The efficacy of demand-based categorisation and dynamic loan period assignment relies on the diversity and expansiveness of data used as input. Therefore, whenever there is availability of new data with regards to loans and requests made in the library, it is best to formulate a new model to account for any differing patterns that might have been captured. Following are few points to be kept in mind with regards to the data that is used as input:

Time Period

Ensure that the time period used for generation of both datasets (i.e. requests and loans) are the same. For best results, use a minimum of 3 months or a maximum of 12 months of data

Loan Dataset: Sample

Author	ISBN	Publisher	Publication Date	Barcode	Patron Group	Loan Date	Due Date	Return Date	Renewals	Recalls	Auto Renewals	Policy Name	Item Policy
Begg, David	0077121880; 9780077121884	McGraw-Hill ISE	2009	R05325N2832		1-7-2019	1-7-2019	1-7-2019	0	0	0		Standard loan
Radebaugh, Lee H.; Daniels, John D.	0201592932; 9780201592931	Addison-Wesley	1995	R02782X2832			1-7-2019	1-7-2019	0	0	0		Standard loan
Thomas, David C. 1947- author. (David Clinton),	1506387527; 9781506387529	SAGE	2018.	R09253X2832	Postgraduate (Taught)	1-8-2019	6-24-2019	4-9-2019	0	0	1	84 Days	O/Access/Loan
Verzuh, Eric.	1119148227; 9781119148227; 9781119086673; 1119086671	Wiley	[2016]	R09047Y2832	Staff	1-9-2019	1-15-2019	1-22-2019	0	1	0	84 Days	O/Access/Loan
Zemach, Dorothy	9780472033836; 0472033832	University of Michigan Press	2010	R08668F2832	Staff	1-10-2019	6-25-2019		0	0	1	84 Days	Standard loan
Challacombe, Fiona.	0091939690; 9780091939694	Vermilion	2011.	R09269N2832		1-14-2019	1-14-2019	1-14-2019	0	0	0		O/Access/Loan
Cooper, Chris	1911396773; 9781911396772	Goodfellow Publishers Limited	2019	R09264A2832			1-14-2019	1-14-2019	0	0	0		O/Access/Loan
				R09265J2832			1-14-2019	1-14-2019	0	0	0		O/Access/Loan
				R09266K2832			1-14-2019	1-14-2019	0	0	0		O/Access/Loan
				R09267L2832			1-14-2019	1-14-2019	0	0	0		O/Access/Loan
Scholes, Kevan; Johnson, Gerry; Whittington, Richard	9780273737025; 0273737023	Prentice Hall Europe	2011	R05982L2832	Postgraduate (Taught)		7-1-2019	4-9-2019	0	0	1	84 Days	Standard loan
Angwin, Duncan; Whittington, Richard; Regnér, Patrick; Scholes, Kevan; Johnson, Gerry	9781292002545; 1292002549	Pearson Education Ltd	2014	R06773K2832	Postgraduate (Taught)	4-8-2019	2-4-2019		0	0	0	84 Days	O/Access/Loan
				R06774L2832	Postgraduate (Taught)		7-1-2019	4-9-2019	0	0	1	84 Days	O/Access/Loan
				R06775M2832	Postgraduate (Taught)		7-1-2019	4-9-2019	0	0	1	84 Days	O/Access/Loan
Johnson, Gerry, author.	1292145129; 9781292145129	Pearson	2017.	R09271X2832			1-14-2019	1-14-2019	0	0	0		O/Access/Loan
				R09272Y2832			1-14-2019	1-14-2019	0	0	0		O/Access/Loan

Requests Dataset: Sample
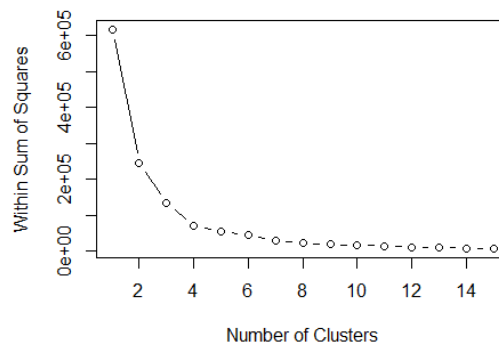
Title	Edition	Author	ISBN	Publisher	Publication Date	# of requests	Request Date	Time to Patron Collection (Days)	Time to Process (Days)	Time to Available (Days)	Cancellation Reason
Brilliant Essay: What you Need to Know and How to Do It		Kirton, Bill.	9780273743750; 0273743759	Pearson Education Ltd	2011	1	1-5-2018				Cancelled at patron's request
Brilliant Essay: What you Need to Know and How to Do It		Kirton, Bill.	9780273743750; 0273743759	Pearson Education Ltd	2011	1	1-7-2018				Cancelled at patron's request
International and Comparative Human Resource Management		Hollinshead, Graham	9780077121600; 0077121600	McGraw-Hill Education	2010	1	2-1-2018			4	None
Human resource management : a concise introduction /			113700939X; 9781137009395	Palgrave Macmillan	2013.	1	2-2-2018			3	Booking request passed its release time
Doing a Literature Review: Releasing the Social Science Research Imagination		Hart, Chris	0761959750; 9780761959755	Sage Publications Ltd	1998	1	2-6-2018			0	Booking request passed its release time
International and Comparative Human Resource Management		Hollinshead, Graham	9780077121600; 0077121600	McGraw-Hill Education	2010	1					Duplicate request
International and Comparative Human Resource Management		Hollinshead, Graham	9780077121600; 0077121600	McGraw-Hill Education	2010	1	2-8-2018	7	0	0	None
International and Comparative Human Resource Management		Hollinshead, Graham	9780077121600; 0077121600	McGraw-Hill Education	2010	1	2-15-2018	7	0	4	Booking request passed its release time
Employees and Employers in Service Organizations: Emerging Challenges and Opportunities		Birdie, Arvind K. ed.	9781771884730; 1771884738	Apple Academic Press Inc	2017	1	2-16-2018	7	0	3	Booking request passed its release time

Dataset File Format

Ensure that any uploaded files are in the .XLSX (Excel 2010 +) format. If this format is not maintained, the analyses cannot be run, and an error will be returned

Elbow Chart for Clustering

An elbow chart is used to select the optimum number of clusters for the categorisation activity. In this scenario, a cluster can be considered as an algorithmically derived demand-based category. The number of clusters to be used for further processing cannot be determined by the system and will have to be inputted through the dropdown button on this page.

For example, in the above Elbow Chart, the optimum number of clusters can be considered as "4" due to majority of the data observations being encapsulated in four clusters (denoted by the flattening of the curve in the above chart).

Demand Category Descriptions

A .XLSX (Excel) file with required demand category descriptions will have to be uploaded. The number of demand categories will depend on the number of clusters chosen in the above step. For example, if four clusters have been selected as optimum, the demand category descriptions may be as follows,

	A	B	C
1	Very High		
2	High		
3	Moderate		
4	Low		
5			
6			
7			