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Lampiran 1 : Pemakaian Bahan Baku Benang Tenun Tahun 1997 (dalam Ball)

Minggu	Pers. Awal	Pesanan diterima	Pemakaian	Pers. Akhir
1	391.34	0	28.10	363.24
2	363.24	60	35.70	387.54
3	387.54	0	30.00	357.54
4*	357.54	0	27.42	330.12
5	330.12	0	32.58	297.54
6	297.54	90	60.31	327.23
7	327.23	150	40.00	437.23
8*	437.23	0	37.04	400.19
9	400.19	0	57.38	342.81
10	342.81	90	42.96	389.85
11	389.85	60	35.09	414.76
12*	414.76	0	20.00	394.76
13	394.76	90	18.56	466.20
14	466.20	0	12.73	453.47
15	453.47	0	19.22	434.25
16*	434.25	0	26.76	407.49
17	407.49	0	25.61	381.88
18	381.88	150	30.75	501.13
19	501.13	0	29.58	471.55
20*	471.55	0	20.70	450.85
21	450.85	60	30.61	480.24
22	480.24	150	34.99	595.25
23	595.25	0	42.95	552.30
24*	552.30	0	128.25	424.05
25	424.05	240	60.20	603.85
26	608.85	60	145.27	523.58
27	518.58	60	141.60	436.98
28*	436.98	0	122.65	314.33
29	314.33	240	46.71	507.62
30	507.62	0	46.84	460.78
31	460.78	0	22.90	437.88
32*	437.88	0	20.88	417.00
33	417.00	150	[illegible]	[illegible]
34	[illegible]	0	15.00	532.00
35	532.00	150	59.40	622.60
36*	622.60	0	148.17	474.43
37	474.43	240	228.23	486.20
38	486.20	150	217.60	418.60
39	418.60	150	49.72	518.88
40*	518.88	0	35.25	483.63
41	483.63	240	250.00	473.63
42	473.63	[illegible]	61.83	559.51
43	559.51	0	68.19	491.32
44*	491.32	0	39.75	451.57
45	451.57	240	228.51	463.06
46	463.06	0	137.29	325.77
47	325.77	240	124.35	441.42
48*	351.42	0	146.67	204.75
49	204.75	240	146.50	298.25
50	298.25	240	129.18	409.07
		Rata-rata		439.310
		Maksimum		622.600
		Minimum		204.750

* Pemesanan dilakukan setiap empat minggu.

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Lampiran 2 : Jumlah Pemakaian Bahan Baku Benang Tenun

Jumlah pemakaian yang diharapkan diperoleh dengan menggunakan perhitungan statistik sebagai berikut :

1. Menentukan jumlah kelas

$$k = 1 + 3{,}322 \cdot \log 50$$
$$= 1 + 3{,}322 \cdot 1{,}7$$
$$= 1 + 5{,}64$$
$$= 6{,}64$$
$$\approx 7$$

2. Menentukan interval kelas

$$i = \frac{\text{Jarak}}{1 + 3{,}322 \cdot \log n}$$
$$= \frac{250 - 12{,}73}{1 + 3{,}332 \cdot \log 50}$$
$$= \frac{237{,}27}{7}$$
$$= 33{,}8957$$
$$\approx 33{,}9$$

3. Menyusun tabel distribusi frekuensi

Distribusi (ball)	Titik Tengah	Frekuensi	Probabiliias
12,71 - 46,60	29,65	27	0,54
46,61 - 80,50	63,55	9	0,18
80,51 - 114,40	97,45	0	0,00
114,41 - 148,30	131,35	10	0,20
148,31 - 182,20	165,25	0	0,00
182,21 - 216,10	199,15	0	0,00
216,11 - 250,00	233,05	4	0,08
		50	1,00

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4. Jumlah pemakaian yang diharapkan
   = titik tengah interval kelas distribusi frekuensi x probabilitas

   = (29,65 x 0,54) + (63,55 x 0,18) + (97,45 x 0) + (131,35 x 0,20) + (165,25 x 0) + (199,15 x 0) + (233,05 x 0,08)

   = 72,364 ball/minggu

   = 72,364 x 50 ball/tahun

   = 3618,2 ball/tahun

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Lampiran 3 : Distribusi Probabilitas Lead Time Bahan Baku Benang Tenun

Dari data jumlah dan waktu pesanan diterima pada lampiran 1 dapat diketahui distribusi probabilitas lead time sebagai berikut :

Lead Time (minggu)	Frekuensi	Probabilitas
1	9	0,375
2	9	0,375
3	6	0,250
	24	1,000

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Lampiran 4 : Distribusi Probabilitas Bahan Baku Benang tenun Tahun 1997

