

**HP-35s Calculator Program –**

**STOCHASTIC PROJECT SCHEDULING**

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Line	Instruction	Process	User Instruction
S001	LBL S	Establishing the library	
S002	STOCHASTIC SCHEDULE	Title: STOCHASTIC SCHEDULE	Key in using EQN, RCL S, RCL T, etc
S003	PSE		
S004	CLΣ		
S005	ACTV ON C-PATH	The number of the activity on the critical path	
S006	PSE		
S007	n		
S008	1		
S009	+		
S010	STO N		
S011	VIEW N		
S012	OPT DURATION	Insert the optimistic duration (least time)	
S013	PSE		
S014	INPUT A		
S015	LIKELY DURATION	Insert the likely duration for this activity	
S016	PSE		
S017	INPUT L		
S018	PESSIM DURATION	Insert the pessimistic/longest duration for this activity	
S019	PSE		
S020	INPUT B		
S021	CLSTK		Nomenclature:
S022	RCL L		
S023	4		A = Optimistic Duration
S024	x		B = Pessimistic Duration
S025	RCL B		L = Likely Duration
S026	+		M = Mean Duration (average)
S027	RCL A		P = Probability for targeted period
S028	+		S = Standard Deviation
S029	6		X = Targeted Schedule Period
S030	÷		
S031	STO T		
S032	ENTER		
S033	INTG		
S034	-		
S035	x≠0		
S036	GTO S039		
S037	RCL T		
S038	GTO S043		
S039	RCL T		
S040	1		
S041	+		
S042	INTG		
S043	RCL B		
S044	RCL A		
S045	-		
S046	6		
S047	÷		
S048	x^2		
S049	Σ+		
S050	CLVARS		
S051	ADD ACTIVITY		
S052	PSE		
S053	INPUT Y	Input a value 1 if you add an activity, 0 if not	
S054	x≠0?		
S055	GTO S007		
S056	Σx		
S057	√x		
S058	STO S		
S059	Σy		
S060	STO M		
S061	MEAN DURATION		

S062	PSE		
S063	VIEW M	Viewing the mean duration of the project	
S064	STAND DEV		
S065	PSE		
S066	VIEW S	Viewing the standard deviation in timing	
S067	TARGET DURATION		
S068	PSE		
S069	INPUT X	Insert the duration set as a goal	
S070	RCL M		
S071	-		
S072	RCL S		
S073	÷		
S074	STO Z		
S075	3		
S076	y^x		
S077	0.07056		
S078	x		
S079	RCL Z		
S080	1.5976		
S081	x		
S082	+		
S083	+/-		
S084	e^x		
S085	1		
S086	+		
S087	1/x		
S088	STO P		
S089	VIEW P		
S090	TRY OTHER X	Insert a value other than 0 to consider another	
S091	PSE	project duration	
S092	INPUT Y		
S093	X≠0?		
S094	GTO S067		
S095	STOP		

## STOCHASTIC PROJECT SCHEDULING

Consider the possibility of having a project scheduled, a critical path figured out, and want to determine the odds of finishing the project at a specific time frame. The average timing estimated for each activity will yield a timing value that has a 50% chance to be completed. As a project manager, using the optimistic timing and pessimistic timing for each one of the activities, you can determine the possibility of finishing the project at a timing other than the average.

Example:

Here we see a table with a project's critical path's list of activities, optimistic, anticipated, and pessimistic durations. By inserting each one of these sequentially in the program we can determine the possibilities of having the project completed at a goal duration.

Activity #	Optimistic Duration	Likely Duration	Pessimistic Duration
1	6	9	12
2	4	6	9
3	2	3	5
4	2	4	8
5	2	3	4
6	3	4	5
7	2	5	6
8	3	7	9
9	2	4	6
10	2	4	7

The mean duration of the project would be 53 days (which corresponds to a probability for the project to be successfully completed at 50% chance), and the standard deviation would be 2.4. If we target a duration of 55 days, the chances for this project to be completed by then would be 79.8%. If the target duration is 50 days, the chances for the project to be successfully completed would be 10.6%. A safe proposal for a bid would be the targeted duration of 57 days which corresponds to a 95.2% chance for the project to be successfully delivered by then.