

FIG. 1

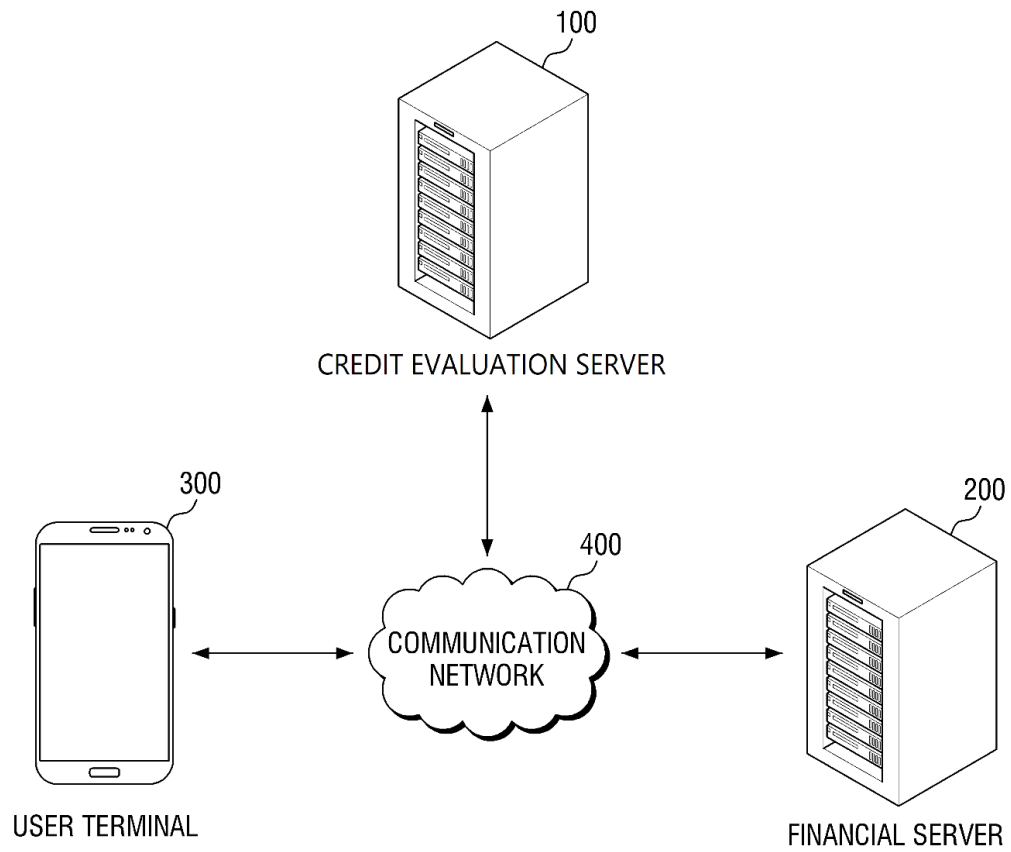


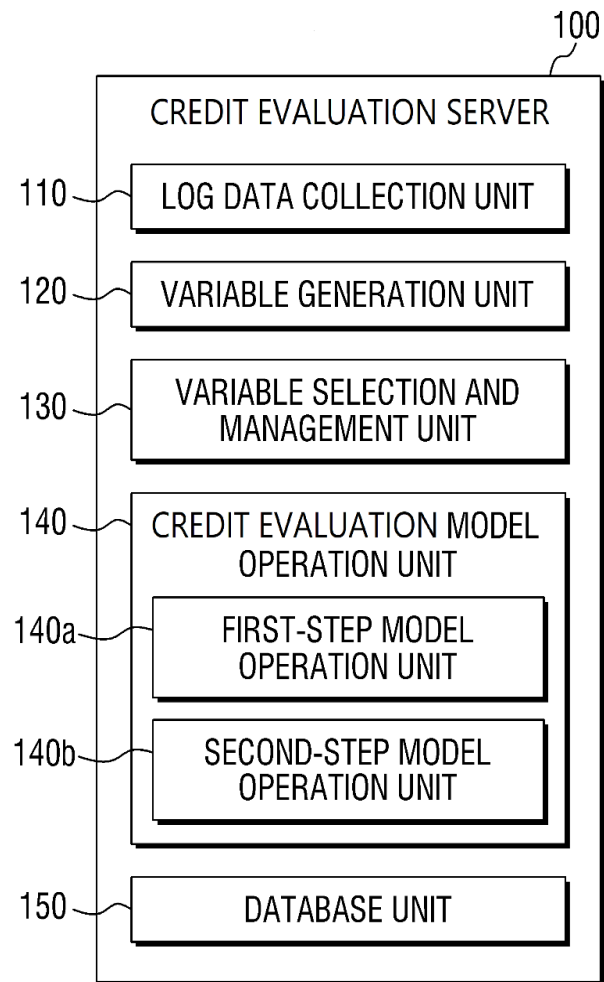
FIG. 2

FIG. 3

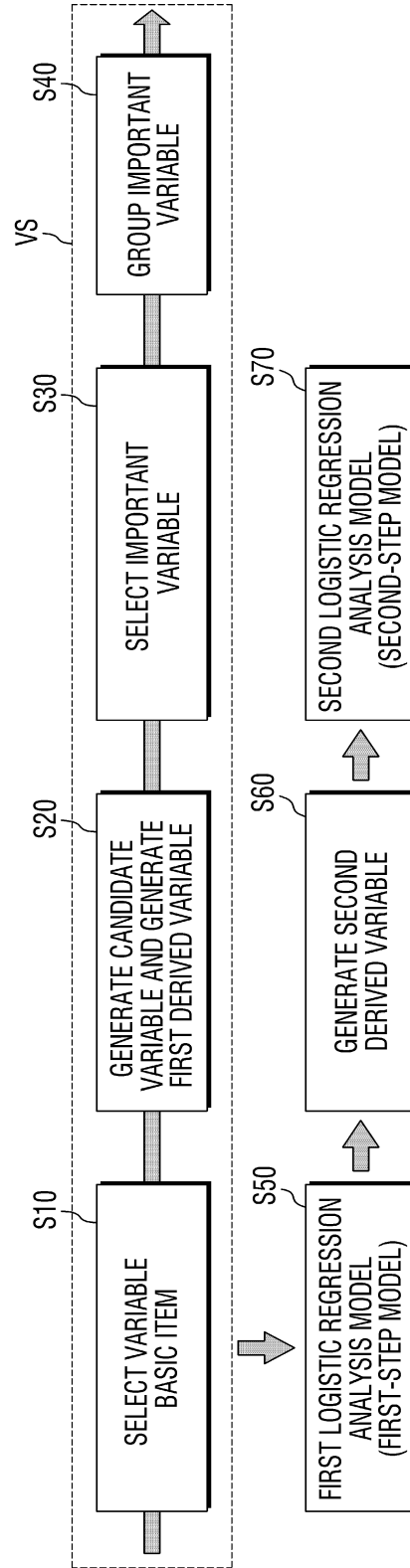


FIG. 4

[Category]		[Features]	
Category for subscale	Features Item	Features Number	
Registration, Account Open, Cancel	Membership registration, account opening, number of early termination requests, and so on	9	
Custom Setting	Number of custom settings (account name change, account color change, bookmark registration, and so on)	3	
Menu and Tab Click	Entire tap list menu, profile region icon menu click, my tab, number of recommendation tab clicks	7	
Authentication	Individual identification number check, your mobile phone check, identification card check, number of pin authorities, and so on	5	
Account Activity	My assess state, product information inquiry, urgent withdrawal, number of deposit and saving selections, and so on	9	
Transaction Activity	Balance change, number of account transfers, and so on	6	
Check card	Check card type selection, check card request check, number of request completions, and so on	3	
Login, Logout	log-in, log-out, number of app executions, and so on	3	
Recommendation	App advertisement banner click, front surface pop-up click, to do start, alarm, app push, number of recommendation tab clicks, and so on	11	
OCR	Identification card shooting, camera execution, number of identification card automatic transfers, and so on	10	