Pemakaian					Probabilitas								
				29.65	0.375	x	0.54					=	0.202500
				63.55	0.375	x	0.18					=	0.067500
				131.35	0.375	x	0.20					=	0.075000
				233.05	0.375	x	0.08					=	0.030000
	29.65	+	29.65	= 59.30	0.375	x	0.54	x	0.54			=	0.109350
	29.65	+	63.55	= 93.20	0.375	x	0.54	x	0.18			=	0.036450
	29.65	+	131.35	= 161.00	0.375	x	0.54	x	0.20			=	0.040500
	29.65	+	233.05	= 262.70	0.375	x	0.54	x	0.08			=	0.016200
	63.55	+	29.65	= 93.20	0.375	x	0.18	x	0.54			=	0.036450
	63.55	+	63.55	= 127.10	0.375	x	0.18	x	0.18			=	0.012150
	63.55	+	131.35	= 194.90	0.375	x	0.18	x	0.20			=	0.013500
	63.55	+	233.05	= 296.60	0.375	x	0.18	x	0.08			=	0.005400
	131.35	+	29.65	= 161.00	0.375	x	0.20	x	0.54			=	0.040500
	131.35	+	63.55	= 194.90	0.375	x	0.20	x	0.18			=	0.013500
	131.35	+	131.35	= 262.70	0.375	x	0.20	x	0.20			=	0.015000
	131.35	+	233.05	= 364.40	0.375	x	0.20	x	0.08			=	0.006000
	233.05	+	29.65	= 262.70	0.375	x	0.08	x	0.54			=	0.016200
	233.05	+	63.55	= 296.60	0.375	x	0.08	x	0.18			=	0.005400
	233.05	+	131.35	= 364.40	0.375	x	0.08	x	0.20			=	0.006000
	233.05	+	233.05	= 466.10	0.375	x	0.08	x	0.08			=	0.002400
29.65 +	29.65	+	29.65	= 88.95	0.250	x	0.54	x	0.54	x	0.54	=	0.039366
29.65 +	29.65	+	63.55	= 122.85	0.250	x	0.54	x	0.54	x	0.18	=	0.013122
29.65 +	29.65	+	131.35	= 190.65	0.250	x	0.54	x	0.54	x	0.20	=	0.014580
29.65 +	29.65	+	233.05	= 292.35	0.250	x	0.54	x	0.54	x	0.08	=	0.005832
29.65 +	63.55	+	29.65	= 122.85	0.250	x	0.54	x	0.18	x	0.54	=	0.013122
29.65 +	63.55	+	63.55	= 156.75	0.250	x	0.54	x	0.18	x	0.18	=	0.004374
29.65 +	63.55	+	131.35	= 224.55	0.250	x	0.54	x	0.18	x	0.20	=	0.004860
29.65 +	63.55	+	233.05	= 326.25	0.250	x	0.54	x	0.18	x	0.08	=	0.001944
29.65 +	131.35	+	29.65	= 190.65	0.250	x	0.54	x	0.20	x	0.54	=	0.014580
29.65 +	131.35	+	63.55	= 224.55	0.250	x	0.54	x	0.20	x	0.18	=	0.004860
29.65 +	131.35	+	131.35	= 292.35	0.250	x	0.54	x	0.20	x	0.20	=	0.005400
29.65 +	131.35	+	233.05	= 394.05	0.250	x	0.54	x	0.20	x	0.08	=	0.002160
29.65 +	233.05	+	29.65	= 292.35	0.250	x	0.54	x	0.08	x	0.54	=	0.005832
29.65 +	233.05	+	63.55	= 326.25	0.250	x	0.54	x	0.08	x	0.18	=	0.001944
29.65 +	233.05	+	131.35	= 394.05	0.250	x	0.54	x	0.08	x	0.20	=	0.002160
29.65 +	233.05	+	233.05	= 495.75	0.250	x	0.54	x	0.08	x	0.08	=	0.000864
63.55 +	29.65	+	29.65	= [illegible]	[illegible]	x	0.18	x	[illegible]	x	0.54	=	0.013122
63.55 +	29.65	+	63.55	= 156.75	0.250	x	0.18	x	0.54	x	0.18	=	0.004374
63.55 +	29.65	+	131.35	= 224.55	0.250	x	0.18	x	0.54	x	0.20	=	0.004860
63.55 +	29.65	+	233.05	= 326.25	0.250	x	0.18	x	0.54	x	0.08	=	0.001944
63.55 +	63.55	+	29.65	= 156.75	0.250	x	0.18	x	0.18	x	0.54	=	0.004374
63.55 +	63.55	+	63.55	= 190.65	0.250	x	0.18	x	0.18	x	0.18	=	0.001458
63.55 +	63.55	+	131.35	= 258.45	0.250	x	0.18	x	0.18	x	0.20	=	0.001620
63.55 +	63.55	+	233.05	= 360.15	0.250	x	0.18	x	0.18	x	0.08	=	0.000648

