

# LAMPIRAN

## Peramalan Untuk Produk Atlanta Cofee Table

Forecast Result for atlanta									
12/12/2006 Month	Actual Data	Forecast by 3-MAT	Forecast Error	CFE	MAD	MSE	MAPE (%)	Tracking Signal	R- square
1	175								
2	186								
3	192								
4	200	201.3333	1.33333	-1.333328	1.333328	1.777764	0.6666641	-1	1
5	193	206.6667	13.6667	-15	7.5	94.27784	3.873921	-2	1
6	204	196	7.99997	-7.000031	7.666656	84.18507	3.889798	0.9130487	1
7	210	203.0001	6.99992	-1.07E-04	7.499973	75.38853	3.750673	-1.42E-05	0.38607
8	219	219.3335	0.33345	0.3335571	6.066669	60.33306	3.030991	-5.50E-02	0.78387
9	206	226.0002	20.0002	-20.33374	8.388921	116.9454	4.143963	-2.42388	1
10	218	207.6669	10.3331	-10.00064	8.666661	115.4922	4.229105	-1.153921	1
11	225	213.3336	11.6664	1.665756	9.041628	118.0688	4.3486	0.1842319	0.84876
12	228	235.3336	7.33362	-5.667862	8.851849	110.9258	4.222811	0.6403027	1
13	213	233.667	-20.667	-26.33482	10.03336	142.5456	4.77081	-2.624726	1
14	227	210.0003	16.9997	-9.335144	10.66666	155.8586	5.017904	0.8751701	1
15	236	221.667	14.333	4.997818	10.97219	159.9899	5.105853	0.4554988	0.983
16	244	248.3337	4.33374	0.6640778	10.46154	149.1277	4.84972	6.35E-02	1
17	224	252.6671	28.6671	-28.00301	11.78193	197.1758	5.41744	-2.380817	1
18	240	222.6671	17.3329	-10.67012	12.13333	204.0594	5.537747	0.8794057	1
19		232.0005							
20		230.0007							
21		228.001							
CFE		-10.67012							
MAD		12.13333							
MSE		204.0594							
MAPE		5.537747							
Trk.Signal		-0.879406							
R-square		1							
		m=3							

**Forecast Result for atlanta**

12/12/2006 Month	Actual Data	Forecast by SEST	Forecast Error	CFE	MAD	MSE	MAPE (%)	Tracking Signal	R- square
1	175								
2	186	175	11	11	11	121	5.913979	1	1
3	192	180.6166	11.3834	22.38341	11.1917	125.291	5.921418	2	1
4	200	187.9755	12.0245	34.40787	11.46929	131.7232	5.951689	3	1
5	193	197.2623	4.26233	30.14554	9.667549	103.3343	5.015882	3.118219	1
6	204	199.9237	4.07626	34.2218	8.549292	85.9906	4.412339	4.002882	1
7	210	206.2435	3.75647	37.97827	7.750488	74.01067	3.975082	4.900114	1
8	219	212.9732	6.02684	44.00511	7.504253	68.62669	3.800353	5.864023	1
9	206	221.3902	15.3902	28.6149	8.489998	89.65569	4.259181	3.370425	1
10	218	219.7191	1.71909	26.89581	7.737674	80.02231	3.873558	3.475956	1
11	225	222.8646	2.13542	29.03123	7.177449	72.47608	3.58111	4.044785	1
12	228	227.7365	0.26353	29.29477	6.548912	65.89366	3.266062	4.473227	1
13	213	231.9528	18.9528	10.34196	7.582569	90.33659	3.735393	1.363913	1
14	227	226.3943	0.60565	10.94762	7.045883	83.41584	3.468578	1.553761	1
15	236	228.1577	7.84233	18.78995	7.102772	81.85058	3.458181	2.645439	1
16	244	233.7012	10.2988	29.08876	7.315842	83.46491	3.509024	3.976133	1
17	224	241.6016	17.6016	11.48714	7.958703	97.61192	3.780827	1.443343	1
18	240	236.7041	3.2959	14.78304	7.684421	92.50904	3.639207	1.923767	1
19		240.0021							
20		242.0806							
21		244.1591							
CFE		14.78304							
MAD		7.684421							
MSE		92.50904							
MAPE		3.639207							
Trk.Signal		1.923767							
R-square		1							
		Alpha=0.37							
		Beta=0.38							
		F(0)=175							
		T(0)=0							

Forecast Result for atlanta

12/12/2006 Month	Actual Data	Forecast by DES	Forecast Error	CFE	MAD	MSE	MAPE (%)	Tracking Signal	R- square
1	175								
2	186	175	11	11	11	121	5.913979	1	1
3	192	182.3964	9.60361	20.60361	10.3018	106.6146	5.457929	2	1
4	200	189.0935	10.9065	31.51012	10.50337	110.7271	5.456371	3	1
5	193	196.644	-3.644	27.86612	8.788528	86.36498	4.564298	3.170738	1
6	204	194.4384	9.56158	37.4277	8.94314	87.37676	4.588849	4.185074	1
7	210	200.7962	9.20384	46.63155	8.98659	86.93243	4.554504	5.189014	1
8	219	207.1908	11.8092	58.44073	9.389818	94.43593	4.674193	6.223841	1
9	206	215.3385	9.33849	49.10225	9.383402	93.53236	4.656574	5.232883	1
10	218	209.3233	8.67671	57.77896	9.304881	91.50491	4.581415	6.209532	1
11	225	214.9626	10.0374	67.81635	9.378131	92.42933	4.56938	7.231328	1
12	228	221.8945	6.10555	73.92189	9.080624	87.41554	4.397425	8.140618	1
13	213	226.2244	13.2244	60.69748	9.425939	94.70467	4.548359	6.43941	1
14	227	217.4726	9.52739	70.22487	9.433743	94.40209	4.521338	7.444009	1
15	236	223.5953	12.4047	82.62961	9.645957	98.65034	4.573832	8.566242	1
16	244	232.1346	11.8654	94.49504	9.793921	101.4595	4.593102	9.648335	1
17	224	240.3896	16.3896	78.10548	10.20615	111.9069	4.763331	7.652787	1
18	240	229.6367	10.3633	88.46878	10.21539	111.6417	4.737137	8.66034	1
19		236.2566							
20		236.2566							
21		236.2566							
CFE		88.46878							
MAD		10.21539							
MSE		111.6417							
MAPE		4.737137							
Trk.Signal		8.66034							
R-square		1							
		Alpha=0.82							
		F(0)=175							
		F'(0)=175							

