labels/values in codebook to labels/values in code output. |  |  |
| For categorical variables, compare numbers in each category to numbers in codebook. Often codebooks will include the number of observations in each category. It can be helpful to compare these numbers/groups to the code output. |  |  |
| Compare missing data values from codebook to those in script/data files. |  |  |
| Ensure types of missingness (e.g., skip logic, not applicable, no answer) are faithfully transcribed. |  |  |
| Compare range constraints in output to range constraints in codebook. |  |  |
| Compare number of observations in codebook and output. |  |  |
| Are variable names clear? (e.g. is direction of variable clear?) |  |  |
| Do variable names achieve reasonable balance between brevity and clarity? Any suggestions for improvement? |  |  |
| Are variable naming conventions consistent? |  |  |
| Do all variables have labels? Do the labels make sense to an outsider? |  |  |

# Robustness

|  |  |  |
| --- | --- | --- |
| **Content of Review** | **y/n** | **Notes** |
| Does script file load all necessary data files and packages? |  |  |
| Are machine-specific directory file paths in file? If so, remove. |  |  |
| Does the file specify seed values? If not, add random-generated seed. |  |  |
| Does the file use version control? If not, add version control. |  |  |
| Are “magic” or “hard-coded numbers” present? If so, identify and try to replace with named constants. |  |  |
| Is there a script file in which all user-written packages and versions are listed and easily available for download? If not, create one. |  |  |
| Can the code work both on a PC and Mac (at a minimum)? Also consider using Linux. |  |  |
| Does the code use outdated or unsupported packages? |  |  |
| Does the code use user-written packages when a software-sanctioned version exists? If so, change to the software-sanctioned version, as it is more likely to be supported in the long-term. |  |  |

# Legibility and Clarity

|  |  |  |
| --- | --- | --- |
| **Content of Review** | **y/n** | **Notes** |
| Clarity |  |  |
| Is there a README file that clearly explains the content of the working directory folder? |  |  |
| Is there a primary script file that clearly provides the recommended order for running files? |  |  |
| Complexity |  |  |
| Is code clear? |  |  |
| Can code be easily tested and debugged? |  |  |
| Can same task be accomplished with fewer lines of code? (e.g., using loops, vectors, or other functions) |  |  |
| Comments |  |  |
| Do comments help reader understand content of code? Can they be clarified? |  |  |
| Do comments help reader identify sections of code? |  |  |
| Are there places where comments would be helpful, but do not exist? |  |  |
| Are there places where comments are leftover and should be removed? (e.g., a to-do item) |  |  |
| Do all figures and tables include provenance (i.e., notes about what script file was used to create them)? |  |  |

Legibility and clarity, continued…

|  |  |  |
| --- | --- | --- |
| **Content of Review** | **y/n** | **Notes** |
| Alignment and Spacing |  |  |
| Are the starting and ending points of code blocks easy to identify? |  |  |
| Is code broken into easy-to-read chunks? |  |  |
| Does code follow norms/best practices for alignment and spacing? |  |  |
| To create indentation, is there a mixture of tabs and spaces? If so, edit to only spaces. |  |  |
| Is code indented within curly braces? |  |  |
| Are spaces missing? Are there too many spaces? |  |  |
| Are lines unnecessarily long? (can they fit on a standard screen without wrapping) |  |  |
| Are line breaks reasonable and effective? |  |  |

# Functionality

|  |  |  |
| --- | --- | --- |
| **Content of Review** | **y/n** | **Notes** |
| Are all variables present and in the appropriate form for analysis? |  |  |
| Compare values in tables to values in log files/output. |  |  |
| Compare values in figures to values in tables (and/or log files and output). |  |  |
| Examine the accuracy of values/parameters (for example, if the mean of a variable when estimated by a t-test is higher than the range of the variable). |  |  |