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63.55	+	131.35	+	29.65	=	224.55	0.250	x	0.18	x	0.20	x	0.54	=	0.004860
63.55	+	131.35	+	63.55	=	258.45	0.250	x	0.18	x	0.20	x	0.18	=	0.001620
63.55	+	131.35	+	131.35	=	326.25	0.250	x	0.18	x	0.20	x	0.20	=	0.001800
63.55	+	131.35	+	233.05	=	427.95	0.250	x	0.18	x	0.20	x	0.08	=	0.000720
63.55	+	233.05	+	29.65	=	326.25	0.250	x	0.18	x	0.08	x	0.54	=	0.001944
63.55	+	233.05	+	63.55	=	360.15	0.250	x	0.18	x	0.08	x	0.18	=	0.000648
63.55	+	233.05	+	131.35	=	427.95	0.250	x	0.18	x	0.08	x	0.20	=	0.000720
63.55	+	233.05	+	233.05	=	529.65	0.250	x	0.18	x	0.08	x	0.08	=	0.000288
131.35	+	29.65	+	29.65	=	190.65	0.250	x	0.20	x	0.54	x	0.54	=	0.014580
131.35	+	29.65	+	63.55	=	224.55	0.250	x	0.20	x	0.54	x	0.18	=	0.004860
131.35	+	29.65	+	131.35	=	292.35	0.250	x	0.20	x	0.54	x	0.20	=	0.005400
131.35	+	29.65	+	233.05	=	394.05	0.250	x	0.20	x	0.54	x	0.08	=	0.002160
131.35	+	63.55	+	29.65	=	224.55	0.250	x	0.20	x	0.18	x	0.54	=	0.004860
131.35	+	63.55	+	63.55	=	258.45	0.250	x	0.20	x	0.18	x	0.18	=	0.001620
131.35	+	63.55	+	131.35	=	326.25	0.250	x	0.20	x	0.18	x	0.20	=	0.001800
131.35	+	63.55	+	233.05	=	427.95	0.250	x	0.20	x	0.18	x	0.08	=	0.000720
131.35	+	131.35	+	29.65	=	292.35	0.250	x	0.20	x	0.20	x	0.54	=	0.005400
131.35	+	131.35	+	63.55	=	326.25	0.250	x	0.20	x	0.20	x	0.18	=	0.001800
131.35	+	131.35	+	131.35	=	394.05	0.250	x	0.20	x	0.20	x	0.20	=	0.002000
131.35	+	131.35	+	233.05	=	495.75	0.250	x	0.20	x	0.20	x	0.08	=	0.000800
131.35	+	233.05	+	29.65	=	394.05	0.250	x	0.20	x	0.08	x	0.54	=	0.002160
131.35	+	233.05	+	63.55	=	427.95	0.250	x	0.20	x	0.08	x	0.18	=	0.000720
131.35	+	233.05	+	131.35	=	495.75	0.250	x	0.20	x	0.08	x	0.20	=	0.000800
131.35	+	233.05	+	233.05	=	597.45	0.250	x	0.20	x	0.08	x	0.08	=	0.000320
233.05	+	29.65	+	29.65	=	292.35	0.250	x	0.08	x	0.54	x	0.54	=	0.005832
233.05	+	29.65	+	63.55	=	326.25	0.250	x	0.08	x	0.54	x	0.18	=	0.001944
233.05	+	29.65	+	131.35	=	394.05	0.250	x	0.08	x	0.54	x	0.20	=	0.002160
233.05	+	29.65	+	233.05	=	495.75	0.250	x	0.08	x	0.54	x	0.08	=	0.000864
233.05	+	63.55	+	29.65	=	326.25	0.250	x	0.08	x	0.18	x	0.54	=	0.001944
233.05	+	63.55	+	63.55	=	360.15	0.250	x	0.08	x	0.18	x	0.18	=	0.000648
233.05	+	63.55	+	131.35	=	427.95	0.250	x	0.08	x	0.18	x	0.20	=	0.000720
233.05	+	63.55	+	233.05	=	529.65	0.250	x	0.08	x	0.18	x	0.08	=	0.000288
233.05	+	131.35	+	29.65	=	394.05	0.250	x	0.08	x	0.20	x	0.54	=	0.002160
233.05	+	131.35	+	63.55	=	427.95	0.250	x	0.08	x	0.20	x	0.18	=	0.000720
233.05	+	131.35	+	131.35	=	495.75	0.250	x	0.08	x	0.20	x	0.20	=	0.000800
233.05	+	131.35	+	233.05	=	597.45	0.250	x	0.08	x	0.20	x	0.08	=	0.000320
233.05	+	233.05	+	29.65	=	495.75	0.250	x	0.08	x	0.08	x	0.54	=	0.000864
233.05	+	233.05	+	63.55	=	529.65	0.250	x	0.08	x	0.08	x	0.18	=	0.000288
233.05	+	233.05	+	131.35	=	597.45	0.250	x	0.08	x	0.08	x	0.20	=	0.000320
233.05	+	233.05	+	233.05	=	699.15	0.250	x	0.08	x	0.08	x	0.08	=	0.000128

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Lampiran 5 : Distribusi Probabilitas Pemakaian Selama Lead Time Bahan Baku Benang Tenun Tahun 1997

Pemakaian / demand selama lead time per ball-per minggu	Probabilitas	Probabilitas kehabisan persediaan untuk setiap R
D_{Li}	$P(D_{Li})$	P_s
29.650	0.202500	0.797500
59.300	0.109350	0.688150
63.550	0.067500	0.620650
88.950	0.039366	0.581284
93.200	0.072900	0.508384
122.850	0.039366	0.469018
127.100	0.012150	0.456868
131.350	0.075000	0.381868
156.750	0.013122	0.368746
161.000	0.081000	0.287746
190.650	0.045198	0.242548
194.900	0.027000	0.215548
224.550	0.029160	0.186388
233.050	0.030000	0.156388
258.450	0.004860	0.151528
262.700	0.047400	0.104128
292.350	0.033696	0.070432
296.600	0.010800	0.059632
326.250	0.017064	0.042568
360.150	0.001944	0.040624
364.400	0.012000	0.028624
394.050	0.014960	0.013664
427.950	0.004320	0.009344
466.100	0.002400	0.006944
495.750	0.004992	0.001952
529.650	0.000864	0.001088
597.450	0.000960	0.000128
699.150	0.000128	0.000000

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Lampiran 6 : Perhitungan E_s Untuk Setiap Kemungkinan

R	$(D_{Li}-R)$	$P(D_{Li})$	$(D_{Li}-R).P(D_{Li})$
	635.60	0.000128	0.081357
	533.90	0.000960	0.512544
	466.10	0.000864	0.402710
	432.20	[illegible]	[illegible]
	[illegible]	0.002400	0.966120
	364.40	0.004320	1.574208
	330.50	0.014960	4.944280
	300.85	0.012000	3.610200
	296.60	0.001944	0.576590
	262.70	0.017064	4.482713
	233.05	0.010800	2.516940
	228.80	0.033696	7.709645
63.55	199.15	0.047400	9.439710
	194.90	0.004860	0.947214
	169.50	0.030000	5.085000
	161.00	0.029160	4.694760
	131.35	0.027000	3.546450
	127.10	0.045198	5.744666
	97.45	0.081000	7.893450
	93.20	0.013122	1.222970
	67.80	0.075000	5.085000
	63.55	0.012150	0.772133
	59.30	0.039366	2.334404
	29.65	0.072900	2.161485
	25.40	0.039366	0.999896
			79.461988

R	$(D_{Li}-R)$	$P(D_{Li})$	$(D_{Li}-R).P(D_{Li})$
	610.20	0.000128	0.078106
	508.50	0.000960	0.488160
	440.70	0.000864	0.380765
	406.80	0.004992	2.030746
	377.15	0.002400	0.905160
	339.00	0.004320	1.464480
	305.10	0.014960	4.564296
	275.45	0.012000	3.305400
	271.20	0.001944	0.527213
	237.30	0.017064	4.049287
	207.65	0.010800	2.242620
88.95	203.40	0.033696	6.853766
	173.75	0.047400	8.235750
	169.50	0.004860	0.823770