Forecast Result for atlanta

12/12/2006 Month	Actual Data	Forecast by DEST	Forecast Error	CFE	MAD	MSE	MAPE (%)	Tracking Signal	R- square
1	175								
2	186	175	11	11	11	121	5.913979	1	1
3	192	181.16	10.84	21.84	10.92	119.2528	5.779905	2	1
4	200	188.0928	11.90718	33.74718	11.24906	126.7622	5.837801	3	1
5	193	196.4731	-3.47308	30.27409	9.305065	98.0872	4.828231	3.253507	1
6	204	197.174	6.82605	37.10014	8.809262	87.78875	4.531806	4.211493	1
7	210	203.37	6.629959	43.7301	8.446045	80.48335	4.302692	5.177584	1
8	219	209.9915	9.008545	52.73865	8.526402	80.57915	4.275663	6.185334	1
9	206	218.4647	-12.4647	40.27397	9.018686	89.92777	4.497557	4.465614	1
10	218	215.6192	2.380829	42.6548	8.281147	80.56561	4.119176	5.150833	1
11	225	220.1099	4.890091	47.54489	7.942041	74.90034	3.924596	5.986483	1
12	228	226.1925	1.807495	49.35239	7.384355	68.38823	3.639884	6.683371	1
13	213	230.9322	-17.9322	31.42015	8.263345	89.4863	4.038134	3.802353	1
14	227	224.7594	2.240585	33.66074	7.800056	82.98891	3.803435	4.315448	1
15	236	228.4775	7.522507	41.18324	7.780231	81.10314	3.75944	5.293319	1
16	244	235.3291	8.670898	49.85414	7.839609	80.70856	3.74572	6.359264	1
17	224	243.4136	-19.4136	30.44058	8.562981	99.21967	4.053286	3.554905	1
18	240	236.4505	3.549469	33.99005	8.268068	94.12432	3.901854	4.111003	1
19		240.8248							
20		243.4896							
21		246.1544							
CFE		33.99005							
MAD		8.268068							
MSE		94.12432							
MAPE		3.901854							
Trk.Signal		4.111003							
R-square		1							
		Alpha=0.28							
		F(0)=175							
		F'(0)=175							

Forecast Result for atlanta

12/12/2006 Month	Actual Data	Forecast by LR	Forecast Error	CFE	MAD	MSE	MAPE (%)	Tracking Signal	R-sqaure
1	175	184.9473	-9.947342	-9.947342	9.947342	98.94961	5.6842	-1	1
2	186	188.2869	-2.286865	-12.23421	6.117104	52.08968	3.45685	-2	1
3	192	191.6264	0.3735962	-11.86061	4.202601	34.77298	2.36943	-2.822207	0.465447
4	200	194.9659	5.034073	-6.826538	4.410469	32.41521	2.40633	-1.547803	0.202593
5	193	198.3055	-5.30545	-12.13199	4.589465	31.56173	2.47485	-2.643443	0.401829
6	204	201.645	2.355011	-9.776978	4.217056	27.22579	2.25478	-2.318437	0.395811
7	210	204.9845	5.015488	-4.76149	4.331118	26.92998	2.27386	-1.099367	0.384096
8	219	208.324	10.67596	5.914474	5.124224	37.81076	2.59898	1.154219	0.348687
9	206	211.6636	-5.663559	0.2509155	5.18415	37.17355	2.61569	4.84E-02	0.470572
10	218	215.0031	2.996918	3.247833	4.965426	34.35435	2.49159	0.6540895	0.520384
11	225	218.3426	6.657379	9.905212	5.11924	35.26038	2.53407	1.934899	0.531541
12	228	221.6821	6.317856	16.22307	5.219125	35.64829	2.55381	3.108388	0.553928
13	213	225.0217	-12.02167	4.201401	5.742398	44.02308	2.79152	0.7316457	0.680945
14	227	228.3612	-1.361206	2.840195	5.429455	41.01092	2.63495	0.5231086	0.742096
15	236	231.7007	4.299271	7.139465	5.35411	39.50911	2.58074	1.333455	0.742114
16	244	235.0403	8.959747	16.09921	5.579462	42.05711	2.64894	2.885442	0.708603
17	224	238.3798	-14.37978	1.719437	6.097127	51.74657	2.87074	0.2820077	0.822397
18	240	241.7193	-1.719299	1.37E-04	5.853915	49.03598	2.75106	2.35E-05	0.859586
19		245.0588							
20		248.3984							
21		251.7379							
CFE		1.37E-04							
MAD		5.853915							
MSE		49.03598							
MAPE		2.751056							
Trk Signal		2.35E-05							
R-sqaure		0.859586							
		a=181.6078							
		b=3.3395							

Forecast Result for atlanta

12/12/2006 Month	Actual Data	Forecast by HWA	Forecast Error	CFE	MAD	MSE	MAPE (%)	Tracking Signal	R-sqaure
1	175								
2	186								
3	192								
4	200								
5	193	175	18	18	18	324	9.32643	1	1
6	204	198.528	5.472	23.472	11.736	176.9714	6.00439	2	1
7	210	210.4245	-0.4245148	23.04749	7.965505	118.041	4.07031	2.893412	1
8	219	220.8518	-1.851807	21.19568	6.43708	89.38805	3.26413	3.292747	1
9	206	200.5629	5.437149	26.63283	6.237094	77.42296	3.13918	4.27007	1
10	218	215.4906	2.509369	29.1422	5.615807	65.56862	2.80783	5.189316	1
11	225	225.2369	-0.2368927	28.9053	4.84739	56.20969	2.42175	5.963065	1
12	228	236.1888	-8.188751	20.71655	5.26506	57.56543	2.56798	3.934723	1
13	213	213.5158	-0.5157928	20.20076	4.737364	51.19884	2.30955	4.264135	1
14	227	223.7037	3.29631	23.49707	4.593259	47.16552	2.22381	5.115555	1
15	236	232.744	3.255981	26.75305	4.471688	43.84151	2.14707	5.982764	1
16	244	244.0026	-2.56E-03	26.75049	4.099261	40.18805	1.96823	6.525686	1
17	224	228.1955	-4.195496	22.55499	4.106664	38.45068	1.96091	5.492291	1
18	240	237.2267	2.77327	25.32826	4.011421	36.25356	1.90338	6.314037	1
19		246.1687							
20		254.7713							
21		238.0259							
CFE		25.32826							
MAD		4.011421							
MSE		36.25356							
MAPE		1.90338							
Trk.Signal		6.314037							
R-sqaure		1							
		c=4							
		Alpha=0.58							
		Beta=0.2							
		Gamma=0.44							
		F(0)=188.25							
		T(0)=0							
		S(1)=-13.25							
		S(2)=-2.25							
		S(3)=3.75							
		S(4)=11.75							