FIG. 5

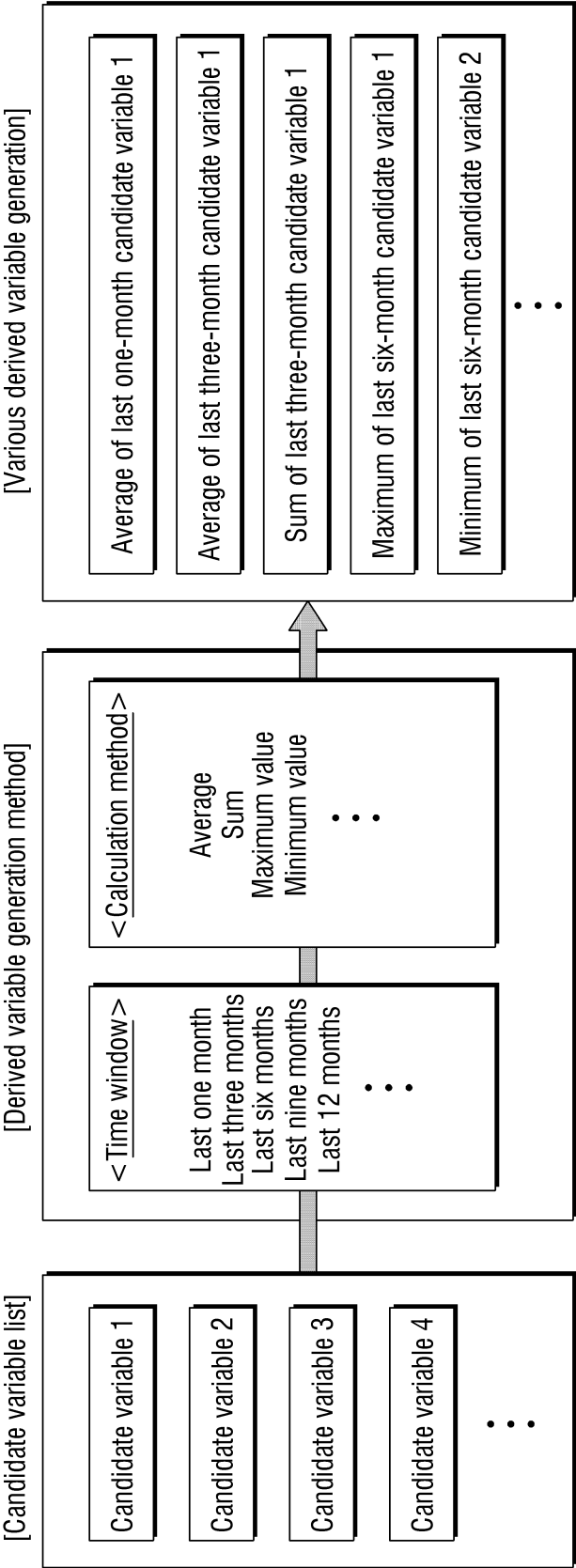


FIG. 6

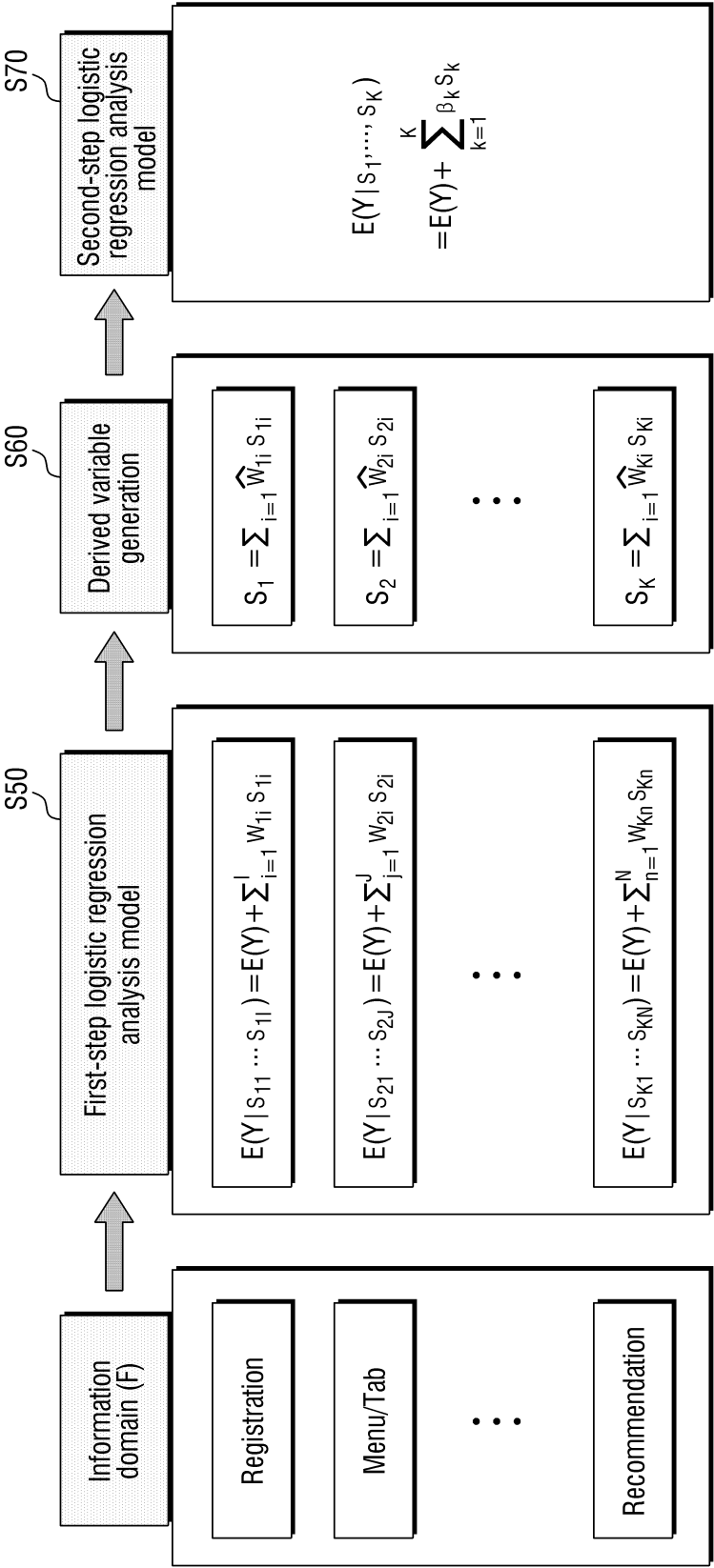