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	144.10	0.030000	4.323000
	135.60	0.029160	3.954096
	105.95	0.027000	2.860650
	101.70	0.045198	4.596637
	72.05	0.081000	5.836050
	67.80	0.013122	0.889672
	42.40	0.075000	3.180000
	38.15	0.012150	0.463523
	33.90	0.039366	1.334507
	4.25	0.072900	0.309825
			63.697478

R	$(D_{Li}-R)$	$P(D_{Li})$	$(D_{Li}-R).P(D_{Li})$
	605.95	0.000128	0.077562
	504.25	0.000960	0.484080
	436.45	0.000864	0.377093
	402.55	0.004992	2.009530
	372.90	0.002400	0.894960
	334.75	0.004320	1.446120
	300.85	0.014960	4.500716
	271.20	0.012000	3.254400
	266.95	0.001944	0.518951
	233.05	0.017064	3.976765
	203.40	0.010800	2.196720
93.20	199.15	0.033696	6.710558
	169.50	0.047400	8.034480
	165.25	0.004860	0.803115
	139.85	0.030000	4.195500
	131.35	0.029160	3.830166
	101.70	0.027000	2.745900
	97.45	0.045198	4.404545
	67.80	0.081000	5.491800
	63.55	0.013122	0.833903
	38.15	0.075000	2.861250
	33.90	0.012150	0.411885
	29.65	0.039366	1.167202
			61.227021

R	$(D_{Li}-R)$	$P(D_{Li})$	$(D_{Li}-R).P(D_{Li})$
	576.30	0.000128	0.073766
	474.60	0.000960	0.455616
	406.80	0.000864	0.351475
	372.90	0.004992	1.861517
	343.25	0.002400	0.823800

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	305.10	0.004320	1.318032
	271.20	0.014960	4.057152
	241.55	0.012000	2.898600
	237.30	0.001944	0.461311
	203.40	0.017064	3.470818
122.85	173.75	0.010800	1.876500
	169.50	0.033696	5.711472
	139.85	0.047400	6.628890
	135.60	0.004860	0.659016
	110.20	0.030000	3.306000
	101.70	0.029160	2.965572
	72.05	0.027000	1.945350
	67.80	0.045198	3.064424
	38.15	0.081000	3.090150
	33.90	0.013122	0.444836
	8.50	0.075000	0.637500
	4.25	0.012150	0.051638
			46.153435

R	$(D_{Li}-R)$	$P(D_{Li})$	$(D_{Li}-R).P(D_{Li})$
	572.05	0.000128	0.073222
	470.35	0.000960	0.451536
	402.55	0.000864	0.347803
	368.65	0.004992	1.840301
	339.00	0.002400	0.813600
	300.85	0.004320	1.299672
	266.95	0.014960	3.993572
	237.30	0.012000	2.847600
	233.05	0.001944	0.453049
	199.15	0.017064	3.398296
127.10	169.50	0.010800	1.830600
	165.25	0.033696	5.568264
	135.60	0.047400	6.427440
	131.35	0.004860	0.638361
	105.95	0.030000	3.178500
	97.45	0.029160	2.841642
	67.80	0.027000	1.830600
	63.55	0.045198	2.872323
	33.90	0.081000	2.745900
	29.65	0.013122	0.389067
	4.25	0.075000	0.318750
			44.160108

Perpustakaan Unika

R	$(D_{Li}-R)$	$P(D_{Li})$	$(D_{Li}-R).P(D_{Li})$
131.50	567.65	0.000128	0.072659
	465.95	0.000960	0.447312
	398.15	0.000864	0.344002
	364.25	0.004992	1.818336
	334.60	0.002400	0.803040
	296.45	0.004320	1.280664
	262.55	0.014960	3.927748
	232.90	0.012000	2.794800
	228.65	0.001944	0.444496
	194.75	0.017064	3.323214
	165.10	0.010800	1.783080
	160.85	0.033696	5.420002
	131.20	0.047400	6.218880
	126.95	0.004860	0.616977
	101.55	0.030000	3.046500
	93.05	0.029160	2.713338
	63.40	0.027000	1.711800
	59.15	0.045198	2.673462
	29.50	0.081000	2.389500
	25.25	0.013122	0.331331
			42.161139

R	$(D_{Li}-R)$	$P(D_{Li})$	$(D_{Li}-R).P(D_{Li})$
156.75	542.40	0.000128	0.069427
	440.70	0.000960	0.423072
	372.90	0.000864	0.322186
	339.00	0.004992	1.692288
	309.35	0.002400	0.742440
	271.20	0.004320	1.171584
	237.30	0.014960	3.550008
	207.65	0.012000	2.491800
	203.40	0.001944	0.395410
	169.50	0.017064	2.892348
	139.85	0.010800	1.510380
	135.60	0.033696	4.569178
	105.95	0.047400	5.022030
	101.70	0.004860	0.494262
	76.30	0.030000	2.289000
	67.80	0.029160	1.977048
	38.15	0.027000	1.030050
	33.90	0.045198	1.532212
	4.25	0.081000	0.344250
			32.518972

Perpustakaan Unika

R	$(D_{Li}-R)$	$P(D_{Li})$	$(D_{Li}-R).P(D_{Li})$
161.00	538.15	0.000128	0.068883
	436.45	0.000960	0.418992
	368.65	0.000864	0.318514
	334.75	0.004992	1.671072
	305.10	0.002400	0.732240
	266.95	0.004320	1.153224
	233.05	0.014960	3.486428
	203.40	0.012000	2.440800
	199.15	0.001944	0.387148
	165.25	0.017064	2.819826
	135.60	0.010800	1.464480
	131.35	0.033696	4.425970
	101.70	0.047400	4.820580
	97.45	0.004860	0.473607
	72.05	0.030000	2.161500
	63.55	0.029160	1.853118
	33.90	0.027000	0.915300
	29.65	0.045198	1.340121
			30.951802

