

Lampiran A Data Historis Persediaan Ubi Ungu dan Keripik Ubi Ungu

Periode	Bulan	Tanam UU (Ton)	Panen UU (Ton)	Produksi (Ton)	Permintaan Keripik (Ton)	Yield	Selisih (Ton)	Lost Sales (Ton)	Over Stock (Ton)
1	Jan-17	68	76	22	26	29%	-4	-4	0
2	Feb-17	34	82	25	19	31%	6	0	6
3	Mar-17	75	74	22	21	30%	1	0	7
4	Apr-17	58	63	19	20	30%	-1	0	6
5	May-17	82	68	20	19	29%	1	0	7
6	Jun-17	67	34	10	19	30%	-9	-2	0
7	Jul-17	62	75	23	20	31%	3	0	3
8	Aug-17	62	58	17	20	29%	-3	0	0
9	Sep-17	0	82	25	23	31%	2	0	2
10	Oct-17	17	67	20	20	30%	0	0	2
11	Nov-17	27	62	19	20	31%	-1	0	1
12	Dec-17	11	62	18	23	29%	-5	-4	0
13	Jan-18	26	0	0	0		0	0	0
14	Feb-18	33	17	5	10	29%	-5	-5	0
15	Mar-18	76	27	8	14	29%	-6	-6	0
16	Apr-18	60	11	3	21	28%	-18	-18	0
17	May-18	47	26	8	22	31%	-14	-14	0
18	Jun-18	67	33	10	5	30%	5	0	5
19	Jul-18	65	76	23	18	30%	5	0	10
20	Aug-18	55	60	17	17	28%	0	0	10
21	Sep-18	38	47	14	21	30%	-7	0	3
22	Oct-18	73	67	20	17	30%	3	0	6
23	Nov-18	44	65	19	17	29%	2	0	8
24	Dec-18	97	55	16	20	29%	-4	0	4
25	Jan-19	-	38	11	10	29%	1	0	5
26	Feb-19	-	73	22	14	30%	8	0	13
27	Mar-19	-	44	13	9	29%	4	0	17
28	Apr-19	-	97	29	10	30%	19	0	36
TOTAL		1,243	1,539	458	474	-	-53	-53	151
RATA-RATA		52	55	16	17	30%	-2	-2	5

Lampiran B Hasil *Goodness of Fit Test* Pola Data Permintaan Keripik Ubi Ungu

EasyFit - Evaluation Version

Goodness of Fit - Summary

#	Distribution	Kolmogorov Smirnov		Anderson Darling		Chi-Squared	
		Statistic	Rank	Statistic	Rank	Statistic	Rank
26	Gumbel Min	0.15286	4	0.69181	1	0.54765	3
41	Normal	0.21668	15	1.4036	2	7.2992	30
37	Logistic	0.22184	19	1.4494	3	7.2662	26
27	Hypersecant	0.23488	22	1.5615	4	7.2589	25
11	Error	0.23561	23	1.563	5	7.2812	28
53	Triangular	0.24815	28	1.6488	6	1.5171	7
4	Cauchy	0.17843	11	1.7474	7	1.5897	8
32	Laplace	0.2633	37	1.9003	8	4.8948	20
7	Dagum	0.14612	2	2.5138	9	0.68621	5
8	Dagum	0.14612	3	2.5138	10	0.68621	4
23	Gen. Gamma	0.14128	1	2.5296	11	0.70149	6
2	Burr	0.17454	8	3.2247	12	3.9292	13
56	Weibull	0.17539	9	3.2274	13	3.9372	15
3	Burr	0.17539	10	3.2276	14	3.9349	14
51	Rice	0.21427	12	3.3539	15	4.6547	18
25	Gumbel Max	0.28712	40	3.4844	16	7.2679	27
19	Gamma	0.21668	14	3.8092	17	7.497	39
45	Pearson 6	0.21684	16	3.8178	18	7.4876	38
22	Gen. Gamma	0.21691	17	3.8485	19	7.4395	37
20	Gamma	0.2633	36	4.0249	20	7.4222	36
46	Pearson 6	0.2199	18	4.0304	21	7.3364	31
5	Chi-Squared	0.25992	33	4.0329	22	7.3932	35
36	Log-Logistic	0.17229	7	4.0403	23	5.1969	23
9	Erlang	0.2566	31	4.068	24	7.3533	32
40	Nakagami	0.22595	20	4.1283	25	4.6556	19
38	Lognormal	0.23673	24	4.1416	26	7.8791	43
39	Lognormal	0.23673	25	4.1417	27	7.8789	42
15	Fatigue Life	0.24002	26	4.2228	28	7.8625	40
16	Fatigue Life	0.24002	27	4.2228	29	7.8625	41
10	Erlang	0.28258	38	4.2674	30	0.15072	1

28	Inv. Gaussian	0.25167	30	4.2699	31	0.33737	2
49	Rayleigh	0.25985	32	4.3213	32	5.0389	22
21	Gen. Extreme Value	0.15567	6	4.342	33	N/A	
30	Johnson SB	0.15523	5	4.3616	34	N/A	
43	Pearson 5	0.26092	34	4.5511	35	4.4312	16
44	Pearson 5	0.26092	35	4.5511	36	4.4312	17
50	Rayleigh	0.29355	41	4.665	37	3.786	12
29	Inv. Gaussian	0.28463	39	4.8027	38	7.1729	24
17	Frechet	0.25081	29	4.9051	39	2.3882	9
6	Chi-Squared	0.32869	44	5.1861	40	8.7081	45
14	Exponential (2P)	0.34759	46	6.9188	41	7.3735	34
1	Beta	0.41956	51	7.0237	42	11.523	48
47	Pert	0.3768	48	7.4347	43	10.698	47
35	Log-Logistic	0.32726	43	7.7988	44	7.2975	29
13	Exponential	0.34759	45	7.8543	45	7.3735	33
31	Kumaraswamy	0.29737	42	8.0671	46	N/A	
55	Weibull	0.38123	49	8.0908	47	4.907	21
18	Frechet	0.3538	47	8.1772	48	8.9327	46
54	Uniform	0.21602	13	8.7362	49	N/A	
42	Pareto 2	0.38582	50	8.9433	50	8.5108	44
34	Levy	0.5579	53	11.328	51	2.9145	10
33	Levy	0.5579	54	11.328	52	2.9145	11
24	Gen. Pareto	0.23372	21	11.895	53	N/A	
48	Power Function	0.49721	52	14.107	54	30.214	49
12	Error Function	0.86347	55	115.07	55	N/A	
52	Student's t	0.94541	56	128.89	56	N/A	
57	Johnson SU	No fit					
58	Log-Gamma	No fit					
59	Log-Pearson 3	No fit					
60	Pareto	No fit					
61	Reciprocal	No fit					

EasyFit - Evaluation Version

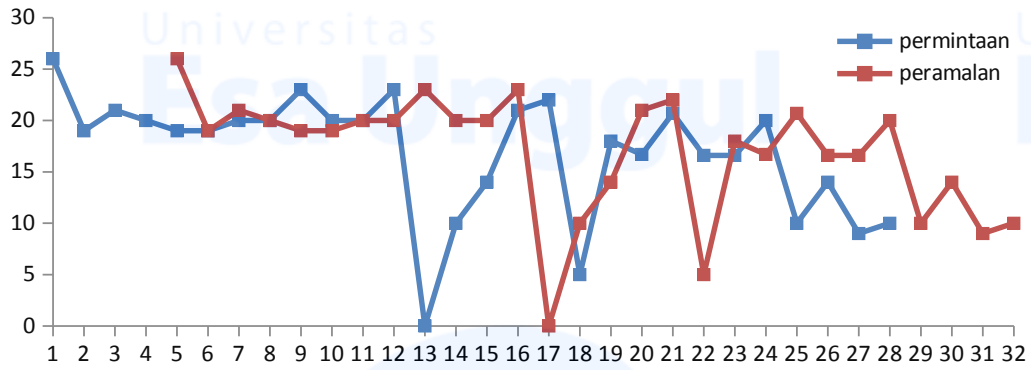
Fitting Results

#	Distribution	Parameters
1	Beta	$\alpha_1=0.29537$ $\alpha_2=0.3763$ $a=-2.1816E-14$ $b=26.0$
2	Burr	$k=1487.3$ $\alpha=4.4291$ $\beta=100.63$
3	Burr	$k=1217.4$ $\alpha=4.4317$ $\beta=96.039$
4	Cauchy	$\sigma=2.1256$ $\mu=19.514$
5	Chi-Squared	$v=17$
6	Chi-Squared	$v=16$
7	Dagum	$k=0.14782$ $\alpha=21.326$ $\beta=22.624$
8	Dagum	$k=0.14782$ $\alpha=21.326$ $\beta=22.624$
9	Erlang	$m=9$ $\beta=1.8921$
10	Erlang	$m=8$ $\beta=2.0849$
11	Error	$k=1.3131$ $\sigma=5.9472$ $\mu=16.964$
12	Error Function	$h=0.1189$
13	Exponential	$\lambda=0.05895$
14	Exponential (2P)	$\lambda=0.05895$ $\gamma=-1.0000E-14$
15	Fatigue Life	$\alpha=0.36796$ $\beta=16.601$
16	Fatigue Life	$\alpha=0.36796$ $\beta=16.601$
17	Frechet	$\alpha=2.0928$ $\beta=13.556$
18	Frechet	$\alpha=0.85129$ $\beta=7.4885$
19	Gamma	$\alpha=9.2978$ $\beta=1.8921$
20	Gamma	$\alpha=8.1367$ $\beta=2.0849$
21	Gen. Extreme Value	$k=-0.89176$ $\sigma=6.4004$ $\mu=16.67$
22	Gen. Gamma	$k=1.0341$ $\alpha=9.071$ $\beta=2.0849$
23	Gen. Gamma	$k=10.703$ $\alpha=0.28911$ $\beta=23.403$
24	Gen. Pareto	$k=-2.6386$ $\sigma=53.558$ $\mu=2.2448$
25	Gumbel Max	$\sigma=4.637$ $\mu=14.288$
26	Gumbel Min	$\sigma=4.637$ $\mu=19.641$
27	Hypersecant	$\sigma=5.9472$ $\mu=16.964$
28	Inv. Gaussian	$\lambda=121.14$ $\mu=17.593$
29	Inv. Gaussian	$\lambda=138.03$ $\mu=16.964$

30	Johnson SB	$\gamma=-1.5419$ $\delta=0.94683$ $\lambda=38.136$ $\xi=-13.291$
31	Kumaraswamy	$\alpha_1=0.50175$ $\alpha_2=0.51997$ $a=-1.6155E-14$ $b=26.0$
32	Laplace	$\lambda=0.2378$ $\mu=16.964$
33	Levy	$\sigma=15.362$
34	Levy	$\sigma=15.362$
35	Log-Logistic	$\alpha=1.0771$ $\beta=13.18$
36	Log-Logistic	$\alpha=5.435$ $\beta=17.779$
37	Logistic	$\sigma=3.2789$ $\mu=16.964$
38	Lognormal	$\sigma=0.3638$ $\mu=2.8127$
39	Lognormal	$\sigma=0.36379$ $\mu=2.8127$
40	Nakagami	$m=3.712$ $\Omega=321.89$
41	Normal	$\sigma=5.9472$ $\mu=16.964$
42	Pareto 2	$\alpha=98.829$ $\beta=1502.6$
43	Pearson 5	$\alpha=6.3454$ $\beta=97.476$
44	Pearson 5	$\alpha=6.3454$ $\beta=97.476$
45	Pearson 6	$\alpha_1=10.626$ $\alpha_2=1.5291E+8$ $\beta=2.5141E+8$
46	Pearson 6	$\alpha_1=9.3584$ $\alpha_2=2.0485E+8$ $\beta=3.8494E+8$
47	Pert	$m=1.6354E-12$ $a=-3.8466E-15$ $b=87.06$
48	Power Function	$\alpha=0.57596$ $a=-2.6318E-14$ $b=26.0$
49	Rayleigh	$\sigma=13.536$
50	Rayleigh	$\sigma=12.919$
51	Rice	$v=16.806$ $\sigma=5.0687$
52	Student's t	$v=2$
53	Triangular	$m=21.0$ $a=-1.5826$ $b=27.06$
54	Uniform	$a=6.6635$ $b=27.265$
55	Weibull	$\alpha=0.66102$ $\beta=27.467$
56	Weibull	$\alpha=4.4318$ $\beta=19.331$
57	Johnson SU	No fit
58	Log-Gamma	No fit
59	Log-Pearson 3	No fit
60	Pareto	No fit
61	Reciprocal	No fit

Lampiran C Perhitungan Peramalan Permintaan Keripik Ubi Ungu

Naive

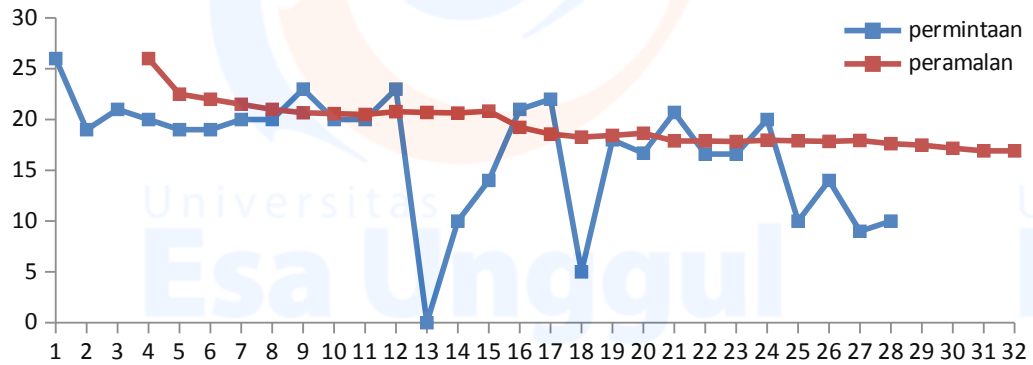


BULAN	PERIODE (t)	PERMINTAAN Y(t)	PERAMALAN Y'(t)	ERROR	Abs. E	E ²	Abs.E / Y(t)
Jan-17	1	26		-			
Feb-17	2	19		-			
Mar-17	3	21		-			
Apr-17	4	20		-			
May-17	5	19	26	-7.00	7.00	49.00	0.27
Jun-17	6	19	19	0.00	0.00	0.00	0.00
Jul-17	7	20	21	-1.00	1.00	1.00	0.05
Aug-17	8	20	20	0.00	0.00	0.00	0.00
Sep-17	9	23	19	4.00	4.00	16.00	0.21
Oct-17	10	20	19	1.00	1.00	1.00	0.05
Nov-17	11	20	20	0.00	0.00	0.00	0.00
Dec-17	12	23	20	3.00	3.00	9.00	0.15
Jan-18	13	0	23	-23.00	23.00	529.00	1.00
Feb-18	14	10	20	-10.00	10.00	100.00	0.50
Mar-18	15	14	20	-6.00	6.00	36.00	0.30
Apr-18	16	21	23	-2.00	2.00	4.00	0.09
May-18	17	22	0	22.00	22.00	484.00	
Jun-18	18	5	10	-5.00	5.00	25.00	0.50
Jul-18	19	18	14	4.0000	4.0000	16.0000	0.2857
Aug-18	20	16.7	21	-4.3000	4.3000	18.4900	0.2048
Sep-18	21	20.7	22	-1.3000	1.3000	1.6900	0.0591
Oct-18	22	16.6	5	11.6000	11.6000	134.5600	2.3200
Nov-18	23	16.6	18	-1.4000	1.4000	1.9600	0.0778
Dec-18	24	20	17	3.3000	3.3000	10.8900	0.1976
Jan-19	25	10	21	-10.7000	10.7000	114.4900	0.5169
Feb-19	26	14	17	-2.6000	2.6000	6.7600	0.1566
Mar-19	27	9	17	-7.6000	7.6000	57.7600	0.4578
Apr-19	28	10	20	-10.0000	10.0000	100.0000	0.5000
May-19			10				
Jun-19			14				
Jul-19			9				
Aug-19			10				

