

ACTUARIAL BEST PRACTICES

Bruin Actuarial Society
April 30th, 2024

BAS.00

BRUIN ACTUARIAL SOCIETY

AGENDA

01

Folder Structure

02

Work Formatting

03

Reviewable Analysis

04

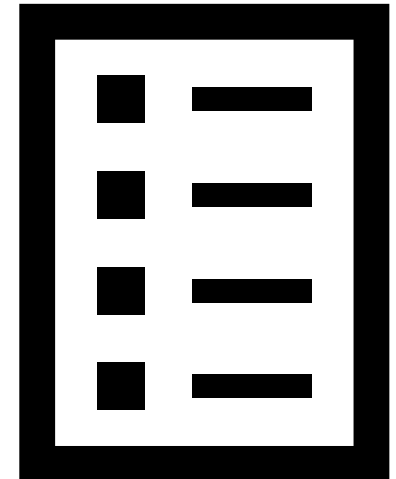
Documentation

05

Peer and Manager Review

06

Presenting Your Work



Folder Structure

FOLDER STRUCTURE

- Goal: Organize the files into a hierarchy
- Why: Makes it easier for different users to find the necessary info

Bad

Good

Name	Date modified	Type	Size
accounting	4/28/2024 1:11 PM	File folder	
Actuarial Training	4/28/2024 1:12 PM	File folder	
ppt1	4/28/2024 1:11 PM	File folder	
Rate Comparson	4/28/2024 1:12 PM	File folder	
rate filling	4/28/2024 1:11 PM	File folder	
Tian	4/28/2024 1:11 PM	File folder	

Name	Date modified
Accounting	4/28/2024 1:11 PM
Actuarial Training	4/28/2024 1:12 PM
Personal File	4/28/2024 1:11 PM
Presentation	4/28/2024 1:11 PM
Rate Comparson	4/28/2024 1:12 PM
Rate Filling	4/28/2024 1:11 PM



PRINCIPLES

Easy to Navigate, intuitive,
and lead user to the
correct information



Create the File Structure
before starting the project
could help avoid confusion
in the long run



Review current structure
and make sure you
maintain them when
create new folders



OTHER TIPS

- If you want subfolders in a certain order other than alphabetical, adding numbers in the front could achieve that.
- An “Archive” folder can be a good idea so you can place your old work from the main folder but also keep a copy.



Formatting Your Work

OVERVIEW

- Analysis is important, but it's not worth much if you cannot communicate the results to other stake holders

smoker	(All)	
sex	(All)	
Row Labels	Sum of charges	Average of bmi
northeast	4343668.583	29.17350309
northwest	4035711.997	29.19978462
southeast	5363689.763	33.35598901
southwest	4012754.648	30.59661538
Grand Total	17755824.99	30.66339686

Region	Sum of Premium	Average Policyholder BMI
Northeast	\$ 4,343,669	29.2
Northwest	\$ 4,035,712	29.2
Southeast	\$ 5,363,690	33.4
Southwest	\$ 4,012,755	30.6
Grand Total	\$ 17,755,825	30.7

HELPFUL TIPS

- Different type of documents will require different level/type of formatting
- Consider your audience when deciding how to format your information
- Use visual techniques like color coding to guide your audience.