R	$(D_{Li}-R)$	$P(D_{Li})$	$(D_{Li}-R).P(D_{Li})$
190.65	508.50	0.000128	0.065088
	406.80	0.000960	0.390528
	339.00	0.000864	0.292896
	305.10	0.004992	1.523059
	275.45	0.002400	0.661080
	237.30	0.004320	1.025136
	203.40	0.014960	3.042864
	173.75	0.012000	2.085000
	169.50	0.001944	0.329508
	135.60	0.017064	2.313878
	105.95	0.010800	1.144260
	101.70	0.033696	3.426883
	72.05	0.047400	3.415170
	67.80	0.004860	0.329508
	42.40	0.030000	1.272000
	33.90	0.029160	0.988524
	4.25	0.027000	0.114750
			22.420133

R	$(D_{Li}-R)$	$P(D_{Li})$	$(D_{Li}-R).P(D_{Li})$
	504.25	0.000128	0.064544
	402.55	0.000960	0.386448

Perpustakaan Unika

194.90	334.75	0.000864	0.289224
	300.85	0.004992	1.501843
	271.20	0.002400	0.650880
	233.05	0.004320	1.006776
	199.15	0.014960	2.979284
	169.50	0.012000	2.034000
	165.25	0.001944	0.321246
	131.35	0.017064	2.241356
	101.70	0.010800	1.098360
	97.45	0.033696	3.283675
	67.80	0.047400	3.213720
	63.55	0.004860	0.308853
	38.15	0.030000	1.144500
	29.65	0.029160	0.864594
			21.389304

R	$(D_{LI}-R)$	$P(D_{LI})$	$(D_{LI}-R).P(D_{LI})$
224.55	474.60	0.000128	0.060749
	372.90	0.000960	0.357984
	305.10	0.000864	0.263606
	271.20	0.004992	1.353830
	241.55	0.002400	0.579720
	203.40	0.004320	0.878688
	169.50	0.014960	2.535720
	139.85	0.012000	1.678200
	135.60	0.001944	0.263606
	101.70	0.017064	1.735409
	72.05	0.010800	0.778140
	67.80	0.033696	2.284589
	38.15	0.047400	1.808310
	33.90	0.004860	0.164754
	8.50	0.030000	0.255000
			14.998306

R	$(D_{LI}-R)$	$P(D_{LI})$	$(D_{LI}-R).P(D_{LI})$
233.05	466.10	0.000128	0.059661
	364.40	0.000960	0.349824
	296.60	0.000864	0.256262
	252.70	0.004992	1.311398
	233.05	0.002400	0.559320
	194.90	0.004320	0.841968
	161.00	0.014960	2.408560
	131.35	0.012000	1.576200
	127.10	0.001944	0.247082

Perpustakaan Unika

	93.20	0.017064	1.590365
	63.55	0.010800	0.686340
	59.30	0.033696	1.998173
	29.65	0.047400	1.405410
	25.40	0.004860	0.123444
			13.414008

R	$(D_{Li}-R)$	$P(D_{Li})$	$(D_{Li}-R).P(D_{Li})$
	440.70	0.000128	0.056410
	339.00	0.000960	0.325440
	271.20	0.000864	0.234317
	237.30	0.004992	1.184602
	207.65	0.002400	0.498360
	169.50	0.004320	0.732240
258.45	135.60	0.014960	2.028576
	105.95	0.012000	1.271400
	101.70	0.001944	0.197705
	67.80	0.017064	1.156939
	38.15	0.010800	0.412020
	33.90	0.033696	1.142294
	4.25	0.047400	0.201450
			9.441752

R	$(D_{Li}-R)$	$P(D_{Li})$	$(D_{Li}-R).P(D_{Li})$
	436.45	0.000128	0.055866
	334.75	0.000960	0.321360
	266.95	0.000864	0.230645
	233.05	0.004992	1.163386
	203.40	0.002400	0.488160
262.70	165.25	0.004320	0.713880
	131.35	0.014960	1.964996
	101.70	0.012000	1.220400
	97.45	0.001944	0.189443
	63.55	0.017064	1.084417
	33.90	0.010800	0.366120
	29.65	0.033696	0.999086
			8.797758

R	$(D_{Li}-R)$	$P(D_{Li})$	$(D_{Li}-R).P(D_{Li})$
	406.80	0.000128	0.052070
	305.10	0.000960	0.292896
	237.30	0.000864	0.205027
	203.40	0.004992	1.015373
	173.75	0.002400	0.417000

Perpustakaan Unika

292.35	135.60	0.004320	0.585792
	101.70	0.014960	1.521432
	72.05	0.012000	0.864600
	67.80	0.001944	0.131803
	33.90	0.017064	0.578470
	4.25	0.010800	0.045900
			5.710363

R	$(D_{Li}-R)$	$P(D_{Li})$	$(D_{Li}-R).P(D_{Li})$
296.60	402.55	0.000128	0.051526
	300.85	0.000960	0.288816
	233.05	0.000864	0.201355
	199.15	0.004992	0.994157
	169.50	0.002400	0.406800
	131.35	0.004320	0.567432
	97.45	0.014960	1.457852
	67.80	0.012000	0.813600
	63.55	0.001944	0.123541
	29.65	0.017064	0.505948
			5.411027

R	$(D_{Li}-R)$	$P(D_{Li})$	$(D_{Li}-R).P(D_{Li})$
326.25	372.90	0.000128	0.047731
	271.20	0.000960	0.260352
	203.40	0.000864	0.175738
	169.50	0.004992	0.846144
	139.85	0.002400	0.335640
	101.70	0.004320	0.439344
	67.80	0.014960	1.014288
	38.15	0.012000	0.457800
	33.90	0.001944	0.065902
			3.642938