TOTAL	406	474	455	-43	141	1717	8
--------------	-----	-----	-----	-----	-----	------	---

ME	MAE	MSE	MAPE
-1.79	5.87	71.53	34.32

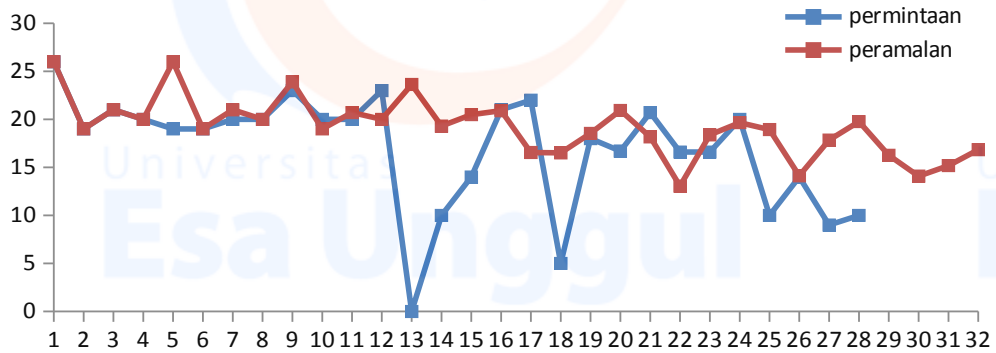
Moving Average



BULAN	PERIODE (t)	PERMINTAAN Y(t)	PERAMALAN Y'(t)	ERROR	Abs. E	E ²	Abs.E / Y(t)
Jan-17	1	26	-	-			
Feb-17	2	19	-	-			
Mar-17	3	21	-	-			
Apr-17	4	20	26	-6.00	6.00	36.00	0.23
May-17	5	19	23	-3.50	3.50	12.25	0.16
Jun-17	6	19	22	-3.00	3.00	9.00	0.14
Jul-17	7	20	22	-1.50	1.50	2.25	0.07
Aug-17	8	20	21	-1.00	1.00	1.00	0.05
Sep-17	9	23	21	2.33	2.33	5.44	0.11
Oct-17	10	20	21	-0.57	0.57	0.33	0.03
Nov-17	11	20	21	-0.50	0.50	0.25	0.02
Dec-17	12	23	21	2.22	2.22	4.94	0.11
Jan-18	13	0	21	-20.70	20.70	428.49	1.00
Feb-18	14	10	21	-10.64	10.64	113.13	0.52
Mar-18	15	14	21	-6.83	6.83	46.69	0.33
Apr-18	16	21	19	1.77	1.77	3.13	0.09
May-18	17	22	19	3.43	3.43	11.76	0.18
Jun-18	18	5	18	-13.27	13.27	176.00	0.73
Jul-18	19	18	18	-0.4375	0.4375	0.1914	0.0237
Aug-18	20	16.7	19	-1.9471	1.9471	3.7910	0.1044
Sep-18	21	20.7	18	2.8111	2.8111	7.9023	0.1571
Oct-18	22	16.6	18	-1.2947	1.2947	1.6763	0.0724
Nov-18	23	16.6	18	-1.2350	1.2350	1.5252	0.0692
Dec-18	24	20	18	2.0286	2.0286	4.1151	0.1129
Jan-19	25	10	18	-7.9091	7.9091	62.5537	0.4416
Feb-19	26	14	18	-3.8522	3.8522	14.8392	0.2158
Mar-19	27	9	18	-8.9417	8.9417	79.9534	0.4984
Apr-19	28	10	18	-7.6240	7.6240	58.1254	0.4326
May-19			17				
Jun-19			17				
Jul-19			17				
Aug-19			17				
TOTAL	406	474	528	-86	115	1085	6

ME	MAE	MSE	MAPE
-3.45	4.61	43.41	23.55

Single Exponential Smoothing



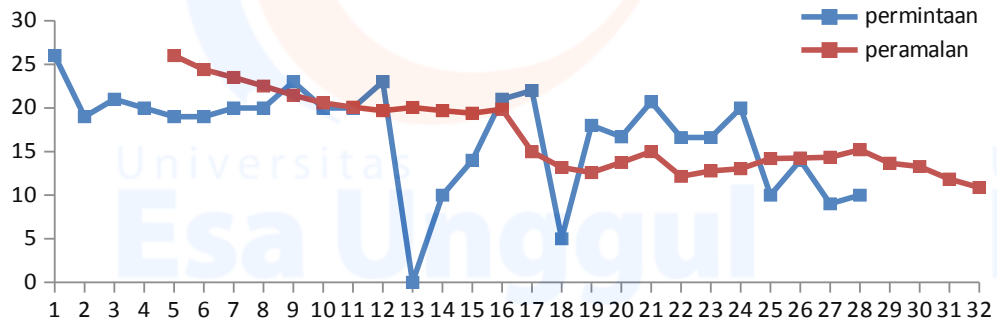
BULAN	PERIODE (t)	PERMINTAAN Y(t)	PERAMALAN Y'(t)	ERROR	Abs. E	E ²	Abs.E / Y(t)
Jan-17	1	26	26.0	0	0	0	0.00
Feb-17	2	19	19.0	0	0	0	0.00
Mar-17	3	21	21.0	0	0	0	0.00
Apr-17	4	20	20.0	0	0	0	0.00
May-17	5	19	26.0	-7	7	49	0.37
Jun-17	6	19	19.0	0	0	0	0.00
Jul-17	7	20	21.0	-1	1	1	0.05
Aug-17	8	20	20.0	0	0	0	0.00
Sep-17	9	23	23.9	-1	1	1	0.04
Oct-17	10	20	19.0	1	1	1	0.05
Nov-17	11	20	20.7	-1	1	0	0.03
Dec-17	12	23	20.0	3	3	9	0.13
Jan-18	13	0	23.6	-24	24	558	
Feb-18	14	10	19.3	-9	9	86	0.93
Mar-18	15	14	20.5	-6	6	42	0.46
Apr-18	16	21	20.9	0	0	0	0.00
May-18	17	22	16.5	5	5	30	0.25
Jun-18	18	5	16.5	-12	12	132	2.30
Jul-18	19	18	18.5	-1	1	0	0.03
Aug-18	20	16.7	20.9	-4	4	18	0.25
Sep-18	21	20.7	18.2	3	3	6	0.12
Oct-18	22	16.6	13.1	4	4	13	0.21
Nov-18	23	16.6	18.4	-2	2	3	0.11
Dec-18	24	20	19.7	0	0	0	0.02
Jan-19	25	10	18.9	-9	9	80	0.89
Feb-19	26	14	14.1	0	0	0	0.01
Mar-19	27	9	17.8	-9	9	78	0.98
Apr-19	28	10	19.8	-10	10	95	0.98
May-19			16.3				
Jun-19			14.1				
Jul-19			15.2				
Aug-19			16.8				

TOTAL	406	474	583	-79	111	1204	8
--------------	-----	-----	-----	-----	-----	------	---

α	0.3
----------	------------

ME	MAE	MSE	MAPE
-2.81	3.95	43.01	30.47

DES Brown



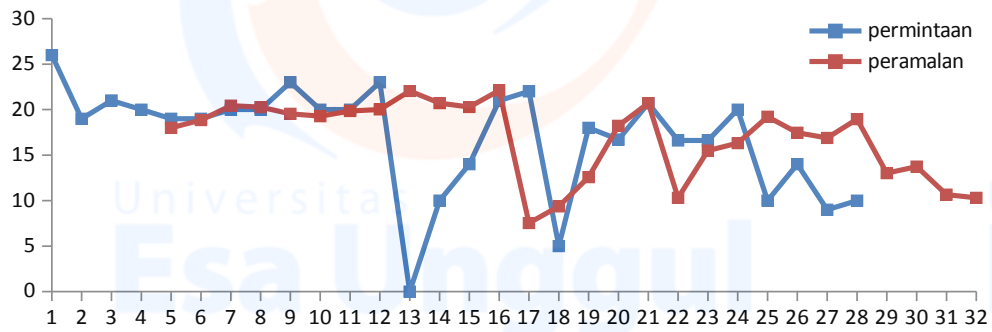
BULAN	PERIODE (t)	PERMINTAAN Y(t)	S't	S''t	S't-S''t	a	b	PERAMALAN Y'(t)	ERROR	Abs. E	E^2	Abs.E / Y(t)
Jan-17	1	26	26	26	0.0	26.0	0.0	-				
Feb-17	2	19	25	26	-0.6	24.7	-0.1	-				
Mar-17	3	21	25	26	-1.0	23.9	-0.1	-				
Apr-17	4	20	24	26	-1.3	23.1	-0.1	-				
May-17	5	19	24	25	-1.7	22.2	-0.2	26.0	-7	7	49	0.37
Jun-17	6	19	23	25	-1.9	21.4	-0.2	24.4	-5	5	29	0.28
Jul-17	7	20	23	25	-2.0	21.0	-0.2	23.5	-3	3	12	0.17
Aug-17	8	20	23	25	-2.1	20.6	-0.2	22.5	-3	3	6	0.13
Sep-17	9	23	23	25	-1.9	20.9	-0.2	21.5	2	2	2	0.07
Oct-17	10	20	22	24	-1.9	20.5	-0.2	20.6	-1	1	0	0.03
Nov-17	11	20	22	24	-2.0	20.3	-0.2	20.1	0	0	0	0.00
Dec-17	12	23	22	24	-1.7	20.6	-0.2	19.7	3	3	11	0.14
Jan-18	13	0	20	24	-3.5	16.5	-0.4	20.1	-20	20	402	
Feb-18	14	10	19	23	-4.1	15.0	-0.5	19.7	-10	10	94	0.97
Mar-18	15	14	19	23	-4.1	14.4	-0.5	19.4	-5	5	29	0.39
Apr-18	16	21	19	22	-3.5	15.3	-0.4	19.9	1	1	1	0.05
May-18	17	22	19	22	-2.9	16.3	-0.3	15.0	7	7	49	0.32
Jun-18	18	5	18	22	-3.8	13.9	-0.4	13.2	-8	8	67	1.63
Jul-18	19	18	18	21	-3.4	14.3	-0.4	12.6	5	5	29	0.30
Aug-18	20	16.7	18	21	-3.2	14.5	-0.4	13.8	3	3	9	0.18
Sep-18	21	20.7	18	21	-2.6	15.4	-0.3	15.0	6	6	33	0.28
Oct-18	22	16.6	18	20	-2.5	15.4	-0.3	12.2	4	4	20	0.27
Nov-18	23	16.6	18	20	-2.3	15.4	-0.3	12.8	4	4	15	0.23
Dec-18	24	20	18	20	-1.9	16.0	-0.2	13.0	7	7	49	0.35
Jan-19	25	10	17	20	-2.4	14.7	-0.3	14.2	-4	4	18	0.42
Feb-19	26	14	17	19	-2.4	14.4	-0.3	14.3	0	0	0	0.02
Mar-19	27	9	16	19	-2.9	13.1	-0.3	14.3	-5	5	29	0.59
Apr-19	28	10	15	19	-3.2	12.3	-0.4	15.2	-5	5	27	0.52
May-19	29							13.7				
Jun-19	30							13.3				
Jul-19	31							11.8				
Aug-19	32							10.9				

TOTAL	465	474	569	635	-67	502	-7	450	-35	120	980	8
--------------	-----	-----	-----	-----	-----	-----	----	-----	-----	-----	-----	---

α	0.1
----------	------------

ME	MAD	MSE	MAPE
-1.46	4.99	40.82	33.53

MDE Holt



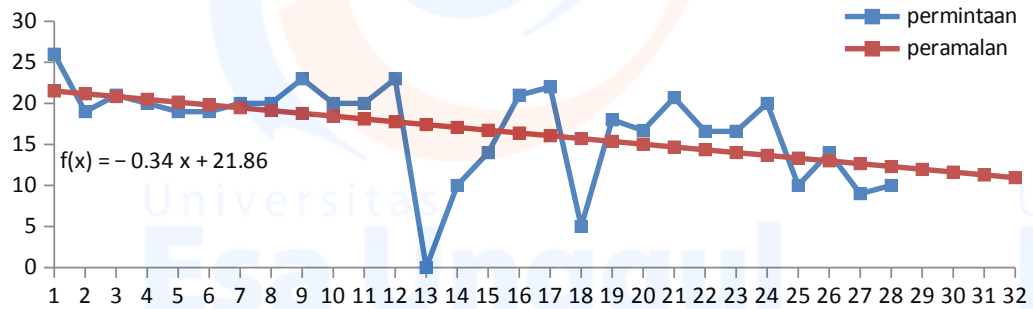
BULAN	PERIODE (t)	PERMINTAAN Y(t)	S (t)	b (t)	PERAMALAN Y'(t)	ERROR	Abs.E	E^2	Abs.E / Y(t)
Jan-17	1	26	26.0	-2.0					
Feb-17	2	19	25.3	-1.6					
Mar-17	3	21	25.1	-1.2					
Apr-17	4	20	24.4	-1.0					
May-17	5	19	23.5	-1.0	18	1	1	1	0.05
Jun-17	6	19	22.9	-0.9	19	0	0	0	0.01
Jul-17	7	20	22.6	-0.7	20	0	0	0	0.02
Aug-17	8	20	22.3	-0.6	20	0	0	0	0.01
Sep-17	9	23	22.9	-0.2	20	3	3	12	0.15
Oct-17	10	20	22.2	-0.4	19	1	1	1	0.04
Nov-17	11	20	21.8	-0.4	20	0	0	0	0.01
Dec-17	12	23	22.4	-0.1	20	3	3	9	0.13
Jan-18	13	0	15.8	-2.1	22	-22	22	486	
Feb-18	14	10	15.5	-1.5	21	-11	11	115	1.07
Mar-18	15	14	16.1	-0.9	20	-6	6	39	0.45
Apr-18	16	21	18.2	0.0	22	-1	1	1	0.05
May-18	17	22	19.3	0.3	8	14	14	209	0.66
Jun-18	18	5	14.8	-1.1	9	-4	4	19	0.87
Jul-18	19	18	16.5	-0.3	13	5	5	29	0.30
Aug-18	20	16.7	16.8	-0.1	18	-2	2	2	0.09
Sep-18	21	20.7	18.0	0.3	21	0	0	0	0.00
Oct-18	22	16.6	17.4	0.0	10	6	6	40	0.38
Nov-18	23	16.6	17.1	-0.1	15	1	1	1	0.07
Dec-18	24	20	18.0	0.2	16	4	4	14	0.18
Jan-19	25	10	15.5	-0.6	19	-9	9	85	0.92
Feb-19	26	14	15.5	-0.4	17	-3	3	12	0.25
Mar-19	27	9	13.8	-0.8	17	-8	8	62	0.88
Apr-19	28	10	13.2	-0.7	19	-9	9	80	0.89
May-19	29				13				
Jun-19	30				14				
Jul-19	31				11				
Aug-19	32				10				

TOTAL	465	474	543	-18	451	-37	116	1218	7
--------------	-----	-----	-----	-----	-----	-----	-----	------	---

$\hat{\alpha}$	0.3
$\hat{\beta}$	0.3

ME	MAD	MSE	MAPE
-1.54	4.82	50.76	32.55

Regresi Linier



BULAN	PERIODE (t)	PERMINTAAN Y(t)	t*Y(t)	t^2	PERAMALAN Y'(t)	ERROR	Abs. E	E^2	Abs.E / Y(t)
Jan-17	1	26	26	1	22	4.48	4.48	20.06	0.21
Feb-17	2	19	38	4	21	-2.18	2.18	4.75	0.10
Mar-17	3	21	63	9	21	0.16	0.16	0.03	0.01
Apr-17	4	20	80	16	20	-0.50	0.50	0.25	0.02
May-17	5	19	95	25	20	-1.16	1.16	1.34	0.06
Jun-17	6	19	114	36	20	-0.82	0.82	0.66	0.04
Jul-17	7	20	140	49	19	0.53	0.53	0.28	0.03
Aug-17	8	20	160	64	19	0.87	0.87	0.75	0.05
Sep-17	9	23	207	81	19	4.21	4.21	17.71	0.22
Oct-17	10	20	200	100	18	1.55	1.55	2.40	0.08
Nov-17	11	20	220	121	18	1.89	1.89	3.58	0.10
Dec-17	12	23	276	144	18	5.23	5.23	27.38	0.29
Jan-18	13	0	0	169	17	-17.43	17.43	303.67	1.00
Feb-18	14	10	140	196	17	-7.08	7.08	50.20	0.41
Mar-18	15	14	210	225	17	-2.74	2.74	7.53	0.16
Apr-18	16	21	336	256	16	4.60	4.60	21.14	0.28
May-18	17	22	374	289	16	5.94	5.94	35.27	0.37
Jun-18	18	5	90	324	16	-10.72	10.72	114.91	0.68
Jul-18	19	18	342	361	15	2.6214	2.6214	6.8719	0.1705
Aug-18	20	16.7	334	400	15	1.6627	1.6627	2.7646	0.1106
Sep-18	21	20.7	434.7	441	15	6.0040	6.0040	36.0476	0.4085
Oct-18	22	16.6	365.2	484	14	2.2452	2.2452	5.0411	0.1564
Nov-18	23	16.6	381.8	529	14	2.5865	2.5865	6.6900	0.1846
Dec-18	24	20	480	576	14	6.3278	6.3278	40.0408	0.4628
Jan-19	25	10	250	625	13	-3.3310	3.3310	11.0952	0.2499
Feb-19	26	14	364	676	13	1.0103	1.0103	1.0207	0.0778
Mar-19	27	9	243	729	13	-3.6484	3.6484	13.3109	0.2884
Apr-19	28	10	280	784	12	-2.3071	2.3071	5.3229	0.1875
May-19					12				
Jun-19					12				
Jul-19					11				
Aug-19					11				