Creating Reviewable Analysis

DOCUMENTING ASSUMPTIONS

**METROPOLITAN DIRECT PROPERTY AND CASUALTY INSURANCE COMPANY
AUTOMOBILE MANUAL
CALIFORNIA**

Years Licensed Factor

Applies to BI, PD, MED, UM, COMP, COLL

<u>Years of Driving Exp.</u>	<u>BI</u>	<u>PD</u>	<u>MED</u>	<u>UM</u>	<u>COMP</u>	<u>COLL</u>
0-2	1.50	1.41	1.29	1.29	1.15	1.33
3-5	1.27	1.28	1.24	1.28	1.14	1.29
6-8	1.04	1.22	1.10	1.19	1.10	1.20
9-13	1.03	1.06	1.06	1.02	1.09	1.08
14-18	1.00	1.01	1.07	1.01	1.06	1.03
19-23	1.00	1.01	1.04	1.00	1.03	1.03
24-28	1.00	0.99	1.02	0.99	1.00	1.01
29-33	0.98	0.96	0.98	0.97	0.99	0.98
34-38	0.96	0.92	0.98	0.92	0.93	0.95
39-43	0.93	0.88	0.92	0.91	0.90	0.94
44-48	0.97	0.91	0.94	0.93	0.91	0.93
49-53	1.00	0.95	0.96	0.96	0.95	0.93
54-58	1.02	1.00	0.98	0.98	1.01	0.97
59+	1.05	1.04	1.02	1.03	1.06	1.01
Excess Vehicle	0.87	0.88	0.85	1.01	0.86	0.93

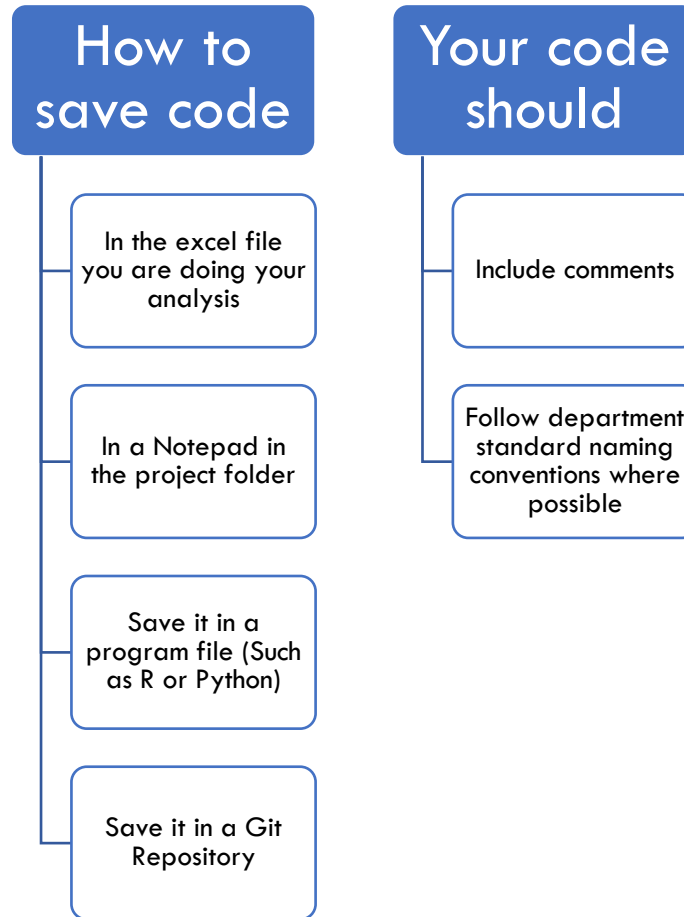
- An example of Insurance Filing Exhibit from Famers Insurance
- An analyst may include notes on how those factors are calculated, where the data is obtained, and other relevant links on the side of the excel workbook, which are not made available to state Department of Insurance

ASOP

“Actuarial Report—The actuary should complete an actuarial report if the actuary intends the actuarial findings to be relied upon by any intended user. The actuary should consider the needs of the intended user in communicating the actuarial findings in the actuarial report. An actuarial report may comprise one or several documents. The report may be in several different formats (such as formal documents produced on word processing, presentation or publishing software, e-mail, paper, or web sites). Where an actuarial report for a specific intended user comprises multiple documents, the actuary should communicate which documents comprise the report. In the actuarial report, the actuary should state the actuarial findings, and identify the methods, procedures, assumptions, and data used by the actuary **with sufficient clarity that another actuary qualified in the same practice area could make an objective appraisal of the reasonableness of the actuary’s work as presented in the actuarial report”**



SAVING CODES



Documentation

REPRODUCIBILITY

- Successful process ought to be reproducible for future users
- Reproducibility also an important aspect of troubleshooting
- Ad hoc processes may later become more commonly used
- Specificity
 - Processes often designed for specific context – state, program, date
- Centralization
 - Prolific documentation without centralization can lead to goose chases, inconsistent practices

ARCHIVAL PROCESS

- Process improvement is often iterative
- Slight or moderate adjustments to existing code and documents
- Keep a record of older models
- If creating state specific document, save a copy before making changes so that master copy is preserved
- Significant improvements may merit new master file, but older versions of processes should be archived, not deleted.