## Peramalan Untuk Produk Sultan Table

Forecast Result for Sultan table									
12/13/2006 Month	Actual Data	Forecast by SA	Forecast Error	CFE	MAD	MSE	MAPE (%)	Tracking Signal	R-sqaure
1	315								
2	326	315	11	11	11	121	3.374233	1	1
3	295	320.5	-25.5	-14.5	18.25	385.625	6.009151	-	-
4	310	312	-2	-16.5	12.83333	258.4167	4.221154	0.7945206	0.2502601
5	328	311.5	16.5	0	13.75	261.875	4.423488	-1.285714	0.2661227
6	334	314.8	19.20001	19.20001	14.84	283.2281	4.688491	0	7.17E-02
7	325	318	7	26.20001	13.53334	244.1901	4.266051	1.293801	0.1235961
8	307	319	-12	14.20001	13.31429	229.8772	4.215014	1.935961	0.1668427
9	286	317.5	-31.5	17.29999	15.5875	325.1738	5.064886	1.066524	8.50E-02
10	310	314	-4	21.29999	14.3	290.8212	4.64549	-1.109863	5.39E-02
11	325	313.6	11.39999	9.899994	14.01	274.735	4.53171	-	6.15E-02
12	308	314.6364	6.636353	16.53635	13.33967	253.7629	4.315614	0.7066377	4.18E-02
13	298	314.0833	16.08334	32.61969	13.56831	254.1721	4.405737	-1.239637	4.81E-02
14	325	312.8462	12.15384	20.46585	13.4595	245.9832	4.354499	-2.404109	7.00E-02
15	312	313.7143	1.714294	22.18015	12.62056	228.6228	4.082711	-1.52055	4.70E-02
16	341	313.6	27.39999	5.219849	13.60585	263.432	4.346209	-1.757461	4.88E-02
17	277	315.3125	-38.3125	33.09265	15.15002	338.7079	4.939023	0.3836472	2.91E-02
18	319	313.0588	5.941162	27.15149	14.60832	320.8603	4.758047	-2.18433	3.48E-02
19		313.3889						-1.858631	3.00E-02
20		313.3889							
21		313.3889							
CFE		-27.15149							
MAD		14.60832							
MSE		320.8603							
MAPE		4.758047							
Trk. Signal		-1.858631							
R-sqaure		3.00E-02							



Forecast Result for Sultan table

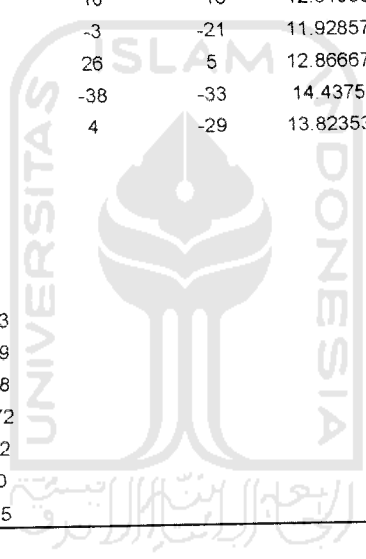
12/13/2006 Month	Actual Data	Forecast by 3-MA	Forecast Error	CFE	MAD	MSE	MAPE (%)	Tracking Signal	R-sqaure
1	315								
2	326								
3	295								
4	310	312	-2	-2	2	4	0.6451613	-1	1
5	328	310.3333	17.66666	15.66666	9.833328	158.0554	3.015669	1.59322	0.7661169
6	334	311	23	38.66666	14.22222	281.7036	4.305855	2.71875	1
7	325	324	1	39.66666	10.91666	211.5277	3.306314	3.633588	1
8	307	329	-22	17.66666	13.13333	266.0222	4.078276	1.345177	0.6545216
9	286	322	-36	18.33334	16.94444	437.6852	5.496466	-1.081968	0.2389601
10	310	306	4	14.33334	15.09524	377.4444	4.895588	0.9495276	0.2976314
11	325	301	24	9.666656	16.20833	402.2639	5.206717	0.5964004	0.3916676
12	308	307	1	10.66666	14.51852	357.679	4.664268	0.7346932	0.4087509
13	298	314.3333	16.33334	5.666687	14.7	348.5889	4.74594	0.3854889	0.3521342
14	325	310.3333	14.66666	8.999969	14.69697	336.4545	4.724747	0.6123691	0.3374441
15	312	310.3333	1.666656	10.66663	13.61111	308.6481	4.375533	0.7836705	0.341719
16	341	311.6667	29.33334	39.99997	14.82051	351.0941	4.700658	2.69896	0.3007482
17	277	326	-49	9.000031	17.2619	497.5159	5.628434	0.5213811	0.2088893
18	319	310	9	-3.05E-05	16.71111	469.7482	5.441293	-1.83E-06	0.2094205
19		312.3333							
20		312.3333							
21		312.3333							
CFE		-3.05E-05							
MAD		16.71111							
MSE		469.7482							
MAPE		5.441293							
Trk. Signal		-1.83E-06							
R-sqaure		0.2094205							
		m=3							