TOTAL	406	474	6244	7714	497	0	104	740	6
--------------	-----	-----	------	------	-----	---	-----	-----	---

b	-0.34	-0.34
a	21.86	21.86

ME	MAE	MSE	MAPE
0.00	3.71	26.43	22.96

Lampiran D Formulasi Model Simulasi Sistem Dinamis

Persediaan dan Biaya Persediaan Ubi Ungu dan Keripik Ubi

Ungu menggunakan Powersim Studio 10

```

mainmodel Component 1 {
  aux Avg LS_0 {
    autotype Real
    autounit Ton/mo
    def RUNAVERAGE('Lost Sales_0')
  }
  aux Avg LS_1 {
    autotype Real
    autounit Ton/mo
    def RUNAVERAGE('Lost Sales_1')
  }
  aux Avg LS_2 {
    autotype Real
    autounit Ton/mo
    def RUNAVERAGE('Lost Sales_2')
  }
  aux Avg LS_3 {
    autotype Real
    autounit Ton/mo
    def RUNAVERAGE('Lost Sales_3')
  }
  aux Avg OS_0 {
    autotype Real
    autounit Ton/mo
    def RUNAVERAGE('Over Stock_0')
  }
  aux Avg OS_1 {
    autotype Real
    autounit Ton/mo
    def RUNAVERAGE('Over Stock_1')
  }
  aux Avg OS_2 {
    autotype Real
    autounit Ton/mo
    def RUNAVERAGE('Over Stock_2')
  }
  aux Avg OS_3 {
    autotype Real
    autounit Ton/mo
    def RUNAVERAGE('Over Stock_3')
  }
  aux Biaya beli bahan baku {
    autotype Real
    def 5000000*Order Ubi Ungu_1*TIMESTEP/1<<Ton>>
  }
  aux Biaya beli bahan baku_0 {
    autotype Real
    def 5000000*Order Ubi Ungu_0*TIMESTEP/1<<Ton>>
  }
  aux Biaya beli bahan baku_2 {
    autotype Real
    def 5000000*Order Ubi Ungu_2*TIMESTEP/1<<Ton>>
  }
  aux Biaya beli bahan baku_3 {
    autotype Real
    def 5000000*Order Ubi Ungu_3*1<<mo>>/1<<Ton>>
  }
  aux Biaya kekurangan {
    autotype Real
    def 48148148*Lost Sales_1*1<<mo>>/1<<Ton>>
  }
  aux Biaya kekurangan_0 {
    autotype Real
    def 48148148*Lost Sales_0*1<<mo>>/1<<Ton>>
  }
  aux Biaya kekurangan_2 {
    autotype Real
    def 48148148*Lost Sales_2*1<<mo>>/1<<Ton>>
  }
  aux Biaya kekurangan_3 {
    autotype Real
    def 48148148*Lost Sales_3*1<<mo>>/1<<Ton>>
  }
  aux Biaya Persediaan_0 {
    autotype Real
    def 'Biaya Simpan_0'+Biaya beli bahan baku_0'+Biaya kekurangan_0'
  }
  aux Biaya Persediaan_1 {
    autotype Real
    def 'Biaya Simpan_1'+Biaya beli bahan baku_1'+Biaya kekurangan_1'
  }
  aux Biaya Persediaan_2 {
    autotype Real
    def 'Biaya Simpan_2'+Biaya beli bahan baku_2'+Biaya kekurangan_2'
  }
  aux Biaya Persediaan_3 {
    autotype Real
    def 'Biaya Simpan_3'+Biaya beli bahan baku_3'+Biaya kekurangan_3'
  }
  aux Biaya Simpan {
    autotype Real
    def 9629630*Stok Keripik_1/1<<Ton>>
  }
  aux Biaya Simpan_0 {
    autotype Real
    def 9629630*Stok Keripik_0/1<<Ton>>
  }
  aux Biaya Simpan_2 {
    autotype Real
    def 9629630*Stok Keripik_2/1<<Ton>>
  }
  aux Biaya Simpan_3 {
    autotype Real
    def 9629630*Stok Keripik_3/1<<Ton>>
  }
  aux Demand {
    autotype Real
    autounit Ton/mo
    def Month_Changes
  }
  aux Demand_0 {
    autotype Real
    autounit Ton/mo
    def Month_Changes
  }
  aux Demand_2 {
    autotype Real
    autounit Ton/mo
    def Month_Changes
  }
  aux Demand_3 {
    autotype Real
    autounit Ton/mo
    def Month_Changes
  }
  const Forecasting {
    type Real
    autounit Ton/mo
    init 5<<Ton/mo>>
    permanent
  }
  aux Inventory Adjustment_2 {
    autotype Real
    autounit Ton/mo
    def Demand_2-Over Stock_2'
  }
  aux Inventory Adjustment_3 {
    autotype Real
    autounit Ton/mo
    def (Demand_3-Over Stock_3)'
  }
  const Lead Time {
    autotype Real
    autounit mo
    init 3<<mo>>
  }
  aux Lost Sales_0 {
    autotype Real
    autounit Ton/mo
    def Demand_0-Sales_0
  }
  aux Lost Sales_1 {
    autotype Real
    autounit Ton/mo
  }
}

```

```

    def Demand-Sales_1
  }
  aux Lost Sales_2 {
    autotype Real
    autounit Ton/mo
    def Demand_2-Sales_2
  }
  aux Lost Sales_3 {
    autotype Real
    autounit Ton/mo
    def Demand_3-Sales_3
  }
  const Month_Changes {
    autotype Real
    autounit Ton/mo
    init 7<<Ton/mo>>
    permanent
  }
  aux Order Ubi Ungu_0 {
    autotype Real
    autounit Ton/mo
    def 'Persediaan Aktual'/Yield_Factor
  }
  aux Order Ubi Ungu_1 {
    autotype Real
    autounit Ton/mo
    def Forecasting/Yield_Factor
  }
  aux Order Ubi Ungu_2 {
    autotype Real
    autounit Ton/mo
    def IF('Inventory Adjustment_2'> 'Reorder Point','Reorder Point', MAX('Inventory Adjustment_2',
      'Safety Stock'))/Yield_Factor
  }
  aux Order Ubi Ungu_3 {
    autotype Real
    autounit Ton/mo
    def IF('Inventory Adjustment_2'+Forecasting > 'Reorder Point',Forecasting, MAX('Inventory Adjustment_3','Safety Stock'))/
      Yield_Factor
  }
  aux Over Stock_0 {
    autotype Real
    autounit Ton/mo
    def 'Stok Keripik_0'/1<<mo>>-Sales_0
  }
  aux Over Stock_1 {
    autotype Real
    autounit Ton/mo
    def 'Stok Keripik_1'/1<<mo>>-Sales_1
  }
  aux Over Stock_2 {
    autotype Real
    autounit Ton/mo
    def 'Stok Keripik_2'/1<<mo>>-Sales_2
  }
  aux Over Stock_3 {
    autotype Real
    autounit Ton/mo
    def ('Stok Keripik_3'/1<<mo>>)-Sales_3
  }
  const Persediaan Aktual {
    type Real
    autounit Ton/mo
    init 5<<Ton/mo>>
    permanent
  }
  const Production_Yield {
    autotype Real
    init 0.3
  }
  aux Produksi_0 {
    autotype Real
    autounit Ton/mo
    def ('Stok Ubi Ungu_0'*Production_Yield)+'Stock bln 2-4'
  }
  aux Produksi_1 {
    autotype Real

```

```

autounit Ton/mo
def ('Stok Ubi Ungu_1'*Production_Yield)+Stock bln 2-4_1'
}
aux Produksi_2 {
  autotype Real
  autounit Ton/mo
  def ('Stok Ubi Ungu_2'*Production_Yield)
}
aux Produksi_3 {
  autotype Real
  autounit Ton/mo
  def 'Stok Ubi Ungu_3'*Production_Yield
}
aux Profit Penjualan_0 {
  autotype Real
  def 48148148*Sales_0*1<<mo>>/1<<Ton>>
}
aux Profit Penjualan_1 {
  autotype Real
  def 48148148*Sales_1*1<<mo>>/1<<Ton>>
}
aux Profit Penjualan_2 {
  autotype Real
  def 48148148*Sales_2*1<<mo>>/1<<Ton>>
}
aux Profit Penjualan_3 {
  autotype Real
  def 48148148*Sales_3*1<<mo>>/1<<Ton>>
}
level Profit_0 {
  type Real
  init 0
  inflow { autodef 'Profit Penjualan_0' }
  outflow { autodef 'Biaya Persediaan_0' }
}
level Profit_1 {
  autotype Real
  init 0
  inflow { autodef 'Profit Penjualan_1' }
  outflow { autodef 'Biaya Persediaan_1' }
}
level Profit_2 {
  type Real
  init 0
  outflow { autodef 'Biaya Persediaan_2' }
  inflow { autodef 'Profit Penjualan_2' }
}
level Profit_3 {
  type Real
  init 0
  outflow { autodef 'Biaya Persediaan_3' }
  inflow { autodef 'Profit Penjualan_3' }
}
aux Reorder Point {
  autotype Real
  autounit Ton/mo
  def 17<<Ton/mo>>+'Safety Stock'
}
aux Safety Stock {
  autotype Real
  autounit Ton/mo
  def 6<<Ton/mo>>*IF('Service Level'=50,0,IF('Service Level'=60,0.253,IF('Service Level'=70,0.524,IF('Service Level'=80,0.842,IF('Service Level'=90,1.282,1.645))))))
}
aux Sales_0 {
  autotype Real
  unit Ton/mo
  def MIN( Demand_0 , 'Stok Keripik_0'/ 1<<mo>> )
}
aux Sales_1 {
  autotype Real
  unit Ton/mo
  def MIN( Demand , 'Stok Keripik_1'/ 1<<mo>> )
}
aux Sales_2 {
  autotype Real
  unit Ton/mo

```

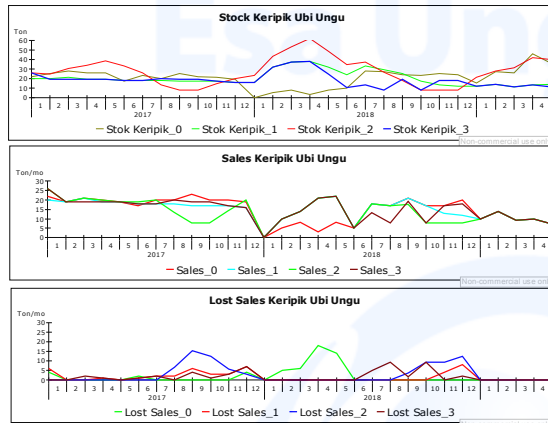
```

    def MIN( Demand_2 , 'Stok Keripik_2'/ 1<<mo>> )
  }
  aux Sales_3 {
    autotype Real
    unit Ton/mo
    def MIN( Demand_3 , 'Stok Keripik_3'/ 1<<mo>> )
  }
  const Service Level {
    autotype Real
    init 80
    permanent
  }
  const Stock bln 2-4 {
    autotype Real
    autounit Ton/mo
    init 0<<Ton/mo>>
    permanent
  }
  const Stock bln 2-4_1 {
    autotype Real
    autounit Ton/mo
    init 0<<Ton/mo>>
    permanent
  }
  level Stok Keripik_0 {
    autotype Real
    autounit Ton
    init 22<<Ton>>
    inflow { autodef Produksi_0 }
    outflow { autodef Sales_0 }
  }
  level Stok Keripik_1 {
    autotype Real
    autounit Ton
    init 20<<Ton>>
    inflow { autodef Produksi_1 }
    outflow { autodef Sales_1 }
  }
  level Stok Keripik_2 {
    autotype Real
    autounit Ton
    init Demand_2*1<<mo>>
    inflow { autodef Produksi_2 }
    outflow { autodef Sales_2 }
  }
  level Stok Keripik_3 {
    autotype Real
    autounit Ton
    init Demand_3*1<<mo>>
    inflow { autodef Produksi_3 }
    outflow { autodef Sales_3 }
  }
  aux Stok Ubi Ungu_0 {
    autotype Real
    autounit Ton/mo
    def DELAYPPL('Order Ubi Ungu_0','Lead Time',0<<Ton/mo>>)
  }
  aux Stok Ubi Ungu_1 {
    autotype Real
    autounit Ton/mo
    def DELAYPPL('Order Ubi Ungu_1','Lead Time',0<<Ton/mo>>)
  }
  aux Stok Ubi Ungu_2 {
    autotype Real
    autounit Ton/mo
    def DELAYPPL('Order Ubi Ungu_2','Lead Time','Order Ubi Ungu_2')
  }
  aux Stok Ubi Ungu_3 {
    autotype Real
    autounit Ton/mo
    def DELAYPPL('Order Ubi Ungu_3','Lead Time','Order Ubi Ungu_3')
  }
  const Yield_Factor {
    autotype Real
    init 0.3
  }
}

```


Lampiran E Hasil Simulasi Sistem Dinamis Persediaan dan Biaya Persediaan Ubi Ungu dan Keripik Ubi Ungu menggunakan Powersim Studio 10

Input Actual Demand



Time	Profit_0	Profit_1	Profit_2	Profit_3
01, 2017	0.00	0.00	0.00	0.00
01, 2017	9,644,444,120.00	4,944,444,160.00	17,698,444,040.00	20,544,444,040.00
01, 2017	24,866,665,980.00	17,611,110,520.00	31,355,643,681.20	33,499,999,300.00
01, 2017	35,611,110,020.00	32,877,776,860.00	47,103,276,583.60	43,566,665,680.00
01, 2017	48,488,887,420.00	44,288,887,680.00	62,302,087,227.20	54,077,776,500.00
01, 2017	55,922,220,380.00	57,844,442,940.00	74,700,886,712.00	66,533,331,760.00
01, 2017	62,677,775,680.00	68,699,998,220.00	88,744,041,815.60	76,388,887,040.00
01, 2017	75,422,219,780.00	78,111,109,060.00	103,056,796,996.80	85,799,997,880.00
01, 2017	89,533,330,580.00	88,022,219,900.00	98,966,307,929.12	100,911,108,680.00
01, 2017	115,533,330,200.00	90,999,997,440.00	74,243,285,655.28	109,088,886,180.00
01, 2017	135,566,663,200.00	98,311,108,300.00	55,353,596,701.44	121,599,997,000.00
01, 2017	154,388,885,100.00	106,123,218,160.00	53,665,807,615.28	129,411,107,860.00
01, 2018	169,066,662,600.00	106,999,996,720.00	60,943,285,095.28	130,288,885,420.00
01, 2018	165,066,662,600.00	94,877,774,320.00	50,452,840,395.28	121,820,663,020.00
01, 2018	158,622,218,100.00	93,077,773,920.00	48,629,062,095.28	123,174,662,620.00
01, 2018	147,699,995,780.00	95,611,106,780.00	49,694,172,555.28	128,861,995,480.00
01, 2018	116,666,662,480.00	107,966,661,820.00	58,270,393,995.28	144,371,550,520.00
01, 2018	98,688,884,640.00	123,999,994,700.00	72,135,593,356.48	159,362,083,481.20
01, 2018	93,022,217,840.00	117,788,883,300.00	65,578,659,618.88	159,738,483,343.60
01, 2018	101,433,328,560.00	127,755,549,520.00	77,021,814,682.48	158,735,083,162.08
01, 2018	110,188,883,740.00	137,933,326,900.00	89,998,392,087.28	145,679,727,528.24
01, 2018	128,088,883,380.00	155,044,437,640.00	94,561,058,498.08	159,547,193,902.08
01, 2018	134,999,994,160.00	168,688,881,820.00	81,504,702,864.24	148,990,838,268.24
01, 2018	145,833,327,140.00	172,433,326,080.00	68,448,347,230.40	162,846,393,548.24
01, 2019	153,288,882,340.00	169,244,437,040.00	49,558,658,276.56	175,257,504,388.24
01, 2019	163,399,993,240.00	174,722,214,640.00	54,090,435,776.56	182,235,281,988.24
01, 2019	175,822,215,100.00	185,899,992,200.00	62,377,768,736.56	191,413,059,548.24
01, 2019	181,311,102,660.00	190,722,214,260.00	62,576,212,796.56	197,389,281,608.24
01, 2019	182,466,658,660.00	196,411,102,960.00	61,041,323,396.56	204,232,170,308.24