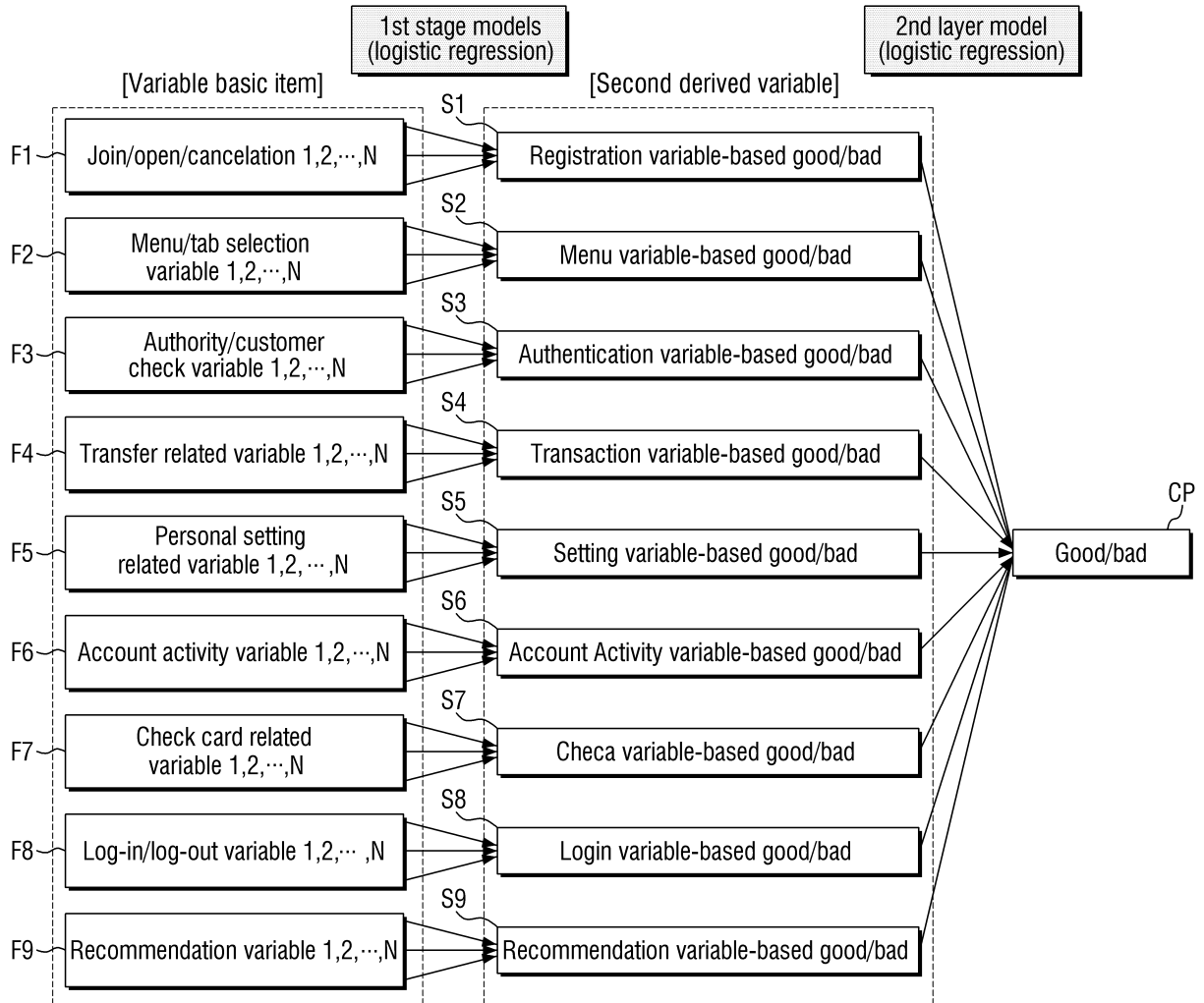
FIG. 7

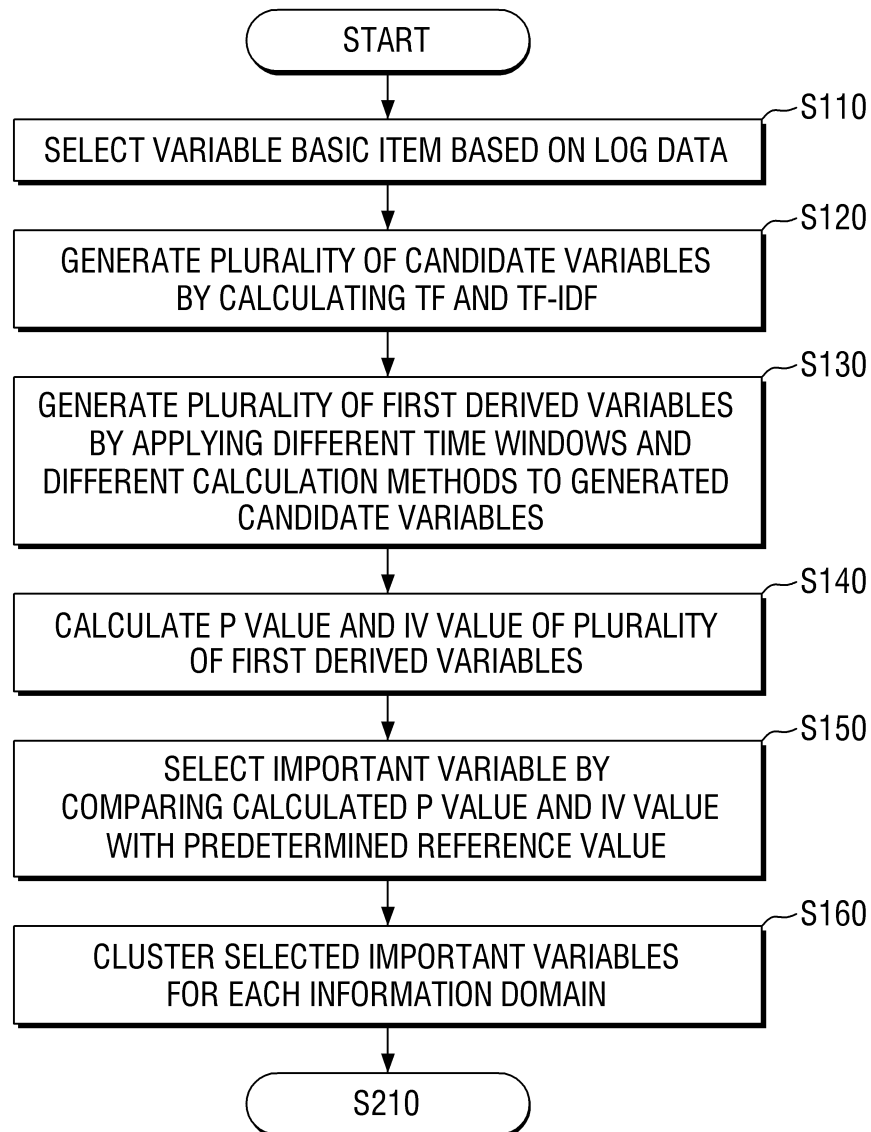
FIG. 8