Forecast Result for Sultan table

12/13/2006 Month	Actual Data	Forecast by 3-WMA	Forecast Error	CFE	MAD	MSE	MAPE (%)	Tracking Signal	R-sqaure
1	315								
2	326								
3	295								
4	310	312	-2	-2	2	4	0.6451613	-1	1
5	328	310.3333	17.66666	15.66666	9.833328	158.0554	3.015669	1.59322	0.7661169
6	334	311	23	38.66666	14.22222	281.7036	4.305855	2.71875	1
7	325	324	1	39.66666	10.91666	211.5277	3.306314	3.633588	1
8	307	329	-22	17.66666	13.13333	266.0222	4.078276	1.345177	0.6545216
9	286	322	-36	18.33334	16.94444	437.6852	5.496466	-1.081968	0.2389601
10	310	306	4	14.33334	15.09524	377.4444	4.895588	0.9495276	0.2976314
11	325	301	24	9.66656	16.20833	402.2639	5.206717	0.5964004	0.3916676
12	308	307	1	10.66666	14.51852	357.679	4.664268	0.7346932	0.4087509
13	298	314.3333	16.33334	5.666687	14.7	348.5889	4.74594	0.3854889	0.3521342
14	325	310.3333	14.66666	8.999969	14.69697	336.4545	4.724747	0.6123691	0.3374441
15	312	310.3333	1.66656	10.66663	13.61111	308.6481	4.375533	0.7836705	0.341719
16	341	311.6667	29.33331	39.99994	14.82051	351.0939	4.700657	2.698958	0.3007481
17	277	326	-49	9.000061	17.2619	497.5158	5.628434	0.5213829	0.2088893
18	319	310	9	-6.10E-05	16.71111	469.748	5.441293	-3.65E-06	0.2094205
19		312.3333							
20		312.3333							
21		312.3333							
CFE		-6.10E-05							
MAD		16.71111							
MSE		469.748							
MAPE		5.441293							
Trk. Signal		-3.65E-06							
R-sqaure		0.2094205							
		m=3							
		W(1)=0.3333333							
		W(2)=0.3333333							
		W(3)=0.3333333							

**Forecast Result for Sultan table**

12/13/2006 Month	Actual Data	Forecast by SES	Forecast Error	CFE	MAD	MSE	MAPE (%)	Tracking Signal	R-sqaure
1	315							1	1
2	326	315	11	11	11	121	3.374233	1	
3	295	315	-20	-9	15.5	260.5	5.076947	-0.5806451	0.0842872
4	310	315	-5	-14	12	182	3.922266	-1.166667	0.1359217
5	328	315	13	-1	12.25	178.75	3.932553	-8.16E-02	3.50E-04
6	334	315	19	18	13.6	215.2	4.283767	1.323529	0.0640825
7	325	315	10	28	13	196	4.082626	2.153846	0.1249994
8	307	315	-8	20	12.28571	177.1429	3.87166	1.627907	4.83E-02
9	286	315	-29	-9	14.375	260.125	4.655185	-0.626087	4.89E-03
10	310	315	-5	-14	13.33333	234	4.317154	-1.05	1.04E-02
11	325	315	10	-4	13	220.6	4.193131	-0.3076923	7.26E-04
12	308	315	-7	-11	12.45455	205	4.018549	-0.8832117	4.90E-03
13	298	315	-17	-28	12.83333	212	4.159061	-2.181818	2.64E-02
14	325	315	10	-18	12.61539	203.3846	4.07582	-1.426829	9.52E-03
15	312	315	-3	-21	11.92857	189.5	3.853371	-1.760479	1.20E-02
16	341	315	26	5	12.86667	221.9333	4.104789	0.388601	5.01E-04
17	277	315	-38	-33	14.4375	298.3125	4.70564	-2.285714	1.45E-02
18	319	315	4	-29	13.82353	281.7059	4.502598	-2.097872	1.04E-02
19		315							
20		315							
21		315							
CFE		-29							
MAD		13.82353							
MSE		281.7059							
MAPE		4.502598							
Trk Signal		-2.097872							
R-sqaure		1.04E-02							
Alpha=0									
F(0)=315									







## Peramalan Untuk Produk Madrid Lamp Table

Forecast Result for MADRID TABLE									
12/13/2006	Actual	Forecast by	Forecast	CFE	MAD	MSE	MAPE	Tracking	R-sqaure
Month	Data	SA	Error				(%)	Signal	
1	351								
2	360	351	9	9	9	81	2.5	1	1
3	348	355.5	-7.5	1.5	8.25	68.625	2.327586	0.1818182	0.15625
4	372	353	19	20.5	11.83333	166.0833	3.254233	1.732394	0.5217014
5	390	357.75	32.25	52.75	16.9375	384.5781	4.507982	3.114391	7.49E-01
6	384	364.2	19.79999	72.54999	17.51	386.0704	4.637635	4.143346	0.9797007
7	375	367.5	7.5	80.04999	15.84166	331.1003	4.198029	5.05313	1
8	388	368.5714	19.42856	99.47855	16.35408	337.7244	4.313648	6.082798	1.00E+00
9	357	371	-14	85.47855	16.05982	320.0089	4.264638	5.32251	7.92E-01
10	340	369.4445	29.44446	56.03409	17.547	380.783	4.753026	3.193371	3.21E-01
11	365	366.5	-1.5	54.53409	15.9423	342.9297	4.31882	3.420716	3.07E-01
12	376	366.3636	9.636353	64.17044	15.36903	320.196	4.159187	4.175308	3.34E-01
13	355	367.1667	12.16666	52.00378	15.10217	305.8487	4.09819	3.443465	2.67E-01
14	364	366.2308	2.230774	49.77301	14.11206	282.7047	3.830087	3.526984	2.57E-01
15	412	366.0714	45.92856	95.70157	16.38467	413.1852	4.352774	5.840922	2.55E-01
16	321	369.1333	48.13333	47.56824	18.50125	540.094	5.062243	2.571083	1.04E-01
17	387	366.125	20.875	68.44324	18.6496	533.5735	5.082982	3.669956	1.18E-01
18	369	367.3529	1.647064	70.0903	17.64946	502.3464	4.810239	3.971244	1.19E-01
19		367.4445							
20		367.4445							
21		367.4445							
CFE		70.0903							
MAD		17.64946							
MSE		502.3464							
MAPE		4.810239							
Trk. Signal		3.971244							
R-sqaure		1.19E-01							