Skenario 1

Time	(Ton/mo)			STOCK K&U	(Ton)			
	Order UJ	Stock UJ	Prod		Sales	Dem	OS	LS
Jan 01, 2017	66.67	0.00	25.00	2017 22.00	2017 22.00	26.00	0.00	4.00
Feb 01, 2017	33.33	0.00	22.00	2017 25.00	2017 19.00	19.00	6.00	0.00
Mar 01, 2017	76.67	0.00	19.00	2017 28.00	2017 21.00	21.00	7.00	0.00
Apr 01, 2017	56.67	66.67	20.00	2017 26.00	2017 20.00	20.00	6.00	0.00
May 01, 2017	83.33	33.33	10.00	2017 26.00	2017 19.00	19.00	7.00	0.00
Jun 01, 2017	66.67	76.67	23.00	2017 17.00	2017 17.00	19.00	0.00	2.00
Jul 01, 2017	63.33	56.67	17.00	2017 23.00	2017 20.00	20.00	3.00	0.00
Aug 01, 2017	60.00	83.33	25.00	2017 20.00	2017 20.00	20.00	0.00	0.00
Sep 01, 2017	0.00	66.67	20.00	2017 25.00	2017 23.00	23.00	2.00	0.00
Oct 01, 2017	16.67	63.33	19.00	2017 22.00	2017 20.00	20.00	2.00	0.00
Nov 01, 2017	26.67	60.00	18.00	2017 21.00	2017 20.00	20.00	1.00	0.00
Dec 01, 2017	10.00	0.00	0.00	2017 19.00	2017 19.00	23.00	0.00	4.00
Jan 01, 2018	26.67	16.67	5.00	2018 0.00	2018 0.00	0.00	0.00	0.00
Feb 01, 2018	33.33	26.67	8.00	2018 5.00	2018 5.00	10.00	0.00	5.00
Mar 01, 2018	76.67	10.00	3.00	2018 8.00	2018 8.00	14.00	0.00	6.00
Apr 01, 2018	56.67	26.67	8.00	2018 3.00	2018 3.00	21.00	0.00	18.00
May 01, 2018	46.67	33.33	10.00	2018 8.00	2018 8.00	22.00	0.00	14.00
Jun 01, 2018	66.67	76.67	23.00	2018 10.00	2018 5.00	5.00	5.00	0.00
Jul 01, 2018	63.33	56.67	17.00	2018 28.00	2018 18.00	18.00	10.00	0.00
Aug 01, 2018	53.33	46.67	14.00	2018 27.00	2018 17.00	17.00	10.00	0.00
Sep 01, 2018	36.67	66.67	20.00	2018 24.00	2018 21.00	21.00	3.00	0.00
Oct 01, 2018	73.33	63.33	19.00	2018 23.00	2018 17.00	17.00	6.00	0.00
Nov 01, 2018	43.33	53.33	16.00	2018 25.00	2018 17.00	17.00	8.00	0.00
Dec 01, 2018	96.67	36.67	11.00	2018 24.00	2018 20.00	20.00	4.00	0.00
Jan 01, 2019	0.00	73.33	22.00	2019 15.00	2019 10.00	10.00	5.00	0.00
Feb 01, 2019	0.00	43.33	13.00	2019 27.00	2019 14.00	14.00	13.00	0.00
Mar 01, 2019	0.00	96.67	29.00	2019 26.00	2019 9.00	9.00	17.00	0.00
Apr 01, 2019	0.00	0.00	0.00	2019 46.00	2019 10.00	10.00	36.00	0.00
May 01, 2019	?	0.00	0.00	2019 36.00	2019 7.00	7.00	29.00	0.00

Skenario 2

Time	(Ton/mo)			(Ton)	(Ton/mo)			
	Order UU	Stock UU	Prod		Sales	Demand	OS	LS
Jan 01, 2017	63.33	0.00	20.00	2017 20.00	20120.00	26.00	0.00	6.00
Feb 01, 2017	60.00	0.00	20.00	2017 20.00	20119.00	19.00	1.00	0.00
Mar 01, 2017	60.00	0.00	19.00	2017 21.00	20121.00	21.00	0.00	0.00
Apr 01, 2017	60.00	63.33	19.00	2017 19.00	20119.00	20.00	0.00	1.00
May 01, 2017	56.67	60.00	18.00	2017 19.00	20119.00	19.00	0.00	0.00
Jun 01, 2017	56.67	60.00	18.00	2017 18.00	20118.00	19.00	0.00	1.00
Jul 01, 2017	56.67	60.00	18.00	2017 18.00	20118.00	20.00	0.00	2.00
Aug 01, 2017	53.33	56.67	17.00	2017 18.00	20118.00	20.00	0.00	2.00
Sep 01, 2017	53.33	56.67	17.00	2017 17.00	20117.00	23.00	0.00	6.00
Oct 01, 2017	53.33	56.67	17.00	2017 17.00	20117.00	20.00	0.00	3.00
Nov 01, 2017	50.00	53.33	16.00	2017 17.00	20117.00	20.00	0.00	3.00
Dec 01, 2017	50.00	53.33	16.00	2017 16.00	20116.00	23.00	0.00	7.00
Jan 01, 2018	50.00	53.33	16.00	2018 16.00	20180.00	0.00	16.00	0.00
Feb 01, 2018	46.67	50.00	15.00	2018 32.00	20180.00	10.00	22.00	0.00
Mar 01, 2018	46.67	50.00	15.00	2018 37.00	20184.00	14.00	23.00	0.00
Apr 01, 2018	46.67	50.00	15.00	2018 38.00	20181.00	21.00	17.00	0.00
May 01, 2018	43.33	46.67	14.00	2018 32.00	20182.00	22.00	10.00	0.00
Jun 01, 2018	43.33	46.67	14.00	2018 24.00	20185.00	5.00	19.00	0.00
Jul 01, 2018	43.33	46.67	14.00	2018 33.00	20188.00	18.00	15.00	0.00
Aug 01, 2018	40.00	43.33	13.00	2018 29.00	20187.00	17.00	12.00	0.00
Sep 01, 2018	40.00	43.33	13.00	2018 25.00	20181.00	21.00	4.00	0.00
Oct 01, 2018	40.00	43.33	13.00	2018 17.00	20187.00	17.00	0.00	0.00
Nov 01, 2018	36.67	40.00	12.00	2018 13.00	20183.00	17.00	0.00	4.00
Dec 01, 2018	36.67	40.00	12.00	2018 12.00	20182.00	20.00	0.00	8.00
Jan 01, 2019	36.67	40.00	12.00	2019 12.00	20190.00	10.00	2.00	0.00
Feb 01, 2019	33.33	36.67	11.00	2019 14.00	20194.00	14.00	0.00	0.00
Mar 01, 2019	33.33	36.67	11.00	2019 11.00	20199.00	9.00	2.00	0.00
Apr 01, 2019	33.33	36.67	11.00	2019 13.00	20190.00	10.00	3.00	0.00
May 01, 2019	?	33.33	?	2019 14.00	20197.00	7.00	7.00	0.00

(Non-commercial use only)

(Non-commercial use only)

Skenario 3

Time	(Ton/mo)				(Ton)	(Ton/mo)			
	Inv Adj	Order UU	Stock UU	Prod		Stok Keripik 2	Sales 2	Demand 2	OS
Jan 01, 2017	26.00	82.31	82.31	24.69	2017 26.00	20126.00	26.00	0.00	0.00
Feb 01, 2017	13.31	44.36	82.31	24.69	2017 24.69	20119.00	19.00	5.69	0.00
Mar 01, 2017	11.62	38.72	82.31	24.69	2017 30.38	20121.00	21.00	9.38	0.00
Apr 01, 2017	5.92	25.64	82.31	24.69	2017 34.08	20120.00	20.00	14.08	0.00
May 01, 2017	-0.77	25.64	44.36	13.31	2017 38.77	20119.00	19.00	19.77	0.00
Jun 01, 2017	4.92	25.64	38.72	11.62	2017 33.08	20119.00	19.00	14.08	0.00
Jul 01, 2017	14.31	47.69	25.64	7.69	2017 25.69	20120.00	20.00	5.69	0.00
Aug 01, 2017	20.00	66.67	25.64	7.69	2017 13.38	20113.38	20.00	0.00	6.62
Sep 01, 2017	23.00	76.67	25.64	7.69	2017 7.69	20117.69	23.00	0.00	15.31
Oct 01, 2017	20.00	66.67	47.69	14.31	2017 7.69	20117.69	20.00	0.00	12.31
Nov 01, 2017	20.00	66.67	66.67	20.00	2017 14.31	20114.31	20.00	0.00	5.69
Dec 01, 2017	23.00	76.67	76.67	23.00	2017 20.00	20120.00	23.00	0.00	3.00
Jan 01, 2018	-23.00	25.64	66.67	20.00	2018 23.00	20180.00	0.00	23.00	0.00
Feb 01, 2018	-23.00	25.64	66.67	20.00	2018 43.00	20180.00	10.00	33.00	0.00
Mar 01, 2018	-25.00	25.64	76.67	23.00	2018 53.00	20184.00	14.00	39.00	0.00
Apr 01, 2018	-20.00	25.64	25.64	7.69	2018 62.00	20181.00	21.00	41.00	0.00
May 01, 2018	-4.69	25.64	25.64	7.69	2018 48.69	20182.00	22.00	26.69	0.00
Jun 01, 2018	-24.38	25.64	25.64	7.69	2018 34.38	20185.00	5.00	29.38	0.00
Jul 01, 2018	-1.08	25.64	25.64	7.69	2018 37.08	20188.00	18.00	19.08	0.00
Aug 01, 2018	7.23	25.64	25.64	7.69	2018 26.77	20187.00	17.00	9.77	0.00
Sep 01, 2018	17.00	70.00	25.64	7.69	2018 17.46	20187.46	21.00	0.00	9.54
Oct 01, 2018	17.00	56.67	25.64	7.69	2018 7.69	20187.69	17.00	0.00	9.31
Nov 01, 2018	17.00	56.67	25.64	7.69	2018 7.69	20187.69	17.00	0.00	9.31
Dec 01, 2018	20.00	66.67	70.00	21.00	2018 7.69	20187.69	20.00	0.00	12.31
Jan 01, 2019	-1.00	25.64	56.67	17.00	2019 21.00	20190.00	10.00	11.00	0.00
Feb 01, 2019	0.00	25.64	56.67	17.00	2019 28.00	20194.00	14.00	14.00	0.00
Mar 01, 2019	-13.00	25.64	66.67	20.00	2019 31.00	20199.00	9.00	22.00	0.00
Apr 01, 2019	-22.00	25.64	25.64	7.69	2019 42.00	20190.00	10.00	32.00	0.00
May 01, 2019	-25.69	25.64	25.64	7.69	2019 39.69	20197.00	7.00	32.69	0.00

(Non-commercial use only)

(Non-commercial use only)

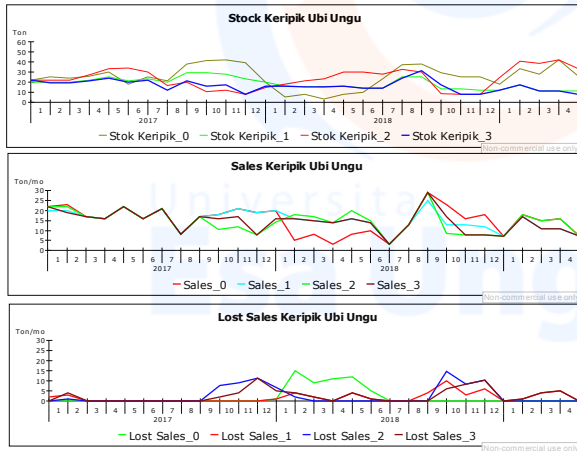
Skenario 4

Time	(Ton/mo)				(Ton)	(Ton/mo)			
	InvAdj	Order UU	Stock UU	Prod UU		Stok Keripik 3	Sales 3	Demand 3	OS
Jan 01, 2017	26.00	63.33	63.33	19.00	2017 26.00	20126.00	26.00	0.00	0.00
Feb 01, 2017	19.00	60.00	63.33	19.00	2017 19.00	20119.00	19.00	0.00	0.00
Mar 01, 2017	21.00	60.00	63.33	19.00	2017 19.00	20119.00	21.00	0.00	2.00
Apr 01, 2017	20.00	66.67	63.33	19.00	2017 19.00	20119.00	20.00	0.00	1.00
May 01, 2017	19.00	63.33	60.00	18.00	2017 19.00	20119.00	19.00	0.00	0.00
Jun 01, 2017	19.00	63.33	60.00	18.00	2017 18.00	20118.00	19.00	0.00	1.00
Jul 01, 2017	20.00	56.67	66.67	20.00	2017 18.00	20118.00	20.00	0.00	2.00
Aug 01, 2017	20.00	53.33	63.33	19.00	2017 20.00	20120.00	20.00	0.00	0.00
Sep 01, 2017	23.00	53.33	63.33	19.00	2017 19.00	20119.00	23.00	0.00	4.00
Oct 01, 2017	20.00	53.33	56.67	17.00	2017 19.00	20119.00	20.00	0.00	1.00
Nov 01, 2017	20.00	50.00	53.33	16.00	2017 17.00	20117.00	20.00	0.00	3.00
Dec 01, 2017	23.00	50.00	53.33	16.00	2017 16.00	20116.00	23.00	0.00	7.00
Jan 01, 2018	-16.00	25.64	53.33	16.00	2018 16.00	20180.00	0.00	16.00	0.00
Feb 01, 2018	-12.00	25.64	50.00	15.00	2018 32.00	20180.00	10.00	22.00	0.00
Mar 01, 2018	-9.00	25.64	50.00	15.00	2018 37.00	20184.00	14.00	23.00	0.00
Apr 01, 2018	4.00	25.64	25.64	7.69	2018 38.00	20181.00	21.00	17.00	0.00
May 01, 2018	19.31	64.36	25.64	7.69	2018 24.69	20182.00	22.00	2.69	0.00
Jun 01, 2018	-0.38	25.64	25.64	7.69	2018 10.38	20185.00	5.00	5.38	0.00
Jul 01, 2018	19.00	60.00	25.64	7.69	2018 13.08	20183.08	18.00	0.00	4.92
Aug 01, 2018	17.00	56.67	64.36	19.31	2018 7.69	20187.69	17.00	0.00	9.31
Sep 01, 2018	21.00	40.00	25.64	7.69	2018 19.31	20189.31	21.00	0.00	1.69
Oct 01, 2018	17.00	40.00	60.00	18.00	2018 7.69	20187.69	17.00	0.00	9.31
Nov 01, 2018	16.00	36.67	56.67	17.00	2018 18.00	20187.00	17.00	1.00	0.00
Dec 01, 2018	20.00	36.67	40.00	12.00	2018 18.00	20188.00	20.00	0.00	2.00
Jan 01, 2019	8.00	26.67	40.00	12.00	2019 12.00	20190.00	10.00	2.00	0.00
Feb 01, 2019	14.00	46.67	36.67	11.00	2019 14.00	20194.00	14.00	0.00	0.00
Mar 01, 2019	7.00	25.64	36.67	11.00	2019 11.00	20199.00	9.00	2.00	0.00
Apr 01, 2019	7.00	25.64	26.67	8.00	2019 13.00	20190.00	10.00	3.00	0.00
May 01, 2019	3.00	?	46.67	14.00	2019 11.00	20197.00	7.00	4.00	0.00

(Non-commercial use only)

(Non-commercial use only)

Input Random Number 1



Time	Profit_0	Profit_1	Profit_2	Profit_3
01, 2017	0.00	0.00	0.00	0.00
01, 2017	15,422,221,880.00	10,722,221,920.00	14,422,221,880.00	15,922,221,880.00
01, 2017	36,422,221,500.00	20,499,999,400.00	26,899,999,320.00	23,099,999,380.00
01, 2017	42,544,443,380.00	30,277,776,880.00	39,099,999,000.00	33,166,665,760.00
01, 2017	49,644,443,020.00	38,033,332,120.00	50,565,109,740.00	44,711,109,900.00
01, 2017	60,255,553,700.00	54,088,887,300.00	67,309,553,720.00	61,055,553,980.00
01, 2017	68,166,664,540.00	62,633,331,440.00	76,752,442,160.00	72,388,887,020.00
01, 2017	81,777,775,280.00	77,822,219,980.00	92,419,108,400.00	87,866,664,460.00
01, 2017	78,266,663,900.00	75,599,997,500.00	95,306,530,401.20	92,109,553,180.00
01, 2017	91,844,441,180.00	83,777,774,880.00	107,019,285,662.40	102,598,441,760.00
01, 2017	103,499,996,200.00	93,399,996,700.00	99,017,685,534.72	110,198,441,520.00
01, 2017	117,699,995,640.00	108,144,440,740.00	89,384,352,054.72	116,565,107,940.00
01, 2018	132,377,772,900.00	121,444,440,400.00	72,439,107,540.88	101,619,863,426.16
01, 2018	150,044,439,260.00	135,611,106,760.00	68,806,574,014.72	105,386,529,866.16
01, 2018	129,155,550,360.00	141,322,217,640.00	76,717,684,854.72	111,097,640,746.16
01, 2018	113,899,994,720.00	148,766,661,860.00	88,706,573,434.72	118,542,084,966.16
01, 2018	92,977,772,500.00	157,655,550,520.00	98,438,350,894.72	127,930,973,626.16
01, 2018	77,888,883,540.00	163,866,661,400.00	113,660,572,694.72	130,642,084,506.16
01, 2018	72,222,216,740.00	172,099,994,520.00	122,814,572,294.72	137,875,417,626.16
01, 2018	60,411,105,360.00	165,888,883,240.00	115,213,016,414.72	134,318,306,346.16
01, 2018	60,499,993,780.00	171,444,438,460.00	120,700,438,215.92	142,316,750,466.16
01, 2018	85,911,104,340.00	188,555,549,200.00	141,665,637,757.12	169,250,083,326.16
01, 2018	99,755,548,360.00	183,133,326,820.00	118,741,815,469.44	174,227,860,866.16
01, 2018	109,144,436,900.00	188,322,215,520.00	107,629,904,275.60	165,615,949,672.32
01, 2019	113,422,214,320.00	188,022,215,360.00	92,629,104,201.76	154,115,149,598.48
01, 2019	118,333,325,200.00	189,166,659,640.00	91,760,970,562.96	156,913,593,878.48
01, 2019	134,799,991,420.00	202,366,659,380.00	102,159,503,364.16	166,113,593,618.48
01, 2019	148,377,768,820.00	204,299,992,560.00	108,802,480,645.36	165,546,926,798.48
01, 2019	159,355,546,060.00	204,788,881,300.00	116,023,235,666.56	163,035,815,538.48