R	$(D_{Li}-R)$	$P(D_{Li})$	$(D_{Li}-R).P(D_{Li})$
360.15	339.00	0.000128	0.043392
	237.30	0.000960	0.227808
	169.50	0.000864	0.146448
	135.60	0.004992	0.676915
	105.95	0.002400	0.254280
	67.80	0.004320	0.292896
	33.90	0.014960	0.507144
	4.25	0.012000	0.051000
			2.199883

Perpustakaan Unika

R	$(D_{Li}-R)$	$P(D_{Li})$	$(D_{Li}-R).P(D_{Li})$
364.40	334.75	0.000128	0.042848
	233.05	0.000960	0.223728
	165.25	0.000864	0.142776
	131.35	0.004992	0.655699
	101.70	0.002400	0.244080
	63.55	0.004320	0.274536
	29.65	0.014960	0.443564
			2.027231

R	$(D_{Li}-R)$	$P(D_{Li})$	$(D_{Li}-R).P(D_{Li})$
394.05	305.10	0.000128	0.039053
	203.40	0.000960	0.195264
	135.60	0.000864	0.117158
	101.70	0.004992	0.507686
	72.05	0.002400	0.172920
	33.90	0.004320	0.146448
			1.178530

R	$(D_{Li}-R)$	$P(D_{Li})$	$(D_{Li}-R).P(D_{Li})$
427.95	271.20	0.000128	0.034714
	169.50	0.000960	0.162720
	101.70	0.000864	0.087869
	67.80	0.004992	0.338458
	38.15	0.002400	0.091560
			0.715320

R	$(D_{Li}-R)$	$P(D_{Li})$	$(D_{Li}-R).P(D_{Li})$
466.10	233.05	0.000128	0.029830
	131.35	0.000960	0.126096
	63.55	0.000864	0.054907
	29.65	0.004992	0.148013
			0.358846

R	$(D_{Li}-R)$	$P(D_{Li})$	$(D_{Li}-R).P(D_{Li})$
495.75	203.40	0.000128	0.026035
	101.70	0.000960	0.097632
	33.90	0.000864	0.029290
			0.152957

Perpustakaan Unika

R	$(D_{Li}-R)$	$P(D_{Li})$	$(D_{Li}-R).P(D_{Li})$
529.65	169.50	0.000128	0.021696
	67.80	0.000960	0.065088
			0.086784

R	$(D_{Li}-R)$	$P(D_{Li})$	$(D_{Li}-R).P(D_{Li})$
597.45	101.70	0.000128	0.013018

R	$(D_{Li}-R)$	$P(D_{Li})$	$(D_{Li}-R).P(D_{Li})$
699.15	0.00	0.000128	0.000000

Perpustakaan Unika

Lampiran 7 : Kuantitas Pesanan dan Reorder Point Optimal

$$Q = \sqrt{\frac{2D(S+C_s.\Sigma(D_{Li}-R).P(D_{Li}))}{h}}$$

$$= \sqrt{\frac{2 \times 3.618,2\ (290.000 + (175 \times 0))}{122.500}}$$

$$= 130,88$$

Q = 130,88 tersebut disubstitusikan ke dalam P_s sehingga:

$$P_s = \frac{h.Q}{C_s.D}$$

$$= \frac{122.500 \times 130,88}{175.000 \times 3.618,2}$$

$$= 0,02532$$

Kemudian ditentukan reorder point sebagai berikut.

Pada lampiran 6, P_s = 0,02532 terletak diantara D_{Li}=364,4 dan D_{Li}=394,05.

Untuk memilih R yang terbaik maka ditentukan E_s untuk setiap kemungkinan R (lihat lampiran 6).

R	E_s
364,40	2,027231
394,05	1,178530

Semakin besar R kemungkinan stock out semakin kecil sehingga dipilih R = 394,05.

Perpustakaan Unika

Kemudian ditentukan besarnya Q optimal, yaitu :

$$Q = \sqrt{\frac{2 \times 3.618,2\ (290.000 + (175.000 \times 1,17853))}{122.500}}$$

$= 171,2$

Kemudian hasil Q optimal tersebut disubstitusikan ke dalam P_s sehingga :

$$P_{s\ optimal} = \frac{h.Q}{C_s.D}$$

$$= \frac{122.500 \times 171,2}{175.000 \times 3.618,2}$$

$= 0,03312$

Pada lampiran 6, $P_s = 0,03312$ terletak pada R = 364,4, sedangkan R hasil perhitungan adalah 394,05 sehingga belum optimal. Untuk itu kita mencoba kemungkinan kedua, yaitu R = 364,4.

Kemudian ditentukan besarnya Q optimal, yaitu :

$$Q = \sqrt{\frac{2 \times 3.618,2\ (290.000 + (175.000 \times 2,027231))}{122.500}}$$

$= 195,1615$

$\approx 195,2$

Kemudian hasil Q optimal tersebut disubstitusikan kembali ke dalam P_s sehingga :

$$P_{s\ optimal} = \frac{122.500 \times 195,2}{175.000 \times 3.618,2}$$

$= 0.0377646$

Perpustakaan Unika

Lampiran 8 : Cadangan Persediaan

Cadangan Persediaan = $R - ED_L$

= 364,4 - 135,6825

= 228,7175

Cadangan persediaan ini optimal bila marginal cost = marginal saving.

Marginal cost (h) = 122.500

Marginal saving = $D / Q.C_E.P_a$

= 3.618,2 195,2 x 175.000 x 0,0377646

= 122.499,8886

≈ 122.500

Ternyata marginal cost = marginal saving sehingga cadangan persediaan sebesar 228.7175 unit adalah optimal.