Forecast Result for MADRID TABLE

12/13/2006 Month	Actual Data	Forecast by 3-MA	Forecast Error	CFE	MAD	MSE	MAPE (%)	Tracking Signal	R-sqaure
1	351								
2	360								
3	348								
4	372	353	19	19	19	361	5.107527	1	1
5	390	360	30	49	24.5	630.5	6.399917	2	1
6	384	370	14	63	21	485.6667	5.481889	3	1
7	375	382	-7	56	17.5	376.5	4.578084	3.2	1
8	388	383	5	61	15	306.2	3.920199	4.066667	1
9	357	382.3333	25.33334	35.66666	16.72222	362.1297	4.449528	2.13289	1
10	340	373.3333	33.33334	2.333313	19.09524	469.1272	5.214442	0.1221934	0.4235921
11	365	361.6667	3.333344	5.666656	17.125	411.8752	4.676792	0.3308996	0.4611356
12	376	354	22	27.66666	17.66667	419.889	4.807267	1.566037	0.6170704
13	355	360.3333	5.333344	22.33331	16.43334	380.7446	4.476775	1.359025	0.5611414
14	364	365.3333	1.333344	20.99997	15.06061	346.2931	4.103096	1.394364	0.5512663
15	412	365	47	67.99997	17.72223	501.5186	4.711818	3.836988	0.4119875
16	321	377	-56	11.99997	20.66667	704.171	5.691331	0.5806436	0.2078722
17	387	365.6667	21.33334	33.33331	20.71429	686.381	5.678557	1.609194	0.2097741
18	369	373.3333	4.333344	2.90E+01	19.62223	641.8742	5.378276	1.48E+00	0.2101244
19		359							
20		359							
21		359							
CFE		2.90E+01							
MAD		19.62223							
MSE		641.8742							
MAPE		5.378276							
Trk.Signal		1.48E+00							
R-sqaure		0.2101244							
		m=3							

**Forecast Result for MADRID TABLE**

12/13/2006 Month	Actual Data	Forecast by 3-WMA	Forecast Error	CFE	MAD	MSE	MAPE (%)	Tracking Signal	R-sqaure
1	351								
2	360								
3	348								
4	372	353	19	19	19	361	5.107527	1	1
5	390	360	30	49	24.5	630.5	6.399917	2	1
6	384	370	14	63	21	485.6667	5.481889	3	1
7	375	382	-7	56	17.5	376.5	4.578084	3.2	1
8	388	383	5	61	15	306.2	3.920199	4.066667	1
9	357	382.3333	25.33334	35.66666	16.72222	362.1297	4.449528	2.13289	1
10	340	373.3333	33.33334	2.333313	19.09524	469.1272	5.214442	0.1221934	0.4235921
11	365	361.6667	3.333313	5.666626	17.125	411.8752	4.676791	0.3308979	0.4611353
12	376	354	22	27.66663	17.66667	419.889	4.807265	1.566036	0.6170701
13	355	360.3333	5.333344	22.33328	16.43333	380.7446	4.476774	1.359023	0.5611412
14	364	365.3333	1.333344	20.99994	15.06061	346.2931	4.103095	1.394362	0.5512661
15	412	365	47	67.99994	17.72222	501.5186	4.711817	3.836987	0.4119874
16	321	377	-56	11.99994	20.66667	704.171	5.69133	0.5806422	0.2078721
17	387	365.6667	21.33331	33.33325	20.71428	686.381	5.678555	1.609192	0.209774
18	369	373.3333	4.333344	2.90E+01	19.62222	641.8741	5.378274	1.48E+00	0.2101243
19		359							
20		359							
21		359							
CFE		2.90E+01							
MAD		19.62222							
MSE		641.8741							
MAPE		5.378274							
Trk. Signal		1.48E+00							
R-sqaure		0.2101243							
		m=3							
		W(1)=0.3333333							
		W(2)=0.3333333							
		W(3)=0.3333333							



**Forecast Result for MADRID TABLE**

12/13/2006 Month	Actual Data	Forecast by SES	Forecast Error	CFE	MAD	MSE	MAPE (%)	Tracking Signal	R-sqaure
1	351								
2	360	351	9	9	9	81	2.5	1	1
3	348	352.26	-4.26001	4.73999	6.630005	49.57384	1.86207	0.7149301	0.1670495
4	372	351.6636	20.3364	25.07639	11.1988	170.9056	3.063638	2.239202	0.7305658
5	390	354.5107	35.48929	60.56567	17.27142	443.0516	4.572683	3.51E+00	9.60E-01
6	384	359.4792	24.52078	85.08646	18.72129	474.695	4.93527	4.544902	1
7	375	362.9121	12.08786	97.17432	17.61572	419.9319	4.649963	5.51634	1
8	388	364.6044	23.39557	120.5699	18.44142	438.1349	4.847081	6.537995	1.00E+00
9	357	367.8798	-10.87982	109.6901	17.49622	398.1643	4.622142	6.269359	1.00E+00
10	340	366.3567	-26.35666	83.3334	18.48071	431.1098	4.969899	4.50921	4.41E-01
11	365	362.6667	2.333282	85.66669	16.86597	388.5432	4.536835	5.079263	4.30E-01
12	376	362.9934	13.00662	98.67331	16.51512	368.6004	4.438869	5.974726	4.82E-01
13	355	364.8143	-9.814301	88.85901	15.95672	345.9104	4.299345	5.568753	3.80E-01
14	364	363.4403	0.5596924	89.4187	14.77233	319.326	3.980455	6.053121	3.67E-01
15	412	363.5187	48.48132	137.9	17.18011	464.4055	4.536659	8.026723	3.82E-01
16	321	370.3061	-49.30606	88.59396	19.32184	595.5176	5.258224	4.585171	1.50E-01
17	387	363.4032	23.5968	112.1908	19.58903	593.0983	5.310671	5.727224	1.79E-01
18	369	366.7068	2.293243	114.484	18.57163	558.5195	5.034836	6.164456	1.80E-01
19		367.0278							
20		367.0278							
21		367.0278							
CFE		114.484							
MAD		18.57163							
MSE		558.5195							
MAPE		5.034836							
Trk.Signal		6.164456							
R-sqaure		1.80E-01							
		Alpha=0.14							
		F(0)=351							