Skenario 1

Time	(Ton/mo)			(Ton)	(Ton/mo)			
	Order UU	Stock UU	Prod		STOCK KUU	Sales	Dem	OS
Jan 01, 2017	66.67	0.00	25.00	2017 22.00	2017 22.00	22.00	0.00	0.00
Feb 01, 2017	33.33	0.00	22.00	2017 25.00	2017 23.00	23.00	2.00	0.00
Mar 01, 2017	76.67	0.00	19.00	2017 24.00	2017 17.00	17.00	7.00	0.00
Apr 01, 2017	56.67	66.67	20.00	2017 26.00	2017 16.00	16.00	10.00	0.00
May 01, 2017	83.33	33.33	10.00	2017 30.00	2017 22.00	22.00	8.00	0.00
Jun 01, 2017	66.67	76.67	23.00	2017 18.00	2017 16.00	16.00	2.00	0.00
Jul 01, 2017	63.33	56.67	17.00	2017 25.00	2017 21.00	21.00	4.00	0.00
Aug 01, 2017	60.00	83.33	25.00	2017 21.00	2017 8.00	8.00	13.00	0.00
Sep 01, 2017	0.00	66.67	20.00	2017 38.00	2017 17.00	17.00	21.00	0.00
Oct 01, 2017	16.67	63.33	19.00	2017 41.00	2017 18.00	18.00	23.00	0.00
Nov 01, 2017	26.67	60.00	18.00	2017 42.00	2017 21.00	21.00	21.00	0.00
Dec 01, 2017	10.00	0.00	0.00	2017 39.00	2017 19.00	19.00	20.00	0.00
Jan 01, 2018	26.67	16.67	5.00	2018 20.00	2018 20.00	21.00	0.00	1.00
Feb 01, 2018	33.33	26.67	8.00	2018 5.00	2018 5.00	20.00	0.00	15.00
Mar 01, 2018	76.67	10.00	3.00	2018 8.00	2018 8.00	17.00	0.00	9.00
Apr 01, 2018	56.67	26.67	8.00	2018 3.00	2018 3.00	14.00	0.00	11.00
May 01, 2018	46.67	33.33	10.00	2018 8.00	2018 8.00	20.00	0.00	12.00
Jun 01, 2018	66.67	76.67	23.00	2018 10.00	2018 10.00	15.00	0.00	5.00
Jul 01, 2018	63.33	56.67	17.00	2018 23.00	2018 3.00	3.00	20.00	0.00
Aug 01, 2018	53.33	46.67	14.00	2018 37.00	2018 13.00	13.00	24.00	0.00
Sep 01, 2018	36.67	66.67	20.00	2018 38.00	2018 29.00	29.00	9.00	0.00
Oct 01, 2018	73.33	63.33	19.00	2018 29.00	2018 23.00	23.00	6.00	0.00
Nov 01, 2018	43.33	53.33	16.00	2018 25.00	2018 16.00	16.00	9.00	0.00
Dec 01, 2018	96.67	36.67	11.00	2018 25.00	2018 18.00	18.00	7.00	0.00
Jan 01, 2019	0.00	73.33	22.00	2019 18.00	2019 7.00	7.00	11.00	0.00
Feb 01, 2019	0.00	43.33	13.00	2019 33.00	2019 18.00	18.00	15.00	0.00
Mar 01, 2019	0.00	96.67	29.00	2019 28.00	2019 15.00	15.00	13.00	0.00
Apr 01, 2019	0.00	0.00	0.00	2019 42.00	2019 16.00	16.00	26.00	0.00
May 01, 2019	?	0.00	0.00	2019 26.00	2019 7.00	7.00	19.00	0.00

Skenario 2

Time	(Ton/mo)				(Ton)	(Ton/mo)			
	Order UU	Stock UU	Prod		Stock KUU	Sales	Demand	OS	LS
Jan 01, 2017	63.33	0.00	20.00		2017 20.00	20120.00	22.00	0.00	2.00
Feb 01, 2017	60.00	0.00	20.00		2017 20.00	20120.00	23.00	0.00	3.00
Mar 01, 2017	60.00	0.00	19.00		2017 20.00	20177.00	17.00	3.00	0.00
Apr 01, 2017	60.00	63.33	19.00		2017 22.00	20116.00	16.00	6.00	0.00
May 01, 2017	56.67	60.00	18.00		2017 25.00	20122.00	22.00	3.00	0.00
Jun 01, 2017	56.67	60.00	18.00		2017 21.00	20116.00	16.00	5.00	0.00
Jul 01, 2017	56.67	60.00	18.00		2017 23.00	20121.00	21.00	2.00	0.00
Aug 01, 2017	53.33	56.67	17.00		2017 20.00	20178.00	8.00	12.00	0.00
Sep 01, 2017	53.33	56.67	17.00		2017 29.00	20177.00	17.00	12.00	0.00
Oct 01, 2017	53.33	56.67	17.00		2017 29.00	20178.00	18.00	11.00	0.00
Nov 01, 2017	50.00	53.33	16.00		2017 28.00	20121.00	21.00	7.00	0.00
Dec 01, 2017	50.00	53.33	16.00		2017 23.00	20179.00	19.00	4.00	0.00
Jan 01, 2018	50.00	53.33	16.00		2018 20.00	20180.00	21.00	0.00	1.00
Feb 01, 2018	46.67	50.00	15.00		2018 16.00	20186.00	20.00	0.00	4.00
Mar 01, 2018	46.67	50.00	15.00		2018 15.00	20185.00	17.00	0.00	2.00
Apr 01, 2018	46.67	50.00	15.00		2018 15.00	20184.00	14.00	1.00	0.00
May 01, 2018	43.33	46.67	14.00		2018 16.00	20186.00	20.00	0.00	4.00
Jun 01, 2018	43.33	46.67	14.00		2018 14.00	20184.00	15.00	0.00	1.00
Jul 01, 2018	43.33	46.67	14.00		2018 14.00	20183.00	3.00	11.00	0.00
Aug 01, 2018	40.00	43.33	13.00		2018 25.00	20183.00	13.00	12.00	0.00
Sep 01, 2018	40.00	43.33	13.00		2018 25.00	20185.00	29.00	0.00	4.00
Oct 01, 2018	40.00	43.33	13.00		2018 13.00	20183.00	23.00	0.00	10.00
Nov 01, 2018	36.67	40.00	12.00		2018 13.00	20183.00	16.00	0.00	3.00
Dec 01, 2018	36.67	40.00	12.00		2018 12.00	20182.00	18.00	0.00	6.00
Jan 01, 2019	36.67	40.00	12.00		2019 12.00	20197.00	7.00	5.00	0.00
Feb 01, 2019	33.33	36.67	11.00		2019 17.00	20197.00	18.00	0.00	1.00
Mar 01, 2019	33.33	36.67	11.00		2019 11.00	20191.00	15.00	0.00	4.00
Apr 01, 2019	33.33	36.67	11.00		2019 11.00	20191.00	16.00	0.00	5.00
May 01, 2019	?	33.33	?		2019 11.00	20197.00	7.00	4.00	0.00

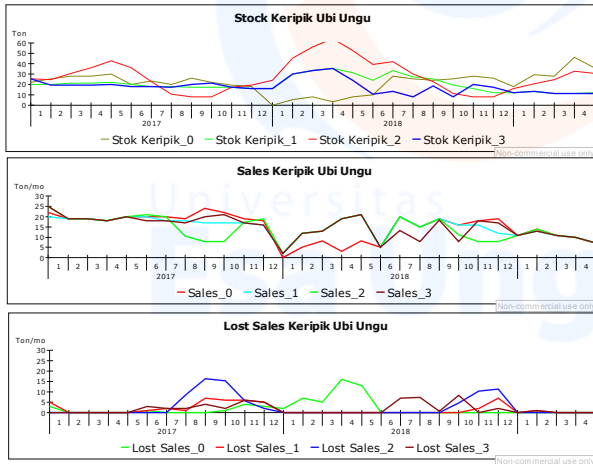
Skenario 3

Time	(Ton/mo)				(Ton)	(Ton/mo)			
	Inv. Adj	Order UU	Stock UU	Prod	Stok Kerpiik_2	Sales_2	Demand_2	OS	LS
Jan 01, 2017	22.00	73.33	73.33	22.00	2017 22.00	20122.00	22.00	0.00	0.00
Feb 01, 2017	23.00	76.67	73.33	22.00	2017 22.00	20122.00	23.00	0.00	1.00
Mar 01, 2017	12.00	40.00	73.33	22.00	2017 22.00	20177.00	17.00	5.00	0.00
Apr 01, 2017	5.00	25.64	73.33	22.00	2017 27.00	20126.00	16.00	11.00	0.00
May 01, 2017	11.00	36.67	76.67	23.00	2017 33.00	20122.00	22.00	11.00	0.00
Jun 01, 2017	-2.00	25.64	40.00	12.00	2017 34.00	20126.00	16.00	18.00	0.00
Jul 01, 2017	12.00	40.00	25.64	7.69	2017 30.00	20121.00	21.00	9.00	0.00
Aug 01, 2017	-0.69	25.64	36.67	11.00	2017 16.69	20178.00	8.00	8.69	0.00
Sep 01, 2017	14.31	47.69	25.64	7.69	2017 19.69	20177.00	17.00	2.69	0.00
Oct 01, 2017	18.00	60.00	40.00	12.00	2017 10.38	20170.38	18.00	0.00	7.62
Nov 01, 2017	21.00	70.00	25.64	7.69	2017 12.00	20122.00	21.00	0.00	9.00
Dec 01, 2017	19.00	63.33	47.69	14.31	2017 7.69	20177.69	19.00	0.00	11.31
Jan 01, 2018	21.00	70.00	60.00	18.00	2018 14.31	20184.31	21.00	0.00	6.69
Feb 01, 2018	20.00	66.67	70.00	21.00	2018 18.00	20188.00	20.00	0.00	2.00
Mar 01, 2018	13.00	43.33	63.33	19.00	2018 21.00	20187.00	17.00	4.00	0.00
Apr 01, 2018	5.00	25.64	70.00	21.00	2018 23.00	20184.00	14.00	9.00	0.00
May 01, 2018	10.00	33.33	66.67	20.00	2018 30.00	20180.00	20.00	10.00	0.00
Jun 01, 2018	0.00	25.64	43.33	13.00	2018 30.00	20185.00	15.00	15.00	0.00
Jul 01, 2018	-22.00	25.64	25.64	7.69	2018 28.00	20183.00	3.00	25.00	0.00
Aug 01, 2018	-6.69	25.64	33.33	10.00	2018 32.69	20183.00	13.00	19.69	0.00
Sep 01, 2018	28.31	82.31	25.64	7.69	2018 29.69	20189.00	29.00	0.69	0.00
Oct 01, 2018	23.00	76.67	25.64	7.69	2018 8.38	20188.38	23.00	0.00	14.62
Nov 01, 2018	16.00	53.33	25.64	7.69	2018 7.69	20187.69	16.00	0.00	8.31
Dec 01, 2018	18.00	60.00	82.31	24.69	2018 7.69	20187.69	18.00	0.00	10.31
Jan 01, 2019	-10.69	25.64	76.67	23.00	2019 24.69	20197.00	7.00	17.69	0.00
Feb 01, 2019	-4.69	25.64	53.33	16.00	2019 40.69	20198.00	18.00	22.69	0.00
Mar 01, 2019	-8.69	25.64	60.00	18.00	2019 38.69	20195.00	15.00	23.69	0.00
Apr 01, 2019	-9.69	25.64	25.64	7.69	2019 41.69	20196.00	16.00	25.69	0.00
May 01, 2019	-19.38	25.64	25.64	7.69	2019 33.38	20197.00	7.00	26.38	0.00

Skenario 4

Time	(Ton/mo)				(Ton)	(Ton/mo)			
	InvAdj	Order UU	Stock UU	Prod UU	Stok Kerpiik_3	Sales_3	Demand_3	OS	LS
Jan 01, 2017	22.00	63.33	63.33	19.00	2017 22.00	20122.00	22.00	0.00	0.00
Feb 01, 2017	23.00	60.00	63.33	19.00	2017 19.00	20119.00	23.00	0.00	4.00
Mar 01, 2017	15.00	60.00	63.33	19.00	2017 19.00	20117.00	17.00	2.00	0.00
Apr 01, 2017	11.00	36.67	63.33	19.00	2017 21.00	20176.00	16.00	5.00	0.00
May 01, 2017	20.00	56.67	60.00	18.00	2017 24.00	20122.00	22.00	2.00	0.00
Jun 01, 2017	12.00	40.00	60.00	18.00	2017 20.00	20176.00	16.00	4.00	0.00
Jul 01, 2017	20.00	56.67	36.67	11.00	2017 22.00	20121.00	21.00	1.00	0.00
Aug 01, 2017	4.00	25.64	56.67	17.00	2017 12.00	20178.00	8.00	4.00	0.00
Sep 01, 2017	13.00	53.33	40.00	12.00	2017 21.00	20177.00	17.00	4.00	0.00
Oct 01, 2017	18.00	53.33	56.67	17.00	2017 16.00	20176.00	18.00	0.00	2.00
Nov 01, 2017	21.00	50.00	25.64	7.69	2017 17.00	20177.00	21.00	0.00	4.00
Dec 01, 2017	19.00	50.00	53.33	16.00	2017 7.69	20177.69	19.00	0.00	11.31
Jan 01, 2018	21.00	60.00	53.33	16.00	2018 16.00	20186.00	21.00	0.00	5.00
Feb 01, 2018	20.00	46.67	50.00	15.00	2018 16.00	20186.00	20.00	0.00	4.00
Mar 01, 2018	17.00	46.67	50.00	15.00	2018 15.00	20185.00	17.00	0.00	2.00
Apr 01, 2018	13.00	43.33	50.00	15.00	2018 15.00	20184.00	14.00	1.00	0.00
May 01, 2018	20.00	66.67	46.67	14.00	2018 16.00	20186.00	20.00	0.00	4.00
Jun 01, 2018	15.00	50.00	46.67	14.00	2018 14.00	20184.00	15.00	0.00	1.00
Jul 01, 2018	-8.00	25.64	43.33	13.00	2018 14.00	20183.00	3.00	11.00	0.00
Aug 01, 2018	2.00	25.64	66.67	20.00	2018 24.00	20183.00	13.00	11.00	0.00
Sep 01, 2018	27.00	40.00	50.00	15.00	2018 31.00	20189.00	29.00	2.00	0.00
Oct 01, 2018	23.00	40.00	25.64	7.69	2018 17.00	20187.00	23.00	0.00	6.00
Nov 01, 2018	16.00	36.67	25.64	7.69	2018 7.69	20187.69	16.00	0.00	8.31
Dec 01, 2018	18.00	36.67	40.00	12.00	2018 7.69	20187.69	18.00	0.00	10.31
Jan 01, 2019	2.00	25.64	40.00	12.00	2019 12.00	20197.00	7.00	5.00	0.00
Feb 01, 2019	18.00	60.00	36.67	11.00	2019 17.00	20197.00	18.00	0.00	1.00
Mar 01, 2019	15.00	50.00	36.67	11.00	2019 11.00	20191.00	15.00	0.00	4.00
Apr 01, 2019	16.00	53.33	25.64	7.69	2019 11.00	20191.00	16.00	0.00	5.00
May 01, 2019	6.31	?	60.00	18.00	2019 7.69	20197.00	7.00	0.69	0.00

Input Random Number 2



Time	Profit_0	Profit_1	Profit_2	Profit_3
01, 2017	0.00	0.00	0.00	0.00
01, 2017	11,088,888,560.00	6,388,888,600.00	16,542,888,500.00	19,388,888,500.00
01, 2017	26,311,110,420.00	19,055,554,960.00	30,200,088,141.20	32,344,443,760.00
01, 2017	34,166,665,580.00	31,433,332,420.00	45,020,932,163.60	45,299,999,020.00
01, 2017	43,577,776,300.00	42,366,665,440.00	56,752,976,127.20	57,311,109,840.00
01, 2017	51,299,998,100.00	56,399,998,440.00	69,440,664,452.00	70,422,220,640.00
01, 2017	62,966,664,460.00	69,566,664,800.00	85,506,041,735.60	76,388,887,040.00
01, 2017	75,711,108,560.00	78,977,775,640.00	99,201,508,060.40	85,799,997,880.00
01, 2017	88,377,774,920.00	90,333,330,920.00	89,453,063,491.20	94,555,553,180.00
01, 2017	115,533,330,080.00	91,866,664,020.00	62,785,596,777.36	103,888,886,220.00
01, 2017	137,011,107,520.00	94,844,441,560.00	38,062,574,503.52	117,266,663,680.00
01, 2017	149,188,885,020.00	98,322,219,100.00	38,143,552,038.88	120,744,441,220.00
01, 2018	164,155,551,420.00	102,088,885,540.00	46,710,218,418.88	124,511,107,660.00
01, 2018	157,266,662,540.00	92,855,552,020.00	38,819,773,698.88	118,931,774,140.00
01, 2018	147,933,329,160.00	94,522,218,300.00	39,307,106,478.88	123,752,440,420.00
01, 2018	138,455,551,280.00	96,766,662,320.00	38,061,105,798.88	129,150,884,440.00
01, 2018	110,311,106,860.00	107,099,995,180.00	43,170,660,558.88	142,638,217,300.00
01, 2018	93,777,773,460.00	121,977,772,520.00	54,435,859,880.08	156,973,194,721.20
01, 2018	88,111,106,660.00	115,766,661,120.00	46,434,481,642.48	157,349,594,583.60
01, 2018	99,411,106,260.00	128,622,216,220.00	59,322,081,086.08	152,458,305,522.08
01, 2018	105,855,550,360.00	136,488,882,520.00	68,543,102,910.88	143,290,838,768.24
01, 2018	120,866,661,120.00	150,711,104,380.00	81,729,102,576.88	157,447,194,042.08
01, 2018	125,755,549,660.00	162,333,326,320.00	79,613,191,313.84	148,335,282,848.24
01, 2018	137,166,660,380.00	172,433,326,080.00	64,612,391,240.00	163,057,504,768.24
01, 2019	142,599,993,340.00	170,688,881,480.00	47,667,146,726.16	174,313,060,068.24
01, 2019	153,288,881,980.00	177,611,103,520.00	55,220,702,060.16	181,735,282,108.24
01, 2019	165,133,326,040.00	186,188,881,100.00	65,663,146,214.16	188,313,059,688.24
01, 2019	172,933,325,680.00	193,899,992,040.00	70,616,701,448.16	195,524,170,628.24
01, 2019	174,088,880,680.00	200,166,658,540.00	71,814,701,042.16	202,290,837,128.24