Peer and manager review

REVIEWS

- Who?
 - Appropriate experience
- What?
 - Clearly defined scope
 - Sufficiently clear analysis that can be followed by reviewer without additional guidance
- When?
 - Published work products
 - Actuarial communications
- Why?
 - Company reputation
 - Professional standards



REVIEW PROCEDURES

Double check

- Assumptions and inputs
- Linked files

Cross check

- Aggregate and compare to an independent source
- Prior data/analysis
- Different exhibit in same analysis

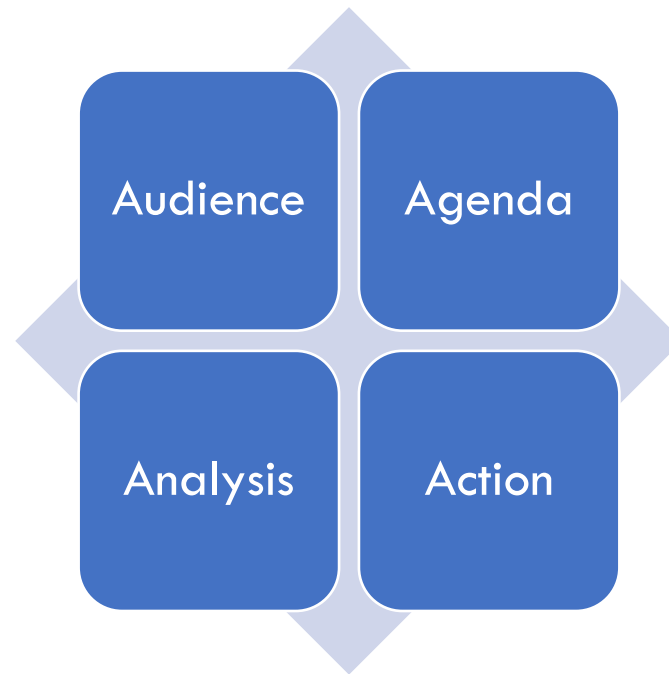
Reasonability check

- 200% Rate increase?
- \$5 Billion in earned premium?

Presenting Your Work

KEY PIECES TO PRESENTING

- Presentations should be simplified, justified, and visually meaningful towards these key pieces



AUDIENCE

- Determine who your target audience is will help you cater things like tone, analysis, and graphics to each presentation.
- It is important to consider how your audience best receives information and tailor your prestation to them

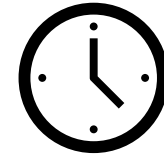
Who is the audience

What background information does the audience have? What additional information do you need to provide?

What takeaways do you hope to accomplish given your audience?

AGENDA

- Consider your allotted time, and keep your agenda attainable in that timeframe
- Provide a clear agenda that tells your audience what will be covered during your presentation
 - **Always** include an agenda in a meeting invite
- Leave a few minutes at the end of your presentation for Q&A



ANALYSIS

- Present your analysis three ways:
 - Verbally give an overview of each graphic/slide in your presentation, and provide context beyond what is on the screen
 - Write out any helpful notes that may be necessary when returning to your presentation.
 - Visualize results, data, or action items to give your audience something to remember your main points.



ACTION

- Give your audience something to take away and act upon from your presentation
- This may include encouraging the audience to try your new process, decide on your proposed rate action, or approve your methodology.
 - The list of possibilities is endless



TAKEAWAYS SLIDE

KEY TAKEAWAYS

- Remember document your work!
- When presenting, know your audience

ANNOUNCEMENTS



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Thank you

Any questions?