Perpustakaan Unika

Lampiran 9 : Expected Demand During Lead Time (ED_L) Bahan Baku Benang tenun

Pemakaian / demand selama lead time per ball-per minggu	Probabilitas	ED_L
D_L	$P(D_L)$	$D_L \cdot P(D_L)$
29.650	0.202500	6.004125
59.300	0.109350	6.484455
63.550	0.067500	4.289625
88.950	0.039366	3.501606
93.200	0.072900	[illegible]
122.850	0.039366	4.836113
127.100	0.012150	1.544265
131.350	0.075000	9.851250
156.750	0.013122	2.056874
161.000	0.081000	13.041000
190.650	0.045198	8.616999
194.900	0.027000	5.263000
224.500	0.024166	5.424878
233.050	0.030000	6.991500
258.450	0.004860	1.256067
262.700	0.047400	12.451980
292.350	0.033696	9.851026
296.600	0.010800	3.203280
326.250	0.017064	5.567130
360.150	0.001944	0.700132
364.400	0.012000	4.372800
394.050	0.014960	5.894988
427.950	0.004320	1.848744
466.100	0.002400	1.118640
495.750	0.004992	2.474784
529.650	0.000864	0.457618
597.450	0.000960	0.573552
699.150	0.000128	0.089491
		135.682500

Perpustakaan Unika

[illegible] berdasarkan kebijak-

[illegible]

Total biaya persediaan

biaya pesan + biaya simpan

= (biaya pesan) + (biaya simpan rata-rata persediaan +

biaya simpan cadangan persediaan)

= (S x jumlah pemesanan) + ((Q/2 x h) + (SS x h))

= (290.000 x 12) + ((153,75/2x122.500) + (350 x 122.500))

= Rp. 55.772.187,5

Rata-rata jumlah pesanan diterima = 3690/24 = 153,75

Perpustakaan Unika

Lampiran 11 : Total Biaya Persediaan Berdasarkan Teknik EOQ Probabilistik

Total biaya persediaan yang diterapkan berdasarkan perhitungan EOQ Probabilistik adalah sebagai berikut :

$$TIC = \frac{D}{Q} S + \frac{Q}{2} h + h(R-ED_L) + \frac{D}{Q} C_s \sum_{i=1}^{n} (D_{Li} - R).P(D_{Li})$$

Dengan Q optimal = 195,2

D = 3.618,2

S = 290.000

h = 122.500

R = 364,4

ED_L = 135,6825 (Perhitungan ED_L terdapat pada lampiran 10)

C_s = 175.000

$\sum_{i=1}^{n} (D_{Li} - R).P(D_{Li}) = E_s$ = 2,027231 (pada R = 364,4)

$$TIC = \frac{3.618,2}{195,2} 290.000 + \frac{195,2}{2} 122.500 + 122.500 (364,4 - 135,6825)$$

$$+ \frac{3.618,2}{195,2} \times 175.000 \times 2,027231$$

= Rp. 51.432.175,82

Perpustakaan Unika

Lampiran 12 : Kuantitas Pesanan dan Reorder Point Optimal dengan Tingkat Harga Naik 50% dari Data Perusahaan

* 875.000 x 150% = 1.312.500

h = 0,14 x 1.312.500 = 183.750

Cs = 20% x 1.312.500 = 262.500

* $Q = \sqrt{\frac{2 \quad Ds}{h}}$

$Q = \sqrt{\frac{2\ (3.618,2)\ (290.000)}{183.750}}$

Q = 106,87

* $Ps = \frac{h\ .\ Q}{Cs.\ D}$

$= \frac{183.750 \times 106,87}{262.500 \times 3.618,2}$

$= \frac{19.637.362,5}{949.777.500}$

= 0,02068

Pada lampiran 5, Ps = 0,02068 terletak di antara D_{Li}=364,4 dan D_{Li}=394.05

R	Es
364,4	2,02731
394,05	1,17853

Perpustakaan Unika

Tes optimalisasi pada masing-masing P dan Es :

$$Q1 = \sqrt{\frac{2\ (3.618,2)\ (290.000 + (262.500 \times 1.178530))}{183.750}}$$

$= 153,64$

$$Ps_{optimal} = \frac{h\ .\ Q}{Cs.\ D}$$

$$= \frac{183.750 \times 153,64}{262.500 \times 3.618,2}$$

$= 0,02972$

Pada lampiran 5, Ps=0,02972 terletak pada R=364,4 sedangkan R hasil perhitungan adalah 394,05 sehingga belum optimal.

$$Q2 = \sqrt{\frac{2\ (3.618,2)\ (290.000 + (262.500 \times 2,027231))}{183.750}}$$

$= 179,94$

$$Ps_{optimal} = \frac{h\ .\ Q}{Cs.\ D}$$

$$= \frac{183.750 \times 179,94}{262.500 \times 3.618,2}$$

$= 0,0348123$

Perpustakaan Unika

Lampiran 13 : Cadangan Persediaan Pada Tingkat Harga Naik 50% di Atas Data Perusahaan

Cadangan persediaan = R - EDL

= 364,4 - 135,6825

= 228,7175

Cadangan persediaan ini optimal bila *marginal cost* = *marginal saving.*

Marginal Cost (h) = 183.750

Marginal Saving = D/Q . Cs . Ps

= (3.618,2/179,94)x 262.500 x 0,0348123

= 183.749,8

≈ 183.750

Ternyata *marginal cost* = *marginal saving* sehingga cadangan persediaan ini optimal.

Perpustakaan Unika

Lampiran 14 : Total Biaya Persediaan Berdasarkan Kebijakan Perusahaan dan Teknik EOQ Probabilistik

* TIC Perusahaan = (290.000x12) + ((153,75/2)x183.750) + (350 x 183.750)

= 3.480.000+14.125.781,25+64.312.500

= 81.918.281,25

* EOQ = (3.618,2/179,94) . 290.000 + (179,94/2) . 183.750 + (364,4-135,6825).183.750

+ (3.618,2/179,94).262.500 x 2,027231

= 5.831.265,98 +16.531.987,5 +42.026.840,62 +10.700.335,61

= 75.090.429,71

$$\text{Efisiensi} = \frac{81.918.281,25-75.090.429,71}{81.918.281,25} \times 100\%$$

= 8,33 %

$$\text{Tanpa kehabisan} : \frac{17.528.187,15}{81.918.281,25} \times 100\ \% = 21,4\ \%$$

