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## CREATING A REIXS BEAMLIN LOGBOOK ##
Log = LogLoader()

## LOADING A LOG BOOK ##
Log.load(config, 'filename', logbook, **kwargs)

# REQUIRED VARIABLES ##
## config = RIXS          -> RIXS Endstation
## config = RSXS         -> RSXS Endstation
## logbook = rixs_log     -> RIXS Endstation
## logbook = rsxs_log     -> RSXS Endstation
## filename = hdf5 filename -> extension not required

## **kwargs ##
## ncols = ['Title1', 'Title2', ..., 'TitleN'] -> Remove columns from logbook, key by Titles of columns

## ADDING ADDITION COMMENTS OR DATA ##
Log.append('column', scan, 'text')

## REQUIRED VARIABLES ##
## column -> The title of logbook column to be appended
## scan   -> The scan number to be appended
## text   -> Text to be appended

## CHANGING VALUES OF ENTRIES ##
Log.replace('column', scan, 'text')

## REQUIRED VARIABLES ##
## column -> The title of logbook column to be changed
## scan   -> The scan number to be changed
## text   -> Text to be changed

## FILTERING LOG ENTRIES ##
Log.filter('column', 'value')

## REQUIRED VARIABLES ##
## column -> The title of logbook column to be filtered
## value  -> Include condition to sort on, can be !, >, <. '==' is implied

## DISPLAYING A LOG BOOK ##
Log.show(**kwargs)

## **kwargs ##
## scans = [start]   -> Starts the current logbook from the scan specified
## scans = [min,max] -> Reduces the displayed scans in the log book to this range

## EXPORTING LOG BOOK AS CSV FILE ##
Log.export('filename')

## REQUIRED VARIABLES ##
## filename = filename to be used for ASCII file, do not add extension

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## Basic implimentation of logbook
## Display scans 20 to 30, remove Date column
Log = LogLoader()
Log.load(RIXS, 'HDF5_Notebook', rixs_log, ncols = ['Date'])
Log.show(scans = [20,30])
Log.export('Test_log')

```

Scan	Command	Sample	Comments	Horz (ssh)	Vert (ssv)	Depth (ssd)	Angle (ssa)	Temperature	Energy	Exit Slit	Flux	Dwell	Mirror/Grating	Polar/Harmonic	XES Energy	XES Grating	XES Offset	Shift File	XEOL Rate	Status
20	loopscan 10 30 0	Stainless		-1.0	0.0	-0.7	62.5	(297.5,297.5,297.5)	(400.0,400.0,400.01)	25.4	99.8	(30.0,30.0,30.0)	Au HEG; NICKEL;	LINEAR VERT -; 1;	389.93	LEG	-0.0	LEG_390_0.dat	1.0	Scan successfully completed.
21	loopscan 10 30 0	Stainless		-1.0	0.0	-0.7	62.5	(297.5,297.5,297.5)	(410.0,410.0,410.0)	25.4	99.8	(30.0,30.0,30.0)	Au HEG; NICKEL;	LINEAR VERT -; 1;	389.93	LEG	-0.0	LEG_390_0.dat	1.0	Scan successfully completed.
22	loopscan 10 30 0	Stainless		-1.0	0.0	-0.7	62.5	(297.5,297.5,297.5)	(420.01,420.01,420.01)	25.4	99.8	(30.0,30.0,30.0)	Au HEG; NICKEL;	LINEAR VERT -; 1;	389.93	LEG	-0.0	LEG_390_0.dat	1.0	Scan successfully completed.
23	loopscan 10 60 0	hBN	hBN XEOL spectrum;	4.41	0.0	-0.6	62.5	(297.5,297.5,297.5)	(420.01,420.0,420.01)	25.4	99.8	(60.0,60.0,60.0)	Au HEG; NICKEL;	LINEAR VERT -; 1;	389.93	LEG	-0.0	LEG_390_0.dat	60.0	Scan successfully completed.
24	loopscan 5 60 0	hBN	XEOL background;	4.41	0.0	-0.6	62.5	(297.5,297.5,297.5)	(420.01,420.0,420.01)	25.4	99.8	(60.0,60.0,60.0)	Au HEG; NICKEL;	LINEAR VERT -; 1;	389.93	LEG	-0.0	LEG_390_0.dat	60.0	Scan successfully completed.
25	rscan engy 390 430 400 5	hBN	hBN scan using SDDA;	4.41	0.0	-0.6	62.5	(297.5,297.5,297.5)	(410.0,390.0,430.0)	25.4	99.8	(5.0,5.0,5.0)	Au HEG; NICKEL;	LINEAR VERT -; 1;	389.93	LEG	-0.0	LEG_390_0.dat	1.0	Scan successfully completed.
26	rscan engy 390 430 400 5	hBN		4.41	0.0	-0.6	62.5	(297.6,297.5,297.6)	(410.0,390.0,430.0)	25.4	99.8	(5.0,5.0,5.0)	Au HEG; NICKEL;	LINEAR VERT -; 1;	389.93	LEG	-0.0	LEG_390_0.dat	1.0	Scan successfully completed.
27	rscan engy 390 430 400 5	hBN	hBN scan using SDDB;	4.41	0.0	-0.6	62.5	(297.6,297.6,297.6)	(410.0,390.0,430.0)	25.4	20.0	(5.0,5.0,5.0)	Au HEG; NICKEL;	LINEAR VERT -; 1;	389.93	LEG	-0.0	LEG_390_0.dat	1.0	Scan successfully completed.
28	rscan engy 390 430 400 5	hBN		4.41	0.0	-0.6	62.5	(297.6,297.6,297.6)	(410.0,390.0,430.0)	25.4	20.0	(5.0,5.0,5.0)	Au HEG; NICKEL;	LINEAR VERT -; 1;	389.93	LEG	-0.0	LEG_390_0.dat	1.0	Scan successfully completed.
29	rscan engy 390 430 400 5	hBN		4.41	0.0	-0.6	62.5	(297.6,297.6,297.6)	(410.0,390.0,429.99)	25.4	18.5	(5.0,5.0,5.0)	Au HEG; NICKEL;	LINEAR HORIZ; 1;	389.93	LEG	-0.0	LEG_390_0.dat	1.0	Scan successfully completed.
30	rscan engy 390 430 400 5	hBN		4.41	0.0	-0.6	62.5	(297.6,297.6,297.6)	(410.0,390.0,430.0)	25.4	18.5	(5.0,5.0,5.0)	Au HEG; NICKEL;	LINEAR HORIZ; 1;	389.93	LEG	-0.0	LEG_390_0.dat	1.0	Scan successfully completed.

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## Displaying log entries from Scan 1 to 5
## Modifying and appending data to the logbook
Log = LogLoader()
Log.load(RIXS, 'HDF5_Notebook', rixs_log, ncols = ['Date'])
Log.append('Comments', 5, 'Awful Scan;')
Log.replace('Sample', 4, 'Stainless')
Log.show(scans = [1,5])
Log.export('Test_log2')