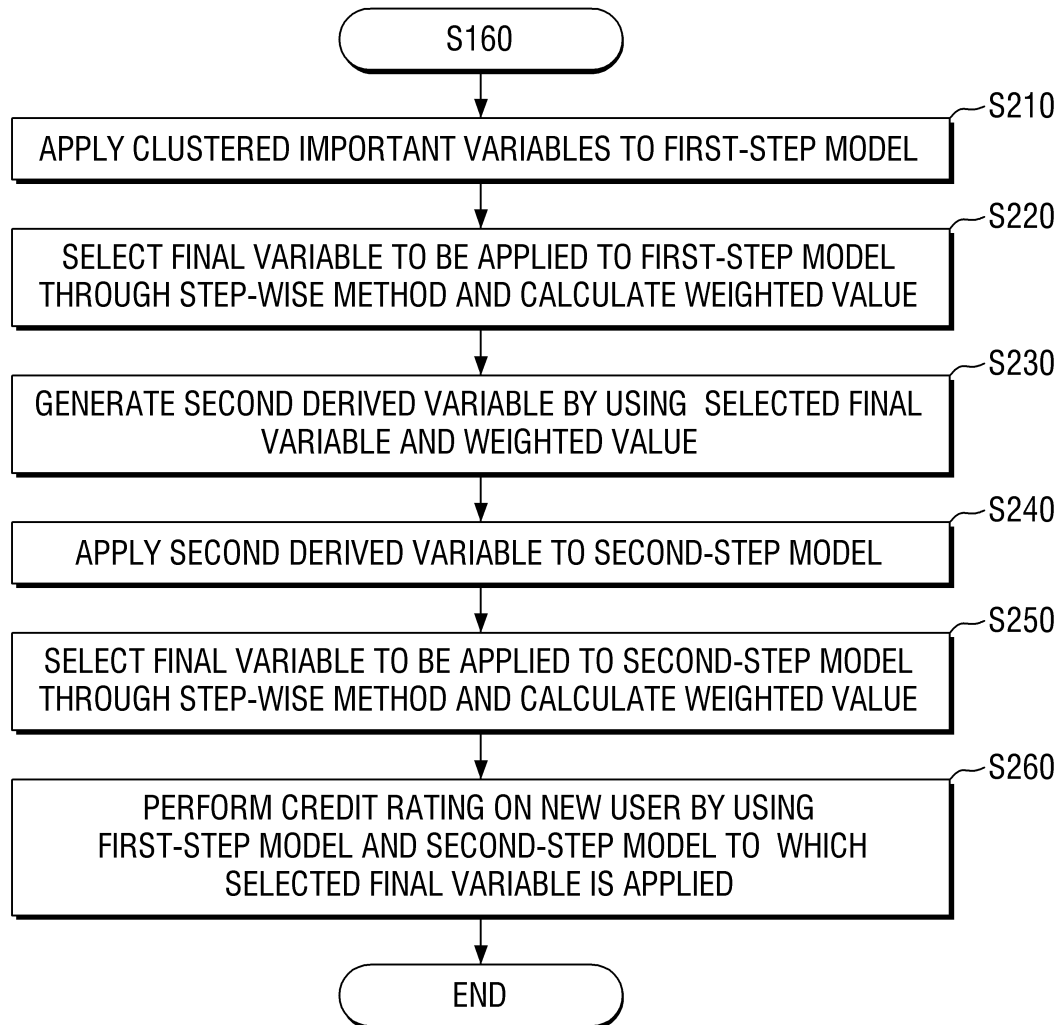
FIG. 9

FIG. 10

	Model	Training dataset		Test dataset	
		AUROC	K-S	AUROC	K-S
M1	Baseline model	61.4	18.4	57.5	12.2
M2	2-stage machine learning model	64.8	22.4	62.0	18.5

FIG. 11