Skenario 1

Time	(Ton/mo)			STOCK KUU	(Ton/mo)			
	Order UU	Stock UU	Prod		Sales	Dem	OS	LS
Jan 01, 2017	66.67	0.00	25.00	2017 22.00	2017 22.00	25.00	0.00	3.00
Feb 01, 2017	33.33	0.00	22.00	2017 25.00	2017 19.00	19.00	6.00	0.00
Mar 01, 2017	76.67	0.00	19.00	2017 28.00	2017 19.00	19.00	9.00	0.00
Apr 01, 2017	56.67	66.67	20.00	2017 28.00	2017 18.00	18.00	10.00	0.00
May 01, 2017	83.33	33.33	10.00	2017 30.00	2017 20.00	20.00	10.00	0.00
Jun 01, 2017	66.67	76.67	23.00	2017 20.00	2017 20.00	21.00	0.00	1.00
Jul 01, 2017	63.33	56.67	17.00	2017 23.00	2017 20.00	20.00	3.00	0.00
Aug 01, 2017	60.00	83.33	25.00	2017 20.00	2017 19.00	19.00	1.00	0.00
Sep 01, 2017	0.00	66.67	20.00	2017 26.00	2017 24.00	24.00	2.00	0.00
Oct 01, 2017	16.67	63.33	19.00	2017 22.00	2017 22.00	23.00	0.00	1.00
Nov 01, 2017	26.67	60.00	18.00	2017 19.00	2017 19.00	23.00	0.00	4.00
Dec 01, 2017	10.00	0.00	0.00	2017 18.00	2017 18.00	21.00	0.00	3.00
Jan 01, 2018	26.67	16.67	5.00	2018 0.00	2018 0.00	2.00	0.00	2.00
Feb 01, 2018	33.33	26.67	8.00	2018 5.00	2018 5.00	12.00	0.00	7.00
Mar 01, 2018	76.67	10.00	3.00	2018 8.00	2018 8.00	13.00	0.00	5.00
Apr 01, 2018	56.67	26.67	8.00	2018 3.00	2018 3.00	19.00	0.00	16.00
May 01, 2018	46.67	33.33	10.00	2018 8.00	2018 8.00	21.00	0.00	13.00
Jun 01, 2018	66.67	76.67	23.00	2018 10.00	2018 5.00	5.00	5.00	0.00
Jul 01, 2018	63.33	56.67	17.00	2018 28.00	2018 20.00	20.00	8.00	0.00
Aug 01, 2018	53.33	46.67	14.00	2018 25.00	2018 15.00	15.00	10.00	0.00
Sep 01, 2018	36.67	66.67	20.00	2018 24.00	2018 19.00	19.00	5.00	0.00
Oct 01, 2018	73.33	63.33	19.00	2018 25.00	2018 16.00	16.00	9.00	0.00
Nov 01, 2018	43.33	53.33	16.00	2018 28.00	2018 18.00	18.00	10.00	0.00
Dec 01, 2018	96.67	36.67	11.00	2018 26.00	2018 19.00	19.00	7.00	0.00
Jan 01, 2019	0.00	73.33	22.00	2019 18.00	2019 11.00	11.00	7.00	0.00
Feb 01, 2019	0.00	43.33	13.00	2019 29.00	2019 14.00	14.00	15.00	0.00
Mar 01, 2019	0.00	96.67	29.00	2019 28.00	2019 11.00	11.00	17.00	0.00
Apr 01, 2019	0.00	0.00	0.00	2019 46.00	2019 10.00	10.00	36.00	0.00
May 01, 2019	?	0.00	0.00	2019 36.00	2019 7.00	7.00	29.00	0.00

Skenario 2

Time	(Ton/mo)			Stock KUU	(Ton/mo)			
	Order UU	Stock UU	Prod		Sales	Demand	OS	LS
Jan 01, 2017	63.33	0.00	20.00	2017 20.00	20120.00	25.00	0.00	5.00
Feb 01, 2017	60.00	0.00	20.00	2017 20.00	20119.00	19.00	1.00	0.00
Mar 01, 2017	60.00	0.00	19.00	2017 21.00	20119.00	19.00	2.00	0.00
Apr 01, 2017	60.00	63.33	19.00	2017 21.00	20118.00	18.00	3.00	0.00
May 01, 2017	56.67	60.00	18.00	2017 22.00	20120.00	20.00	2.00	0.00
Jun 01, 2017	56.67	60.00	18.00	2017 20.00	20120.00	21.00	0.00	1.00
Jul 01, 2017	56.67	60.00	18.00	2017 18.00	20118.00	20.00	0.00	2.00
Aug 01, 2017	53.33	56.67	17.00	2017 18.00	20118.00	19.00	0.00	1.00
Sep 01, 2017	53.33	56.67	17.00	2017 17.00	20117.00	24.00	0.00	7.00
Oct 01, 2017	53.33	56.67	17.00	2017 17.00	20117.00	23.00	0.00	6.00
Nov 01, 2017	50.00	53.33	16.00	2017 17.00	20117.00	23.00	0.00	6.00
Dec 01, 2017	50.00	53.33	16.00	2017 16.00	20116.00	21.00	0.00	5.00
Jan 01, 2018	50.00	53.33	16.00	2018 16.00	20118.00	2.00	14.00	0.00
Feb 01, 2018	46.67	50.00	15.00	2018 30.00	20112.00	12.00	18.00	0.00
Mar 01, 2018	46.67	50.00	15.00	2018 33.00	20113.00	13.00	20.00	0.00
Apr 01, 2018	46.67	50.00	15.00	2018 35.00	20119.00	19.00	16.00	0.00
May 01, 2018	43.33	46.67	14.00	2018 31.00	20111.00	21.00	10.00	0.00
Jun 01, 2018	43.33	46.67	14.00	2018 24.00	20115.00	5.00	19.00	0.00
Jul 01, 2018	43.33	46.67	14.00	2018 33.00	20120.00	20.00	13.00	0.00
Aug 01, 2018	40.00	43.33	13.00	2018 27.00	20115.00	15.00	12.00	0.00
Sep 01, 2018	40.00	43.33	13.00	2018 25.00	20119.00	19.00	6.00	0.00
Oct 01, 2018	40.00	43.33	13.00	2018 19.00	20116.00	16.00	3.00	0.00
Nov 01, 2018	36.67	40.00	12.00	2018 16.00	20116.00	18.00	0.00	2.00
Dec 01, 2018	36.67	40.00	12.00	2018 12.00	20112.00	19.00	0.00	7.00
Jan 01, 2019	36.67	40.00	12.00	2019 12.00	20111.00	11.00	1.00	0.00
Feb 01, 2019	33.33	36.67	11.00	2019 13.00	20113.00	14.00	0.00	1.00
Mar 01, 2019	33.33	36.67	11.00	2019 11.00	20111.00	11.00	0.00	0.00
Apr 01, 2019	33.33	36.67	11.00	2019 11.00	20110.00	10.00	1.00	0.00
May 01, 2019	?	33.33	?	2019 12.00	20119.00	7.00	5.00	0.00

Skenario 3

Time	(Ton/mo)				Stok Keripik 2	(Ton/mo)			
	Inv Adj	Order UU	Stock UU	Prod		Sales 2	Demand 2	OS	LS
Jan 01, 2017	25.00	82.31	82.31	24.69	2017 25.00	20125.00	25.00	0.00	0.00
Feb 01, 2017	13.31	44.36	82.31	24.69	2017 24.69	20119.00	19.00	5.69	0.00
Mar 01, 2017	7.62	25.64	82.31	24.69	2017 30.38	20119.00	19.00	11.38	0.00
Apr 01, 2017	-0.08	25.64	82.31	24.69	2017 36.08	20118.00	18.00	18.08	0.00
May 01, 2017	-2.77	25.64	44.36	13.31	2017 42.77	20120.00	20.00	22.77	0.00
Jun 01, 2017	5.92	25.64	25.64	7.69	2017 36.08	20121.00	21.00	15.08	0.00
Jul 01, 2017	17.23	57.44	25.64	7.69	2017 22.77	20120.00	20.00	2.77	0.00
Aug 01, 2017	19.00	63.33	25.64	7.69	2017 10.46	20120.46	19.00	0.00	8.54
Sep 01, 2017	24.00	80.00	25.64	7.69	2017 7.69	20117.69	24.00	0.00	16.31
Oct 01, 2017	23.00	76.67	57.44	17.23	2017 7.69	20117.69	23.00	0.00	15.31
Nov 01, 2017	23.00	76.67	63.33	19.00	2017 17.23	20117.23	23.00	0.00	5.77
Dec 01, 2017	21.00	70.00	80.00	24.00	2017 19.00	20119.00	21.00	0.00	2.00
Jan 01, 2018	-20.00	25.64	76.67	23.00	2018 24.00	20112.00	2.00	22.00	0.00
Feb 01, 2018	-21.00	25.64	76.67	23.00	2018 45.00	20112.00	12.00	33.00	0.00
Mar 01, 2018	-30.00	25.64	70.00	21.00	2018 56.00	20113.00	13.00	43.00	0.00
Apr 01, 2018	-26.00	25.64	25.64	7.69	2018 64.00	20119.00	19.00	45.00	0.00
May 01, 2018	-10.69	25.64	25.64	7.69	2018 52.69	20111.00	21.00	31.69	0.00
Jun 01, 2018	-29.38	25.64	25.64	7.69	2018 39.38	20115.00	5.00	34.38	0.00
Jul 01, 2018	-2.08	25.64	25.64	7.69	2018 42.08	20120.00	20.00	22.08	0.00
Aug 01, 2018	0.23	25.64	25.64	7.69	2018 29.77	20115.00	15.00	14.77	0.00
Sep 01, 2018	51.80	25.64	25.64	7.69	2018 22.46	20115.00	19.00	3.46	0.00
Oct 01, 2018	16.00	53.33	25.64	7.69	2018 11.15	20111.15	16.00	0.00	4.85
Nov 01, 2018	18.00	60.00	25.64	7.69	2018 7.69	20117.69	18.00	0.00	10.31
Dec 01, 2018	19.00	63.33	51.80	15.54	2018 7.69	20117.69	19.00	0.00	11.31
Jan 01, 2019	6.46	25.64	53.33	16.00	2019 15.54	20111.00	11.00	4.54	0.00
Feb 01, 2019	7.46	25.64	60.00	18.00	2019 20.54	20114.00	14.00	6.54	0.00
Mar 01, 2019	-2.54	25.64	63.33	19.00	2019 24.54	20111.00	11.00	13.54	0.00
Apr 01, 2019	-12.54	25.64	25.64	7.69	2019 32.54	20110.00	10.00	22.54	0.00
May 01, 2019	-16.23	25.64	25.64	7.69	2019 30.23	20119.00	7.00	23.23	0.00

Skenario 4

Time	(Ton/mo)				Stok Keripik 3	(Ton/mo)			
	InvAdj	Order UU	Stock UU	Prod UU		Sales 3	Demand 3	OS	LS
Jan 01, 2017	25.00	63.33	63.33	19.00	2017 25.00	20125.00	25.00	0.00	0.00
Feb 01, 2017	19.00	60.00	63.33	19.00	2017 19.00	20119.00	19.00	0.00	0.00
Mar 01, 2017	19.00	60.00	63.33	19.00	2017 19.00	20118.00	18.00	1.00	0.00
Apr 01, 2017	17.00	56.67	63.33	19.00	2017 20.00	20120.00	20.00	0.00	0.00
May 01, 2017	20.00	66.67	60.00	18.00	2017 20.00	20118.00	21.00	0.00	3.00
Jun 01, 2017	21.00	70.00	60.00	18.00	2017 18.00	20118.00	20.00	0.00	2.00
Jul 01, 2017	20.00	56.67	56.67	17.00	2017 18.00	20117.00	19.00	0.00	2.00
Aug 01, 2017	19.00	53.33	66.67	20.00	2017 20.00	20120.00	24.00	0.00	4.00
Sep 01, 2017	24.00	53.33	70.00	21.00	2017 21.00	20121.00	23.00	0.00	2.00
Oct 01, 2017	23.00	53.33	56.67	17.00	2017 17.00	20117.00	23.00	0.00	6.00
Nov 01, 2017	23.00	50.00	53.33	16.00	2017 16.00	20116.00	21.00	0.00	5.00
Dec 01, 2017	21.00	50.00	53.33	16.00	2018 16.00	20112.00	2.00	14.00	0.00
Jan 01, 2018	-12.00	25.64	53.33	16.00	2018 30.00	20112.00	12.00	18.00	0.00
Feb 01, 2018	-6.00	25.64	50.00	15.00	2018 33.00	20113.00	13.00	20.00	0.00
Mar 01, 2018	-7.00	25.64	50.00	15.00	2018 35.00	20119.00	19.00	16.00	0.00
Apr 01, 2018	3.00	25.64	25.64	7.69	2018 23.69	20118.00	21.00	2.69	0.00
May 01, 2018	18.31	61.03	25.64	7.69	2018 10.38	20115.00	5.00	5.38	0.00
Jun 01, 2018	-0.38	25.64	25.64	7.69	2018 13.08	20113.08	20.00	0.00	6.92
Jul 01, 2018	20.00	66.67	25.64	7.69	2018 7.69	20117.69	15.00	0.00	7.31
Aug 01, 2018	15.00	50.00	61.03	18.31	2018 18.31	20118.31	19.00	0.00	0.69
Sep 01, 2018	19.00	40.00	25.64	7.69	2018 7.69	20117.69	16.00	0.00	8.31
Oct 01, 2018	16.00	40.00	66.67	20.00	2018 20.00	20118.00	18.00	2.00	0.00
Nov 01, 2018	16.00	36.67	50.00	15.00	2018 17.00	20117.00	19.00	0.00	2.00
Dec 01, 2018	19.00	36.67	40.00	12.00	2019 12.00	20111.00	11.00	1.00	0.00
Jan 01, 2019	10.00	33.33	40.00	12.00	2019 13.00	20113.00	14.00	0.00	1.00
Feb 01, 2019	14.00	46.67	36.67	11.00	2019 11.00	20111.00	11.00	0.00	0.00
Mar 01, 2019	11.00	36.67	36.67	11.00	2019 11.00	20110.00	10.00	1.00	0.00
Apr 01, 2019	9.00	30.00	33.33	10.00	2019 11.00	20119.00	7.00	4.00	0.00
May 01, 2019	3.00	?	46.67	14.00					