```

Scan	Command	Sample	Comments	Horz (ssh)	Vert (ssv)	Depth (ssd)	Angle (ssa)	Temperature	Energy	Exit Slit	Flux	Dwell	Mirror/Grating	Polar/Harmonic	XES Energy	XES Grating	XES Offset	Shift File	XEOL Rate	Status
1	ascan ssh -7 -3 40 2	BGO	Testing lineup scan on BGO;	(-5.0, -7.0, -3.0)	0.0	-0.7	62.5	(297.5,297.5,297.5)	(560.0,560.0,560.0)	25.4	32.0	(2.0,2.0,2.0)	Au HEG; NICKEL;	LINEAR HORIZ; 1;	519.82	LEG	-1.0	LEG_520_-1.dat	1.0	Scan successfully completed.
2	ascan ssv -2 2 40 2	BGO		(0.0, -2.0,2.0)	-0.7	62.5	(297.5,297.5,297.5)	(560.0,559.99,560.0)	25.4	32.0	(2.0,2.0,2.0)	Au HEG; NICKEL;	LINEAR HORIZ; 1;	519.82	LEG	-1.0	LEG_520_-1.dat	1.0	Scan successfully completed.	
3	mesh ssh -7.197 -3.197 40 ssv -1.499 2.511 40 1	BGO		(-5.2, -7.2, -3.2)	(0.51, -1.5,2.51)	-0.7	62.5	(297.5,297.5,297.5)	(560.0,559.99,560.02)	25.4	32.0	(1.0,1.0,1.0)	Au HEG; NICKEL;	LINEAR HORIZ; 1;	519.82	LEG	-1.0	LEG_520_-1.dat	1.0	Scan successfully completed.
4	loopscan 100 1 0	Stainless	Background for XEOL;	-3.2	2.51	-0.7	62.5	(297.5,297.5,297.5)	(560.02,560.02,560.02)	25.4	32.0	(1.0,1.0,1.0)	Au HEG; NICKEL;	LINEAR HORIZ; 1;	519.82	LEG	-1.0	LEG_520_-1.dat	1.0	Scan successfully completed.
5	loopscan 10 30 0	Stainless	Elastic Peaks; Awful Scan;	-1.0	0.0	-0.7	62.5	(297.5,297.5,297.5)	(499.99,499.99,500.0)	25.4	34.3	(30.0,30.0,30.0)	Au HEG; NICKEL;	LINEAR VERT -; 1;	519.82	LEG	-1.0	LEG_520_-1.dat	1.0	Scan successfully completed.