Combined Report for 19

	Decision Variable	Solution Value	Unit Cost or Profit c(j)	Total Contribution	Reduced Cost	Basis Status	Allowable Min. c(j)	Allowable Max. c(j)
1	X1	247	318.461,00	78.659.860,00	0	basic	211.726,80	M
2	X2	303	420.129,00	127.299.100,00	0	basic	192.590,40	M
3	X3	332,8945	170.510,00	56.761.850,00	0	basic	0	256.466,30
4	X4	17	264.327,00	4.493.559,00	0	basic	172.080,20	M
5	X5	12	1.166.468,00	13.997.620,00	0	basic	146.074,30	M
6	X6	90	875.810,00	78.822.900,00	0	basic	177.207,80	M
7	X7	21	765.749,00	16.080.730,00	0	basic	194.675,80	M
8	X8	34	697.621,00	23.719.110,00	0	basic	168.007,60	M
	Objective Function		(Max.) =	399.834.700,00				
	Constraint	Left Hand Side	Direction	Right Hand Side	Slack or Surplus	Shadow Price	Allowable Min. RHS	Allowable Max. RHS
1	C1	24.517,56	<=	100.800,00	76.282,44	0	24.517,56	M
2	C2	15.721,10	<=	20.160,00	4.438,90	0	15.721,10	M
3	C3	10.281,88	<=	50.400,00	40.118,12	0	10.281,88	M
4	C4	18.205,15	<=	40.320,00	22.114,85	0	18.205,15	M
5	C5	12.373,79	<=	80.640,00	68.266,21	0	12.373,79	M
6	C6	12.003,91	<=	60.480,00	48.476,09	0	12.003,91	M
7	C7	40.206,54	<=	50.400,00	10.193,46	0	40.206,55	M
8	C8	19.419,02	<=	70.560,00	51.140,98	0	19.419,02	M
9	C9	80.640,01	<=	80.640,00	0	2.453,38	57.503,83	83.079,83
10	C10	34.073,63	<=	50.400,00	16.326,37	0	34.073,63	M
11	C11	52.652,14	<=	100.800,00	48.147,85	0	52.652,15	M
12	C12	247	<=	247	0	106.734,20	218,7285	511,2303
13	C13	303	<=	303	0	227.538,60	271,9193	597,7283
14	C14	332,8945	<=	368	35,1055	0	332,8945	M
15	C15	17	<=	17	0	92.246,84	0	346,857
16	C16	12	<=	12	0	1.020.394,00	0	400,5819
17	C17	90	<=	90	0	698.602,30	56,2214	410,3124
18	C18	21	<=	21	0	571.073,20	0	312,5711
19	C19	34	<=	34	0	529.613,40	0	371,8529

Combined Report for 20

	Decision Variable	Solution Value	Unit Cost or Profit c(j)	Total Contribution	Reduced Cost	Basis Status	Allowable Min. c(j)	Allowable Max. c(j)
1	X1	255	318.468,00	81.209.340,00	0	basic	211.735,50	M
2	X2	313	420.136,00	131.502.600,00	0	basic	192.598,30	M
3	X3	311,6657	170.517,00	53.144.310,00	0	basic	0	256.471,90
4	X4	17	264.334,00	4.493.678,00	0	basic	172.087,20	M
5	X5	12	1.166.475,00	13.997.700,00	0	basic	146.080,30	M
6	X6	90	875.817,00	78.823.530,00	0	basic	177.215,00	M
7	X7	21	765.756,00	16.080.880,00	0	basic	194.683,80	M
8	X8	34	697.628,00	23.719.350,00	0	basic	168.014,40	M
	Objective Function		(Max.) =	402.971.300,00				
	Constraint	Left Hand Side	Direction	Right Hand Side	Slack or Surplus	Shadow Price	Allowable Min. RHS	Allowable Max. RHS
1	C1	24.800,75	<=	100.800,00	75.999,24	0	24.800,76	M
2	C2	15.849,99	<=	20.160,00	4.310,01	0	15.849,99	M
3	C3	10.326,48	<=	50.400,00	40.073,52	0	10.326,48	M
4	C4	18.499,25	<=	40.320,00	21.820,74	0	18.499,26	M
5	C5	12.280,59	<=	80.640,00	68.359,41	0	12.280,59	M
6	C6	11.959,89	<=	60.480,00	48.520,11	0	11.959,89	M
7	C7	40.667,50	<=	50.400,00	9.732,50	0	40.667,50	M
8	C8	19.593,92	<=	70.560,00	50.966,08	0	19.593,92	M
9	C9	80.640,00	<=	80.640,00	0	2.453,48	58.979,23	84.555,23
10	C10	34.001,64	<=	50.400,00	16.398,36	0	34.001,64	M
11	C11	52.586,65	<=	100.800,00	48.213,34	0	52.586,66	M
12	C12	255	<=	255	0	106.732,50	209,6323	505,9938
13	C13	313	<=	313	0	227.537,70	263,1245	588,9333
14	C14	311,6657	<=	368	56,3343	0	311,6657	M
15	C15	17	<=	17	0	92.246,77	0	325,8219
16	C16	12	<=	12	0	1.020.395,00	0	375,802
17	C17	90	<=	90	0	698.602,00	35,7949	389,886
18	C18	21	<=	21	0	571.072,20	0	293,9776
19	C19	34	<=	34	0	529.613,60	0	350,308