Input Random Number 3



Time	Profit_0	Profit_1	Profit_2	Profit_3
01, 2017	0.00	0.00	0.00	0.00
01, 2017	13,977,777,440.00	9,277,777,480.00	15,077,777,420.00	17,077,777,420.00
01, 2017	27,755,554,860.00	20,499,999,400.00	27,933,332,640.00	28,588,888,240.00
01, 2017	35,322,221,120.00	32,588,887,960.00	42,288,887,800.00	41,255,554,600.00
01, 2017	51,666,665,140.00	47,566,665,400.00	59,266,665,120.00	51,033,332,080.00
01, 2017	57,655,553,660.00	59,577,776,220.00	72,176,220,240.00	63,044,442,900.00
01, 2017	62,677,775,620.00	68,699,998,160.00	87,653,997,620.00	72,166,664,840.00
01, 2017	76,866,664,160.00	76,666,664,560.00	85,820,664,080.00	80,133,331,240.00
01, 2017	89,822,219,420.00	88,022,219,840.00	85,276,219,440.00	91,488,886,520.00
01, 2017	117,266,663,480.00	86,666,664,060.00	55,373,863,846.16	90,133,330,740.00
01, 2017	134,988,885,400.00	91,088,886,040.00	56,796,085,826.16	94,555,552,720.00
01, 2017	150,055,551,780.00	97,455,552,460.00	70,562,752,166.16	100,922,219,140.00
01, 2018	157,799,995,980.00	93,999,996,700.00	70,061,196,346.16	97,466,663,380.00
01, 2018	153,799,995,980.00	81,877,774,300.00	59,081,951,627.36	88,998,440,980.00
01, 2018	143,022,218,160.00	84,411,107,220.00	60,524,928,828.56	94,685,773,900.00
01, 2018	130,655,551,400.00	89,255,551,220.00	62,545,683,709.76	102,684,217,900.00
01, 2018	95,288,884,780.00	107,099,995,180.00	74,766,527,332.16	120,528,661,860.00
01, 2018	74,422,218,060.00	128,044,439,240.00	91,698,571,135.76	119,861,194,946.16
01, 2018	68,755,551,260.00	124,433,327,940.00	85,897,370,760.56	121,015,283,727.36
01, 2018	72,833,328,660.00	132,666,660,940.00	93,762,925,866.56	118,847,016,919.68
01, 2018	80,722,217,140.00	144,577,771,720.00	106,628,569,933.76	122,191,461,159.68
01, 2018	99,199,994,520.00	156,199,993,660.00	110,245,191,896.88	141,035,905,239.68
01, 2018	102,644,438,620.00	162,333,326,800.00	101,077,725,143.04	138,568,438,445.84
01, 2018	110,877,771,560.00	167,522,215,500.00	89,965,813,949.20	148,957,327,105.84
01, 2019	118,333,326,700.00	162,888,882,020.00	69,131,680,555.36	157,323,993,525.84
01, 2019	127,288,882,000.00	168,366,659,620.00	73,374,569,155.36	164,301,771,125.84
01, 2019	137,111,103,820.00	178,099,992,740.00	80,506,346,575.36	173,035,104,245.84
01, 2019	138,266,659,000.00	179,744,437,020.00	78,104,790,655.36	175,833,548,525.84
01, 2019	134,511,102,820.00	181,677,770,140.00	73,103,234,575.36	178,920,881,645.84

Skenario 1

Time	(Ton/mo)			STOCK KUU	(Ton/mo)			
	Order UU	Stock UU	Prod		Sales	Dem	OS	LS
Jan 01, 2017	66.67	0.00	25.00	2017 22.00	2017 22.00	23.00	0.00	1.00
Feb 01, 2017	33.33	0.00	22.00	2017 25.00	2017 18.00	18.00	7.00	0.00
Mar 01, 2017	76.67	0.00	19.00	2017 29.00	2017 19.00	19.00	10.00	0.00
Apr 01, 2017	56.67	66.67	20.00	2017 29.00	2017 23.00	23.00	6.00	0.00
May 01, 2017	83.33	33.33	10.00	2017 26.00	2017 18.00	18.00	8.00	0.00
Jun 01, 2017	66.67	76.67	23.00	2017 18.00	2017 18.00	22.00	0.00	4.00
Jul 01, 2017	63.33	56.67	17.00	2017 23.00	2017 21.00	21.00	2.00	0.00
Aug 01, 2017	60.00	83.33	25.00	2017 19.00	2017 19.00	19.00	0.00	0.00
Sep 01, 2017	0.00	66.67	20.00	2017 25.00	2017 25.00	26.00	0.00	1.00
Oct 01, 2017	16.67	63.33	19.00	2017 20.00	2017 20.00	22.00	0.00	2.00
Nov 01, 2017	26.67	60.00	18.00	2017 19.00	2017 19.00	21.00	0.00	2.00
Dec 01, 2017	10.00	0.00	0.00	2017 18.00	2017 18.00	26.00	0.00	8.00
Jan 01, 2018	26.67	16.67	5.00	2018 0.00	2018 0.00	0.00	0.00	0.00
Feb 01, 2018	33.33	26.67	8.00	2018 5.00	2018 5.00	13.00	0.00	8.00
Mar 01, 2018	76.67	10.00	3.00	2018 8.00	2018 8.00	15.00	0.00	7.00
Apr 01, 2018	56.67	26.67	8.00	2018 3.00	2018 3.00	24.00	0.00	21.00
May 01, 2018	46.67	33.33	10.00	2018 8.00	2018 8.00	24.00	0.00	16.00
Jun 01, 2018	66.67	76.67	23.00	2018 10.00	2018 5.00	5.00	5.00	0.00
Jul 01, 2018	63.33	56.67	17.00	2018 28.00	2018 15.00	15.00	13.00	0.00
Aug 01, 2018	53.33	46.67	14.00	2018 30.00	2018 17.00	17.00	13.00	0.00
Sep 01, 2018	36.67	66.67	20.00	2018 27.00	2018 22.00	22.00	5.00	0.00
Oct 01, 2018	73.33	63.33	19.00	2018 25.00	2018 15.00	15.00	10.00	0.00
Nov 01, 2018	43.33	53.33	16.00	2018 29.00	2018 16.00	16.00	13.00	0.00
Dec 01, 2018	96.67	36.67	11.00	2018 29.00	2018 21.00	21.00	8.00	0.00
Jan 01, 2019	0.00	73.33	22.00	2019 19.00	2019 10.00	10.00	9.00	0.00
Feb 01, 2019	0.00	43.33	13.00	2019 31.00	2019 13.00	13.00	18.00	0.00
Mar 01, 2019	0.00	96.67	29.00	2019 31.00	2019 7.00	7.00	24.00	0.00
Apr 01, 2019	0.00	0.00	0.00	2019 53.00	2019 8.00	8.00	45.00	0.00
May 01, 2019	?	0.00	0.00	2019 45.00	2019 7.00	7.00	38.00	0.00

Skenario 2

Time	(Ton/mo)			(Ton)	(Ton/mo)			
	Order UU	Stock UU	Prod		Stock KUU	Sales	Demand	OS
Jan 01, 2017	63.33	0.00	20.00	2017 20.00	20120.00	23.00	0.00	3.00
Feb 01, 2017	60.00	0.00	20.00	2017 20.00	20118.00	18.00	2.00	0.00
Mar 01, 2017	60.00	0.00	19.00	2017 22.00	20119.00	19.00	3.00	0.00
Apr 01, 2017	60.00	63.33	19.00	2017 22.00	20122.00	23.00	0.00	1.00
May 01, 2017	56.67	60.00	18.00	2017 19.00	20118.00	18.00	1.00	0.00
Jun 01, 2017	56.67	60.00	18.00	2017 19.00	20119.00	22.00	0.00	3.00
Jul 01, 2017	56.67	60.00	18.00	2017 18.00	20118.00	21.00	0.00	3.00
Aug 01, 2017	53.33	56.67	17.00	2017 18.00	20118.00	19.00	0.00	1.00
Sep 01, 2017	53.33	56.67	17.00	2017 17.00	20117.00	26.00	0.00	9.00
Oct 01, 2017	53.33	56.67	17.00	2017 17.00	20117.00	22.00	0.00	5.00
Nov 01, 2017	50.00	53.33	16.00	2017 17.00	20117.00	21.00	0.00	4.00
Dec 01, 2017	50.00	53.33	16.00	2017 16.00	20116.00	26.00	0.00	10.00
Jan 01, 2018	50.00	53.33	16.00	2018 16.00	20180.00	0.00	16.00	0.00
Feb 01, 2018	46.67	50.00	15.00	2018 32.00	20183.00	13.00	19.00	0.00
Mar 01, 2018	46.67	50.00	15.00	2018 34.00	20185.00	15.00	19.00	0.00
Apr 01, 2018	46.67	50.00	15.00	2018 34.00	20184.00	24.00	10.00	0.00
May 01, 2018	43.33	46.67	14.00	2018 25.00	20184.00	24.00	1.00	0.00
Jun 01, 2018	43.33	46.67	14.00	2018 15.00	20185.00	5.00	10.00	0.00
Jul 01, 2018	43.33	46.67	14.00	2018 24.00	20185.00	15.00	9.00	0.00
Aug 01, 2018	40.00	43.33	13.00	2018 23.00	20187.00	17.00	6.00	0.00
Sep 01, 2018	40.00	43.33	13.00	2018 19.00	20189.00	22.00	0.00	3.00
Oct 01, 2018	40.00	43.33	13.00	2018 13.00	20183.00	15.00	0.00	2.00
Nov 01, 2018	36.67	40.00	12.00	2018 13.00	20183.00	16.00	0.00	3.00
Dec 01, 2018	36.67	40.00	12.00	2018 12.00	20182.00	21.00	0.00	9.00
Jan 01, 2019	36.67	40.00	12.00	2019 12.00	20190.00	10.00	2.00	0.00
Feb 01, 2019	33.33	36.67	11.00	2019 14.00	20193.00	13.00	1.00	0.00
Mar 01, 2019	33.33	36.67	11.00	2019 12.00	20197.00	7.00	5.00	0.00
Apr 01, 2019	33.33	36.67	11.00	2019 16.00	20198.00	8.00	8.00	0.00
May 01, 2019	?	33.33	?	2019 19.00	20197.00	7.00	12.00	0.00

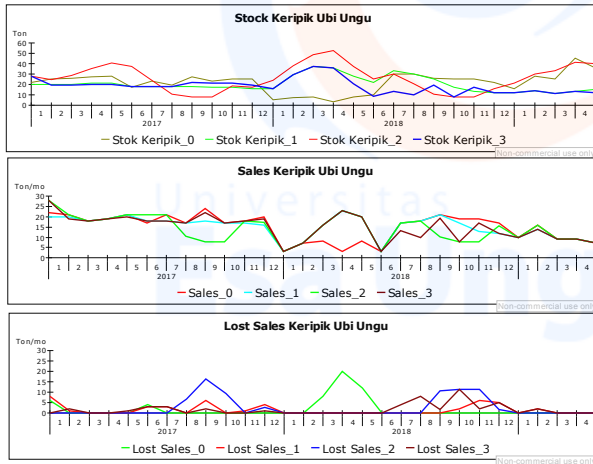
Skenario 3

Time	Inv Adj	(Ton/mo)			(Ton)	(Ton/mo)				
		Order UU	Stock UU	Prod		Stok Keripik 2	Sales 2	Demand 2	OS	LS
Jan 01, 2017		76.67	76.67	23.00	2017 23.00	20123.00	23.00	0.00	0.00	
Feb 01, 2017		43.33	76.67	23.00	2017 23.00	20118.00	18.00	5.00	0.00	
Mar 01, 2017		33.33	76.67	23.00	2017 28.00	20119.00	19.00	9.00	0.00	
Apr 01, 2017		46.67	76.67	23.00	2017 32.00	20123.00	23.00	9.00	0.00	
May 01, 2017		25.64	43.33	13.00	2017 32.00	20118.00	18.00	14.00	0.00	
Jun 01, 2017		56.67	33.33	10.00	2017 27.00	20122.00	22.00	5.00	0.00	
Jul 01, 2017		70.00	46.67	14.00	2017 15.00	20125.00	21.00	0.00	6.00	
Aug 01, 2017		63.33	25.64	7.69	2017 14.00	20124.00	19.00	0.00	5.00	
Sep 01, 2017		82.31	56.67	17.00	2017 7.69	20127.69	26.00	0.00	18.31	
Oct 01, 2017		73.33	70.00	21.00	2017 17.00	20127.00	22.00	0.00	5.00	
Nov 01, 2017		70.00	63.33	19.00	2017 21.00	20121.00	21.00	0.00	0.00	
Dec 01, 2017		82.31	82.31	24.69	2017 19.00	20119.00	26.00	0.00	7.00	
Jan 01, 2018	-24.69	25.64	73.33	22.00	2018 24.69	20180.00	0.00	24.69	0.00	
Feb 01, 2018	-20.69	25.64	70.00	21.00	2018 46.69	20183.00	13.00	33.69	0.00	
Mar 01, 2018	-24.69	25.64	82.31	24.69	2018 54.69	20185.00	15.00	39.69	0.00	
Apr 01, 2018	-16.38	25.64	25.64	7.69	2018 64.38	20184.00	24.00	40.38	0.00	
May 01, 2018	-0.08	25.64	25.64	7.69	2018 48.08	20184.00	24.00	24.08	0.00	
Jun 01, 2018	-21.77	25.64	25.64	7.69	2018 31.77	20185.00	5.00	26.77	0.00	
Jul 01, 2018	-4.46	25.64	25.64	7.69	2018 34.46	20185.00	15.00	19.46	0.00	
Aug 01, 2018	6.85	25.64	25.64	7.69	2018 27.15	20187.00	17.00	10.15	0.00	
Sep 01, 2018	22.00	73.33	25.64	7.69	2018 17.84	20187.84	22.00	0.00	4.16	
Oct 01, 2018	15.00	50.00	25.64	7.69	2018 7.69	20187.69	15.00	0.00	7.31	
Nov 01, 2018	16.00	53.33	25.64	7.69	2018 7.69	20187.69	16.00	0.00	8.31	
Dec 01, 2018	21.00	70.00	73.33	22.00	2018 7.69	20187.69	21.00	0.00	13.31	
Jan 01, 2019	-2.00	25.64	50.00	15.00	2019 22.00	20190.00	10.00	12.00	0.00	
Feb 01, 2019	-1.00	25.64	53.33	16.00	2019 27.00	20193.00	13.00	14.00	0.00	
Mar 01, 2019	-16.00	25.64	70.00	21.00	2019 30.00	20197.00	7.00	23.00	0.00	
Apr 01, 2019	-28.00	25.64	25.64	7.69	2019 44.00	20198.00	8.00	36.00	0.00	
May 01, 2019	-29.69	25.64	25.64	7.69	2019 43.69	20197.00	7.00	36.69	0.00	

Skenario 4

Time	InvAdj	(Ton/mo)			(Ton)	(Ton/mo)			
		Order UU	Stock UU	Prod UU		Stok Keripik 3	Sales 3	Demand 3	OS
Jan 01, 2017		63.33	63.33	19.00	2017 23.00	20123.00	23.00	0.00	0.00
Feb 01, 2017		60.00	63.33	19.00	2017 19.00	20118.00	18.00	1.00	0.00
Mar 01, 2017		60.00	63.33	19.00	2017 20.00	20119.00	19.00	1.00	0.00
Apr 01, 2017		60.00	63.33	19.00	2017 20.00	20120.00	23.00	0.00	3.00
May 01, 2017		56.67	60.00	18.00	2017 19.00	20118.00	18.00	1.00	0.00
Jun 01, 2017		56.67	60.00	18.00	2017 19.00	20119.00	22.00	0.00	3.00
Jul 01, 2017		56.67	60.00	18.00	2017 18.00	20118.00	21.00	0.00	3.00
Aug 01, 2017		53.33	56.67	17.00	2017 18.00	20118.00	19.00	0.00	1.00
Sep 01, 2017		53.33	56.67	17.00	2017 17.00	20117.00	26.00	0.00	9.00
Oct 01, 2017		53.33	56.67	17.00	2017 17.00	20117.00	22.00	0.00	5.00
Nov 01, 2017		50.00	53.33	16.00	2017 16.00	20116.00	26.00	0.00	10.00
Jan 01, 2018	-16.00	25.64	53.33	16.00	2018 16.00	20180.00	0.00	16.00	0.00
Feb 01, 2018	-6.00	25.64	50.00	15.00	2018 32.00	20183.00	13.00	19.00	0.00
Mar 01, 2018	-4.00	25.64	50.00	15.00	2018 34.00	20185.00	15.00	19.00	0.00
Apr 01, 2018	14.00	46.67	25.64	7.69	2018 34.00	20184.00	24.00	10.00	0.00
May 01, 2018	24.00	80.00	25.64	7.69	2018 17.69	20187.69	24.00	0.00	6.31
Jun 01, 2018	2.31	25.64	25.64	7.69	2018 7.69	20185.00	5.00	2.69	0.00
Jul 01, 2018	15.00	50.00	46.67	14.00	2018 10.38	20180.38	15.00	0.00	4.62
Aug 01, 2018	17.00	56.67	80.00	24.00	2018 14.00	20184.00	17.00	0.00	3.00
Sep 01, 2018	20.00	40.00	25.64	7.69	2018 24.00	20182.00	22.00	2.00	0.00
Oct 01, 2018	15.00	40.00	50.00	15.00	2018 9.69	20189.69	15.00	0.00	5.31
Nov 01, 2018	16.00	36.67	56.67	17.00	2018 15.00	20185.00	16.00	0.00	1.00
Dec 01, 2018	21.00	36.67	40.00	12.00	2018 17.00	20187.00	21.00	0.00	4.00
Jan 01, 2019	8.00	26.67	40.00	12.00	2019 12.00	20190.00	10.00	2.00	0.00
Feb 01, 2019	12.00	40.00	36.67	11.00	2019 14.00	20193.00	13.00	1.00	0.00
Mar 01, 2019	2.00	25.64	36.67	11.00	2019 12.00	20197.00	7.00	5.00	0.00
Apr 01, 2019	0.00	25.64	26.67	8.00	2019 16.00	20198.00	8.00	8.00	0.00
May 01, 2019	-2.00	?	40.00	12.00	2019 16.00	20197.00	7.00	9.00	0.00

