

Replication of Simulation Models

Hammondspport Savings Bank with One ATM

Arrived Times (Uniform Distribution)

Number Value: 0

Upper Limit: 5

Service Times (Normal Distribution)

Mean: 2

Standard Dev: 0.5

Simulation

Customer	Arrival Time	Service Time	Waiting Time	Service Completion Time	Total Time
1	2.0	1.9	0.0	3.9	3.9

Using Anderson, Sweeney and Williams Hammondspport Savings Bank example for simulation of waiting lines.

	A	B	C	D	E
1017		Summary Statistics			
1018		Number Waiting			552
1019		Probability of Waiting			0.6133
1020		Average Waiting Time			1.37
1021		Maximum Waiting Time			9.8
1022		Utilization of ATM			0.7958
1023		Number Waiting > 1 Min			404
1024		Probability of Waiting > 1 Min			0.4489

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Set up to use a data table 1.

	A	B	C	D	E	F
1021		Maximum Waiting Time			8.5	
1022		Utilization of ATM			0.8001	
1023		Number Waiting > 1 Min			418	
1024		Probability of Waiting > 1 Min			0.4644	
1025						
1026						
1027						
1028				0.4644		
1029			1.0			
1030			2.0			
1031			3.0			
1274			246.0			
1275			247.0			
1276			248.0			
1277			249.0			
1278			250.0			

Identify cell reference for measure to track: in this case in cell D1028 enter = E1024 to track probability of waiting more than 1 minute.

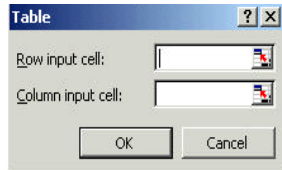
Enter column for number of replications: in this case 1 - 250

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Highlight
cells
C1028 : D1278

Data | Table



	A	B	C	D	E	F
1021		Maximum Waiting Time			8.5	
1022		Utilization of ATM			0.8001	
1023		Number Waiting > 1 Min			418	
1024		Probability of Waiting > 1 Min			0.4644	
1025						
1026						
1027						
1028				0.4644		
1029			1.0			
1030			2.0			
1031			3.0			
1274			246.0			
1275			247.0			
1276			248.0			
1277			249.0			
1278			250.0			

Enter a cell reference in
column input cell to
any blank cell, and then
click **OK**.

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	A	B	C	D	E	F
1023		Number Waiting > 1 Min			370	
1024		Probability of Waiting > 1 Min			0.4111	
1025						
1026						
1027						
1028				0.5111		
1029			1.0	0.4922		
1030			2.0	0.4567		
1031			3.0	0.4489		
1032			4.0	0.4233		

Highlight cells D1028 to end of column,
then: **Edit | Copy | Edit | Paste Special |
Values** to freeze values in these cells.

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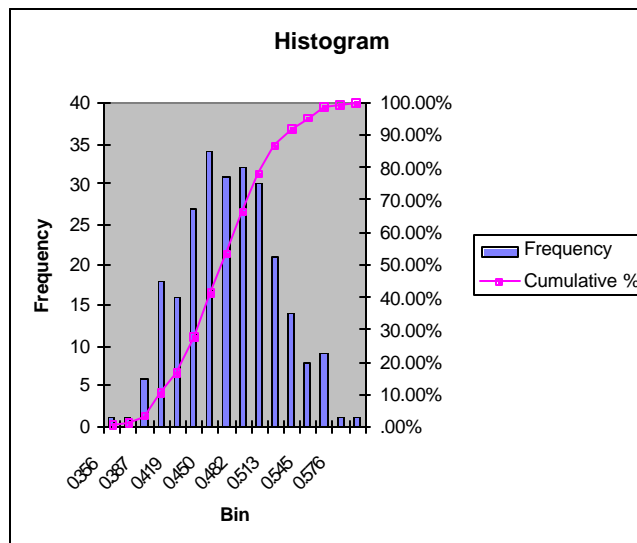
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Use Tools | Data Analysis to create a histogram of results.

<i>Bin</i>	<i>Frequency</i>	<i>Cumulative %</i>
0.356	1	.40%
0.371	1	.80%
0.387	6	3.20%
0.403	18	10.40%
0.419	16	16.80%
0.434	27	27.60%
0.450	34	41.20%
0.466	31	53.60%
0.482	32	66.40%
0.498	30	78.40%
0.513	21	86.80%
0.529	14	92.40%
0.545	8	95.60%
0.561	9	99.20%
0.576	1	99.60%
More	1	100.00%

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