Combined Report for 21

	Decision Variable	Solution Value	Unit Cost or Profit c(j)	Total Contribution	Reduced Cost	Basis Status	Allowable Min. c(j)	Allowable Max. c(j)
1	X1	239	318.457,00	76.111.220,00	0	basic	211.721,80	M
2	X2	301	420.125,00	126.457.600,00	0	basic	192.585,90	M
3	X3	345,0873	170.506,00	58.839.460,00	0	basic	0	256.463,00
4	X4	17	264.323,00	4.493.491,00	0	basic	172.076,10	M
5	X5	12	1.166.464,00	13.997.570,00	0	basic	146.070,90	M
6	X6	90	875.806,00	78.822.540,00	0	basic	177.203,60	M
7	X7	21	765.745,00	16.080.650,00	0	basic	194.671,30	M
8	X8	34	697.617,00	23.718.980,00	0	basic	168.003,60	M
	Objective Function		(Max.) =	398.521.500,00				
	Constraint	Left Hand Side	Direction	Right Hand Side	Slack or Surplus	Shadow Price	Allowable Min. RHS	Allowable Max. RHS
1	C1	24.290,19	<=	100.800,00	76.509,81	0	24.290,19	M
2	C2	15.637,45	<=	20.160,00	4.522,55	0	15.637,46	M
3	C3	10.246,65	<=	50.400,00	40.153,35	0	10.246,65	M
4	C4	17.985,62	<=	40.320,00	22.334,38	0	17.985,63	M
5	C5	12.421,45	<=	80.640,00	68.218,55	0	12.421,45	M
6	C6	12.038,81	<=	60.480,00	48.441,19	0	12.038,81	M
7	C7	39.867,45	<=	50.400,00	10.532,54	0	39.867,45	M
8	C8	19.298,72	<=	70.560,00	51.261,28	0	19.298,72	M
9	C9	80.640,01	<=	80.640,00	0	2.453,32	56.656,43	82.232,43
10	C10	34.144,28	<=	50.400,00	16.255,72	0	34.144,28	M
11	C11	52.701,12	<=	100.800,00	48.098,88	0	52.701,13	M
12	C12	239	<=	239	0	106.735,20	220,5477	512,0201
13	C13	301	<=	301	0	227.539,10	280,7143	606,5232
14	C14	345,0873	<=	368	22,9127	0	345,0873	M
15	C15	17	<=	17	0	92.246,88	0	358,9385
16	C16	12	<=	12	0	1.020.393,00	0	414,8144
17	C17	90	<=	90	0	698.602,40	67,9533	422,0444
18	C18	21	<=	21	0	571.073,80	0,9316	323,2504
19	C19	34	<=	34	0	529.613,40	10,746	384,2273



# PT. AMALIA SURYA CEMERLANG

Jl. Raya Klaten - Solo Km. 5 Ketandan - Klaten - Jawa Tengah - Indonesia  
Telp. 62-272-328013 - 328014  
Fax. 62-272-328013

## SURAT KETERANGAN

No : 005/SK/Pers- Umum/ASU/III/2006

Yang bertanda tangan dibawah ini atas nama Pimpinan PT. Amalia Surya Cemerlang, menerangkan bahwa :


Nama : YUNI AJENG TIYASTUTI  
No. Mahasiswa : 01522110  
Fakultas : Teknik Industri  
Jurusan : Teknologi Industri  
Universitas : Universitas Islam Indonesia

Telah melaksanakan penelitian terhitung mulai tanggal 01 Januari sampai 10 Maret 2006, guna menyusun Skripsi, dengan judul "**Optimalisasi Kombinasi Produk untuk Memperoleh Keuntungan yang Maksimal Dengan Metode Integer Linear Programing.**"

Demikian surat keterangan ini dibuat untuk dapat dipergunakan sebagaimana mestinya.

Klaten, 30 April 2006

Personnel & General Affair,

  
AMALIA  
SURYA  
CEMERLANG

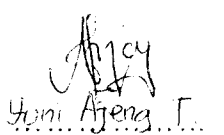
Riza Rahmasari



## KARTU KONSULTASI BIMBINGAN TUGAS AKHIR






Nama : Yuni Ajeng Tjayastuti  
 Nomor Mhs : 01 522 110  
 Pembimbing I : Ir. Sunaryo MP  
 Pembimbing II : -  
 Proposal Disetujui Tanggal : 20 Jan 2006

Tanda Tangan Mhs

  
 Nama Mhs

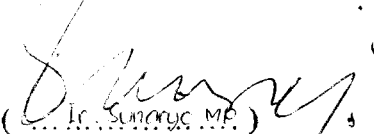
Judul Tugas Akhir

OPTIMALISASI KOMBINASI PRODUK UNTUK  
 MEMPEROLEH KEUNTUNGAN YANG MAKSIMAL  
 DENGAN METODE INTEER LINEAR PROGRAMING

No	Tanggal	Keterangan	T T. Pembimbing
1	20 Jan 2006	ACC proposal TA	
2	9 Mar 2006	Bimbingan Bab I, II, III	
3	14 April 2006	Revisi Bab I, II, III	
4	3 Okt 2006	Bimbingan Bab IV - VI	
5	19 11 Des 2006	ACC - skripsi	

Pembimbing I

Pembimbing II

  
 (Ir. Sunaryo MP)

(.....)

**Nb: Blangko ini sebagai syarat pendadaran**



Combined Report for 21

ned Report

Decision Variable	Decision Variable	Solution Value	Unit Cost or Profit c(j)	Total Contribution	Reduced Cost	Basis Status	Allowable Min. c(j)	Allowable Max. c(j)	
X	1	X1	239	318.457,00	76.111.220,00	0	basic	211.721,80	M
X	2	X2	301	420.125,00	126.457.600,00	0	basic	192.585,90	M
X	3	X3	345,0873	170.506,00	58.839.460,00	0	basic	0	256.463,00
X	4	X4	17	264.323,00	4.493.491,00	0	basic	172.076,10	M
X	5	X5	12	1.166.464,00	13.997.570,00	0	basic	146.070,90	M
X	6	X6	90	875.806,00	78.822.540,00	0	basic	177.203,60	M
X	7	X7	21	765.745,00	16.080.650,00	0	basic	194.671,30	M
X	8	X8	34	697.617,00	23.718.980,00	0	basic	168.003,60	M
Ob.		Objective Function	(Max.) =	398.521.500,00					
Cor		Constraint	Left Hand Side	Direction	Right Hand Side	Slack or Surplus	Shadow Price	Allowable Min. RHS	Allowable Max. RHS
	1	C1	24.290,19	<=	100.800,00	76.509,81	0	24.290,19	M
	2	C2	15.637,45	<=	20.160,00	4.522,55	0	15.637,46	M
	3	C3	10.246,65	<=	50.400,00	40.153,35	0	10.246,65	M
	4	C4	17.985,62	<=	40.320,00	22.334,38	0	17.985,63	M
	5	C5	12.421,45	<=	80.640,00	68.218,55	0	12.421,45	M
	6	C6	12.038,81	<=	60.480,00	48.441,19	0	12.038,81	M
	7	C7	39.867,45	<=	50.400,00	10.532,54	0	39.867,45	M
	8	C8	19.298,72	<=	70.560,00	51.261,28	0	19.298,72	M
	9	C9	80.640,01	<=	80.640,00	0	2.453,32	56.656,43	82.232,43
	10	C10	34.144,28	<=	50.400,00	16.255,72	0	34.144,28	M
	11	C11	52.701,12	<=	100.800,00	48.098,88	0	52.701,13	M
	12	C12	239	<=	239	0	106.735,20	220,5477	512,0201
	13	C13	301	<=	301	0	227.539,10	280,7143	606,5232
	14	C14	345,0873	<=	368	22,9127	0	345,0873	M
	15	C15	17	<=	17	0	92.246,88	0	358,9385
	16	C16	12	<=	12	0	1.020.393,00	0	414,8144
	17	C17	90	<=	90	0	698.602,40	67,9533	422,0444
	18	C18	21	<=	21	0	571.073,80	0,9316	323,2504
	19	C19	34	<=	34	0	529.613,40	10,746	384,2273