Input Random Number 4



Time	Profit_0	Profit_1	Profit_2	Profit_3
01, 2017	0.00	0.00	0.00	0.00
01, 2017	6,755,555,240.00	2,055,555,280.00	20,009,555,120.00	22,855,555,120.00
01, 2017	24,866,665,980.00	14,722,221,640.00	34,555,643,641.20	32,922,221,500.00
01, 2017	31,855,554,500.00	25,944,443,560.00	48,509,821,023.60	44,433,332,320.00
01, 2017	42,999,998,560.00	38,322,221,020.00	61,975,198,327.20	57,099,998,680.00
01, 2017	52,744,442,600.00	54,088,887,360.00	76,685,108,892.00	68,266,665,040.00
01, 2017	56,611,109,020.00	62,055,553,760.00	92,461,597,275.60	74,233,331,440.00
01, 2017	70,799,997,560.00	70,022,220,160.00	106,812,619,140.40	82,199,997,840.00
01, 2017	80,866,663,940.00	81,377,775,440.00	100,953,063,451.20	93,555,553,120.00
01, 2017	107,733,330,200.00	85,511,108,520.00	74,285,596,737.36	108,088,886,120.00
01, 2017	123,144,440,980.00	97,155,552,700.00	61,229,241,103.52	118,577,774,700.00
01, 2017	137,922,218,400.00	107,855,552,440.00	73,078,218,598.72	131,011,107,720.00
01, 2018	158,088,884,700.00	113,066,663,320.00	78,992,529,454.08	144,022,219,540.00
01, 2018	156,977,773,520.00	105,277,774,240.00	72,546,529,174.08	139,887,329,460.00
01, 2018	160,066,662,300.00	100,011,107,220.00	67,833,862,054.08	137,774,662,440.00
01, 2018	146,255,551,100.00	105,433,328,960.00	73,010,439,218.88	146,350,884,180.00
01, 2018	112,333,328,920.00	121,255,550,680.00	87,142,571,863.68	164,173,105,900.00
01, 2018	97,244,439,960.00	135,555,550,280.00	101,363,682,469.68	177,430,305,581.20
01, 2018	88,688,884,280.00	127,033,327,800.00	94,584,882,176.88	175,495,594,363.60
01, 2018	95,077,772,760.00	135,555,549,580.00	106,672,837,325.28	176,437,638,622.08
01, 2018	104,411,105,680.00	146,888,882,500.00	119,008,214,794.88	170,437,638,502.08
01, 2018	121,733,327,520.00	163,999,993,240.00	104,767,681,350.32	184,305,104,875.92
01, 2018	130,955,549,380.00	174,755,548,540.00	87,822,436,836.48	170,859,860,362.08
01, 2018	144,677,771,240.00	175,611,103,920.00	70,877,192,322.64	182,115,415,662.08
01, 2019	148,377,770,920.00	176,755,548,200.00	78,028,036,533.36	183,259,859,942.08
01, 2019	158,199,992,920.00	182,233,325,800.00	82,559,814,033.36	190,237,637,542.08
01, 2019	173,222,214,760.00	190,522,214,480.00	93,158,258,073.36	195,526,526,222.08
01, 2019	178,999,992,220.00	195,344,436,540.00	92,778,924,333.36	201,502,748,282.08
01, 2019	178,999,991,680.00	199,588,880,800.00	90,088,479,393.36	206,901,192,542.08

Skenario 1

Time	(Ton/mo)			STOCK KUIJ	(Ton/mo)			
	Order UJ	Stock UJ	Prod		Sales	Dem	OS	LS
Jan 01, 2017	66.67	0.00	25.00	2017 22.00	201722.00	28.00	0.00	6.00
Feb 01, 2017	33.33	0.00	22.00	2017 25.00	201721.00	21.00	4.00	0.00
Mar 01, 2017	76.67	0.00	19.00	2017 26.00	201718.00	18.00	8.00	0.00
Apr 01, 2017	56.67	66.67	20.00	2017 27.00	201719.00	19.00	8.00	0.00
May 01, 2017	83.33	33.33	10.00	2017 28.00	201721.00	21.00	7.00	0.00
Jun 01, 2017	66.67	76.67	23.00	2017 17.00	201717.00	21.00	0.00	4.00
Jul 01, 2017	63.33	56.67	17.00	2017 23.00	2017 21.00	21.00	2.00	0.00
Aug 01, 2017	60.00	83.33	25.00	2017 19.00	201717.00	17.00	2.00	0.00
Sep 01, 2017	0.00	66.67	20.00	2017 27.00	201724.00	24.00	3.00	0.00
Oct 01, 2017	16.67	63.33	19.00	2017 23.00	201717.00	17.00	6.00	0.00
Nov 01, 2017	26.67	60.00	18.00	2017 25.00	201718.00	18.00	7.00	0.00
Dec 01, 2017	10.00	0.00	0.00	2017 25.00	201720.00	20.00	5.00	0.00
Jan 01, 2018	26.67	16.67	5.00	2018 5.00	2018 3.00	3.00	2.00	0.00
Feb 01, 2018	33.33	26.67	8.00	2018 7.00	2018 7.00	7.00	0.00	0.00
Mar 01, 2018	76.67	10.00	3.00	2018 8.00	2018 8.00	16.00	0.00	8.00
Apr 01, 2018	56.67	26.67	8.00	2018 3.00	2018 3.00	23.00	0.00	20.00
May 01, 2018	46.67	33.33	10.00	2018 8.00	2018 8.00	20.00	0.00	12.00
Jun 01, 2018	66.67	76.67	23.00	2018 10.00	2018 3.00	3.00	7.00	0.00
Jul 01, 2018	63.33	56.67	17.00	2018 30.00	2018 17.00	17.00	13.00	0.00
Aug 01, 2018	53.33	46.67	14.00	2018 30.00	201818.00	18.00	12.00	0.00
Sep 01, 2018	36.67	66.67	20.00	2018 26.00	201821.00	21.00	5.00	0.00
Oct 01, 2018	73.33	63.33	19.00	2018 25.00	201819.00	19.00	6.00	0.00
Nov 01, 2018	43.33	53.33	16.00	2018 25.00	201819.00	19.00	6.00	0.00
Dec 01, 2018	96.67	36.67	11.00	2018 22.00	201817.00	17.00	5.00	0.00
Jan 01, 2019	0.00	73.33	22.00	2019 16.00	201910.00	10.00	6.00	0.00
Feb 01, 2019	0.00	43.33	13.00	2019 28.00	201916.00	16.00	12.00	0.00
Mar 01, 2019	0.00	96.67	29.00	2019 25.00	2019 9.00	9.00	16.00	0.00
Apr 01, 2019	0.00	0.00	0.00	2019 45.00	2019 9.00	9.00	36.00	0.00
May 01, 2019	?	0.00	0.00	2019 36.00	2019 7.00	7.00	29.00	0.00

Skenario 2

Time	(Ton/mo)				Stock KUU	(Ton/mo)			
	Order UU	Stock UU	Prod			Sales	Demand	OS	LS
Jan 01, 2017	63.33	0.00	20.00		2017 20.00	20170.00	28.00	0.00	8.00
Feb 01, 2017	60.00	0.00	20.00		2017 20.00	20170.00	21.00	0.00	1.00
Mar 01, 2017	60.00	0.00	19.00		2017 20.00	20178.00	18.00	2.00	0.00
Apr 01, 2017	60.00	63.33	19.00		2017 21.00	20179.00	19.00	2.00	0.00
May 01, 2017	56.67	60.00	18.00		2017 21.00	20171.00	21.00	0.00	0.00
Jun 01, 2017	56.67	60.00	18.00		2017 18.00	20178.00	21.00	0.00	3.00
Jul 01, 2017	56.67	60.00	18.00		2017 18.00	20178.00	21.00	0.00	3.00
Aug 01, 2017	53.33	56.67	17.00		2017 18.00	20177.00	17.00	1.00	0.00
Sep 01, 2017	53.33	56.67	17.00		2017 18.00	20178.00	24.00	0.00	6.00
Oct 01, 2017	53.33	56.67	17.00		2017 17.00	20177.00	17.00	0.00	0.00
Nov 01, 2017	50.00	53.33	16.00		2017 17.00	20177.00	18.00	0.00	1.00
Dec 01, 2017	50.00	53.33	16.00		2017 16.00	20176.00	20.00	0.00	4.00
Jan 01, 2018	50.00	53.33	16.00		2018 16.00	20183.00	3.00	13.00	0.00
Feb 01, 2018	46.67	50.00	15.00		2018 29.00	20187.00	7.00	22.00	0.00
Mar 01, 2018	46.67	50.00	15.00		2018 37.00	20186.00	16.00	21.00	0.00
Apr 01, 2018	46.67	50.00	15.00		2018 36.00	20183.00	23.00	13.00	0.00
May 01, 2018	43.33	46.67	14.00		2018 28.00	20180.00	20.00	8.00	0.00
Jun 01, 2018	43.33	46.67	14.00		2018 22.00	20183.00	3.00	19.00	0.00
Jul 01, 2018	43.33	46.67	14.00		2018 33.00	20187.00	17.00	16.00	0.00
Aug 01, 2018	40.00	43.33	13.00		2018 30.00	20188.00	18.00	12.00	0.00
Sep 01, 2018	40.00	43.33	13.00		2018 25.00	20181.00	21.00	4.00	0.00
Oct 01, 2018	40.00	43.33	13.00		2018 17.00	20187.00	19.00	0.00	2.00
Nov 01, 2018	36.67	40.00	12.00		2018 13.00	20183.00	19.00	0.00	6.00
Dec 01, 2018	36.67	40.00	12.00		2018 12.00	20182.00	17.00	0.00	5.00
Jan 01, 2019	36.67	40.00	12.00		2019 12.00	20190.00	10.00	2.00	0.00
Feb 01, 2019	33.33	36.67	11.00		2019 14.00	20194.00	16.00	0.00	2.00
Mar 01, 2019	33.33	36.67	11.00		2019 11.00	20199.00	9.00	2.00	0.00
Apr 01, 2019	33.33	36.67	11.00		2019 13.00	20199.00	9.00	4.00	0.00
May 01, 2019	?	33.33	?		2019 15.00	20197.00	7.00	8.00	0.00

Skenario 3

Time	(Ton/mo)				Stok Keripik 2	(Ton/mo)			
	Inv. Adj	Order UU	Stock UU	Prod		Sales 2	Demand 2	OS	LS
Jan 01, 2017	28.00	82.31	82.31	24.69	2017 28.00	20128.00	28.00	0.00	0.00
Feb 01, 2017	17.31	57.69	82.31	24.69	2017 24.69	20121.00	21.00	3.69	0.00
Mar 01, 2017	7.62	25.64	82.31	24.69	2017 28.38	20178.00	18.00	10.38	0.00
Apr 01, 2017	2.92	25.64	82.31	24.69	2017 35.08	20179.00	19.00	16.08	0.00
May 01, 2017	1.23	25.64	57.69	17.31	2017 40.77	20121.00	21.00	19.77	0.00
Jun 01, 2017	4.92	25.64	25.64	7.69	2017 37.08	20121.00	21.00	16.08	0.00
Jul 01, 2017	18.23	60.77	25.64	7.69	2017 23.77	20121.00	21.00	2.77	0.00
Aug 01, 2017	17.00	56.67	25.64	7.69	2017 10.46	20170.46	17.00	0.00	6.54
Sep 01, 2017	24.00	80.00	25.64	7.69	2017 7.69	20177.69	24.00	0.00	16.31
Oct 01, 2017	17.00	56.67	60.77	18.23	2017 7.69	20177.69	17.00	0.00	9.31
Nov 01, 2017	17.77	59.23	56.67	17.00	2017 18.23	20178.00	18.00	0.23	0.00
Dec 01, 2017	20.00	66.67	80.00	24.00	2017 17.23	20177.23	20.00	0.00	2.77
Jan 01, 2018	-18.00	25.64	56.67	17.00	2018 24.00	20183.00	3.00	21.00	0.00
Feb 01, 2018	-24.00	25.64	59.23	17.77	2018 38.00	20187.00	7.00	31.00	0.00
Mar 01, 2018	-16.77	25.64	66.67	20.00	2018 48.77	20186.00	16.00	32.77	0.00
Apr 01, 2018	-6.77	25.64	25.64	7.69	2018 52.77	20183.00	23.00	29.77	0.00
May 01, 2018	2.54	25.64	25.64	7.69	2018 37.46	20180.00	20.00	17.46	0.00
Jun 01, 2018	-19.15	25.64	25.64	7.69	2018 25.15	20183.00	3.00	22.15	0.00
Jul 01, 2018	4.16	25.64	25.64	7.69	2018 29.84	20187.00	17.00	12.84	0.00
Aug 01, 2018	15.46	51.55	25.64	7.69	2018 20.54	20188.00	18.00	2.54	0.00
Sep 01, 2018	21.00	70.00	25.64	7.69	2018 10.23	20180.23	21.00	0.00	10.77
Oct 01, 2018	19.00	63.33	25.64	7.69	2018 7.69	20187.69	19.00	0.00	11.31
Nov 01, 2018	19.00	63.33	51.55	15.46	2018 7.69	20187.69	19.00	0.00	11.31
Dec 01, 2018	17.00	56.67	70.00	21.00	2018 15.46	20185.46	17.00	0.00	1.54
Jan 01, 2019	-1.00	25.64	63.33	19.00	2019 21.00	20190.00	10.00	11.00	0.00
Feb 01, 2019	2.00	25.64	63.33	19.00	2019 30.00	20196.00	16.00	14.00	0.00
Mar 01, 2019	-15.00	25.64	56.67	17.00	2019 33.00	20199.00	9.00	24.00	0.00
Apr 01, 2019	-23.00	25.64	25.64	7.69	2019 41.00	20199.00	9.00	32.00	0.00
May 01, 2019	-25.69	25.64	25.64	7.69	2019 39.69	20197.00	7.00	32.69	0.00

Skenario 4

Time	(Ton/mo)				Stok Keripik 3	(Ton/mo)			
	InvAdj	Order UU	Stock UU	Prod UU		Sales 3	Demand 3	OS	LS
Jan 01, 2017	28.00	63.33	63.33	19.00	2017 28.00	20128.00	28.00	0.00	0.00
Feb 01, 2017	21.00	60.00	63.33	19.00	2017 19.00	20179.00	21.00	0.00	2.00
Mar 01, 2017	17.00	60.00	63.33	19.00	2017 19.00	20178.00	18.00	1.00	0.00
Apr 01, 2017	18.00	60.00	63.33	19.00	2017 20.00	20179.00	19.00	1.00	0.00
May 01, 2017	21.00	70.00	60.00	18.00	2017 20.00	20120.00	21.00	0.00	1.00
Jun 01, 2017	21.00	70.00	60.00	18.00	2017 18.00	20178.00	21.00	0.00	3.00
Jul 01, 2017	21.00	56.67	60.00	18.00	2017 18.00	20178.00	21.00	0.00	3.00
Aug 01, 2017	16.00	53.33	70.00	21.00	2017 18.00	20177.00	17.00	1.00	0.00
Sep 01, 2017	24.00	53.33	70.00	21.00	2017 22.00	20122.00	24.00	0.00	2.00
Oct 01, 2017	13.00	53.33	56.67	17.00	2017 21.00	20177.00	17.00	4.00	0.00
Nov 01, 2017	15.00	50.00	53.33	16.00	2017 21.00	20178.00	18.00	3.00	0.00
Dec 01, 2017	20.00	50.00	53.33	16.00	2017 19.00	20179.00	20.00	0.00	1.00
Jan 01, 2018	-10.00	25.64	53.33	16.00	2018 16.00	20183.00	3.00	13.00	0.00
Feb 01, 2018	-15.00	25.64	50.00	15.00	2018 29.00	20187.00	7.00	22.00	0.00
Mar 01, 2018	5.00	25.64	50.00	15.00	2018 37.00	20186.00	16.00	21.00	0.00
Apr 01, 2018	10.00	33.33	25.64	7.69	2018 36.00	20183.00	23.00	13.00	0.00
May 01, 2018	19.31	64.36	25.64	7.69	2018 20.69	20180.00	20.00	0.69	0.00
Jun 01, 2018	-2.38	25.64	25.64	7.69	2018 8.38	20183.00	3.00	5.38	0.00
Jul 01, 2018	17.00	56.67	33.33	10.00	2018 13.08	20183.08	17.00	0.00	3.92
Aug 01, 2018	18.00	40.00	64.36	19.31	2018 10.00	20180.00	18.00	0.00	8.00
Sep 01, 2018	21.00	40.00	25.64	7.69	2018 19.31	20189.31	21.00	0.00	1.69
Oct 01, 2018	19.00	40.00	56.67	17.00	2018 7.69	20187.69	19.00	0.00	11.31
Nov 01, 2018	19.00	36.67	40.00	12.00	2018 17.00	20187.00	19.00	0.00	2.00
Dec 01, 2018	17.00	36.67	40.00	12.00	2018 12.00	20182.00	17.00	0.00	5.00
Jan 01, 2019	8.00	26.67	40.00	12.00	2019 12.00	20190.00	10.00	2.00	0.00
Feb 01, 2019	16.00	53.33	36.67	11.00	2019 14.00	20194.00	16.00	0.00	2.00
Mar 01, 2019	7.00	25.64	36.67	11.00	2019 11.00	20199.00	9.00	2.00	0.00
Apr 01, 2019	5.00	25.64	26.67	8.00	2019 13.00	20199.00	9.00	4.00	0.00
May 01, 2019	2.00	?	53.33	16.00	2019 12.00	20197.00	7.00	5.00	0.00