Combined Report for 23

	Decision Variable	Solution Value	Unit Cost or Profit c(j)	Total Contribution	Reduced Cost	Basis Status	Allowable Min. c(j)	Allowable Max. c(j)
1	X1	258	318.464,00	82.163.710,00	0	basic	211.729,30	M
2	X2	299	420.131,00	125.619.200,00	0	basic	192.592,70	M
3	X3	323,7535	170.512,00	55.203.860,00	0	basic	0	256.468,70
4	X4	17	264.329,00	4.493.593,00	0	basic	172.082,20	M
5	X5	12	1.166.471,00	13.997.650,00	0	basic	146.076,10	M
6	X6	90	875.812,00	78.823.080,00	0	basic	177.209,80	M
7	X7	21	765.751,00	16.080.770,00	0	basic	194.678,10	M
8	X8	34	697.624,00	23.719.220,00	0	basic	168.009,50	M
	Objective Function		(Max.) =	400.101.100,00				
	Constraint	Left Hand Side	Direction	Right Hand Side	Slack or Surplus	Shadow Price	Allowable Min. RHS	Allowable Max. RHS
1	C1	24.783,10	<=	100.800,00	76.016,90	0	24.783,10	M
2	C2	15.797,93	<=	20.160,00	4.362,07	0	15.797,93	M
3	C3	10.322,40	<=	50.400,00	40.077,59	0	10.322,41	M
4	C4	18.444,06	<=	40.320,00	21.875,94	0	18.444,06	M
5	C5	12.346,68	<=	80.640,00	68.293,32	0	12.346,68	M
6	C6	11.963,64	<=	60.480,00	48.516,36	0	11.963,64	M
7	C7	40.569,96	<=	50.400,00	9.830,03	0	40.569,97	M
8	C8	19.538,36	<=	70.560,00	51.021,64	0	19.538,36	M
9	C9	80.640,00	<=	80.640,00	0	2.453,41	58.139,13	83.715,13
10	C10	33.977,60	<=	50.400,00	16.422,40	0	33.977,60	M
11	C11	52.598,73	<=	100.800,00	48.201,26	0	52.598,74	M
12	C12	258	<=	258	0	106.734,70	222,367	512,8099
13	C13	299	<=	299	0	227.538,30	259,8264	585,6353
14	C14	323,7535	<=	368	44,2465	0	323,7535	M
15	C15	17	<=	17	0	92.246,82	0	337,7994
16	C16	12	<=	12	0	1.020.395,00	0	389,9118
17	C17	90	<=	90	0	698.602,20	47,4258	401,5169
18	C18	21	<=	21	0	571.072,90	0	304,5648
19	C19	34	<=	34	0	529.614,50	0	362,5757

Combined Report for 22

	Decision Variable	Solution Value	Unit Cost or Profit c(j)	Total Contribution	Reduced Cost	Basis Status	Allowable Min. c(j)	Allowable Max. c(j)
1	X1	252	318.466,00	80.253.430,00	0	basic	211.733,00	M
2	X2	311	420.134,00	130.661.700,00	0	basic	192.596,10	M
3	X3	317,6499	170.515,00	54.164.070,00	0	basic	0	256.470,30
4	X4	17	264.332,00	4.493.644,00	0	basic	172.085,20	M
5	X5	12	1.166.473,00	13.997.680,00	0	basic	146.078,60	M
6	X6	90	875.815,00	78.823.350,00	0	basic	177.212,90	M
7	X7	21	765.754,00	16.080.830,00	0	basic	194.681,50	M
8	X8	34	697.626,00	23.719.280,00	0	basic	168.012,50	M
	Objective Function		(Max.) =	402.194.000,00				
	Constraint	Left Hand Side	Direction	Right Hand Side	Slack or Surplus	Shadow Price	Allowable Min. RHS	Allowable Max. RHS
1	C1	24.706,77	<=	100.800,00	76.093,23	0	24.706,77	M
2	C2	15.811,55	<=	20.160,00	4.348,45	0	15.811,55	M
3	C3	10.311,81	<=	50.400,00	40.088,19	0	10.311,81	M
4	C4	18.405,28	<=	40.320,00	21.914,72	0	18.405,28	M
5	C5	12.305,58	<=	80.640,00	68.334,42	0	12.305,58	M
6	C6	11.974,40	<=	60.480,00	48.505,60	0	11.974,40	M
7	C7	40.521,30	<=	50.400,00	9.878,70	0	40.521,30	M
8	C8	19.540,28	<=	70.560,00	51.019,72	0	19.540,28	M
9	C9	80.640,01	<=	80.640,00	0	2.453,45	58.563,33	84.139,33
10	C10	34.028,35	<=	50.400,00	16.371,65	0	34.028,35	M
11	C11	52.607,60	<=	100.800,00	48.192,39	0	52.607,61	M
12	C12	252	<=	252	0	106.733,00	211,4516	507,813
13	C13	311	<=	311	0	227.537,90	266,4225	592,2314
14	C14	317,6499	<=	368	50,3501	0	317,6499	M
15	C15	17	<=	17	0	92.246,79	0	331,7515
16	C16	12	<=	12	0	1.020.394,00	0	382,7872
17	C17	90	<=	90	0	698.602,10	41,5529	395,644
18	C18	21	<=	21	0	571.072,50	0	299,2189
19	C19	34	<=	34	0	529.613,50	0	356,3813