Perpustakaan Unika

Lampiran 15 : Kuantitas Pesanan dan Reorder Point Optimal dengan Tingkat Harga Turun 25% dari Data Perusahaan

* Harga = 875.000 x 75% = 656.250

  h = 0,14 x 656.250 = 91.875

  Cs = 20% x 656.250 = 131.250

*

$$Q = \sqrt{\frac{2 \quad Ds}{h}}$$

$$Q = \sqrt{\frac{2\ (3.618,2)\ (290.000)}{91.875}}$$

$$Q = 151,13$$

*

$$Ps = \frac{h\ .\ Q}{Cs.\ D}$$

$$= \frac{91.875 \times 151,13}{131.250 \times 3618,2}$$

$$= \frac{13.885.068,75}{474.888.750}$$

$$= 0,02924$$

Pada lampiran 5, Ps = 0,02924 terletak di antara D_{-i}=360,15 dan D_{-i}=364,4

P	Es
360,15 364,4	2,199893 2,027231

Perpustakaan Unika

Tes optimalisasi pada masing-masing R dan Ss :

$$Q1 = \sqrt{\frac{2\ (3.618,2)\ (290.000 + (131.250 \times 2,027231))}{91.875}}$$

$= 209,28$

$$Ps_{optimal} = \frac{h\ .\ Q}{Cs.\ D}$$

$$= \frac{91.875 \times 209,28}{131.250 \times 3.618,2}$$

$= 0,04049$

Pada lampiran 5, Ps=0,04049 terletak pada R=360,15 sedangkan R hasil perhitungan adalah 364,4 sehingga belum optimal.

$$Q2 = \sqrt{\frac{2\ (3.618,2)\ (290.000 + (131.250 \times 2,199883))}{91.875}}$$

$= 213,5$

$$Ps_{optimal} = \frac{h\ .\ Q}{Cs.\ D}$$

$$= \frac{91.875 \times 213,5}{131.250 \times 3.618,2}$$

$= 0,0413051$

Perpustakaan Unika

Lampiran 16 : Cadangan Persediaan Pada Tingkat Harga 25% di bawah Data Perusahaan

Cadangan persediaan = R - EDL

= 360.15 - 135,6825

= 224,4675

Cadangan persediaan ini optimal bila *marginal cost* = *marginal saving.*

Marginal Cost (h) = 91.875

Marginal Saving = D/Q . Cs . Ps

= (3.618,2/213,5)x 131.250 x 0,0413051

= 91.875,07

≈ 91.875

Ternyata *marginal cost* = *marginal saving* sehingga cadangan persediaan ini optimal.

Perpustakaan Unika

Lampiran 17 : Total Biaya Persediaan Berdasarkan Kebijakan Perusahaan dan Teknik EOQ Probabilistik

* TIC Perusahaan = (290.000x12) + ((153,75/2)x91.875) + (750 x 91.875)

= 3.480.000+ 9.062.890,63+23.156.250

= 42.699.140,63

* EOQ = (7.615,2/213,5) . 290.000 + (213,5/2) . 91.875 + 234.475, 91.875

+ (7.619,2/213,5).131.250 x 2,199883

= 4.914.651.05 + 9.807.656,25 + 20.622.951,56 -4,893.206,97

= 40.238.465,83

$$\text{Efisiensi} = \frac{42.699.140,63-40.238.465,83}{42.699.140,63} \times 100\%$$

= 5,76 %

$$\text{Tanpa kehabisan} : \frac{7.353.881,77}{42.699.140,63} \times 100\ \% = 17,22\%$$

Perpustakaan Unika

Lampiran 18 : Simulasi Persediaan Bahan Baku Benang Tenun Berdasarkan Teknik EOQ Probabilistik

Minggu	Pers. Awal	Pesanan	Pemakaian	Pers. Akhir
1	391.340	0.0	28.100	363.240
2*	363.240	0.0	35.700	327.540
3	327.540	0.0	30.000	297.540
4	297.540	0.0	27.420	270.120
5	270.120	195.2	32.580	432.740
6	432.740	0.0	60.310	372.430
7	372.430	0.0	40.000	332.430
8*	332.430	0.0	37.040	295.390
9	295.390	0.0	57.380	238.010
10	238.010	0.0	42.960	195.050
11	195.050	195.2	35.090	355.160
12	355.160	0.0	20.000	335.150
13	335.160	0.0	18.560	316.600
14	316.600	0.0	12.730	303.870
15	303.870	0.0	19.220	284.650
16	284.650	0.0	26.760	257.890
17	257.890	0.0	25.610	232.280
18*	232.280	0.0	30.750	201.530
19	201.530	0.0	29.580	171.950
20	171.950	0.0	20.700	151.250
21*	151.250	195.2	30.610	315.840
22	315.840	0.0	34.990	280.850
23	280.850	0.0	42.950	237.900
24*	237.900	195.2	128.250	304.850
25*	304.850	0.0	60.200	244.650
26	244.650	0.0	145.270	99.380
27	99.380	195.2	141.600	152.980
28	152.980	195.2	122.650	225.530
29*	225.530	0.0	46.710	178.820
30	178.820	0.0	46.840	131.980
31	131.980	0.0	22.900	109.080
32*	109.080	195.2	20.880	283.400
33*	283.400	0.0	20.000	263.400
34	263.400	0.0	15.000	248.400
35*	248.400	195.2	59.400	384.200
36	384.200	195.2	148.170	431.230
37	431.230	0.0	228.230	203.000
38*	203.000	195.2	217.600	180.600
39*	180.600	0.0	49.720	130.880
40	130.880	0.0	35.250	95.630
41*	95.630	195.2	250.000	40.830
42*	40.830	195.2	63.820	172.210
43*	172.210	0.0	68.490	103.720
44	103.720	195.2	39.750	259.170
45	259.170	195.2	228.510	225.860
46*	225.860	195.2	137.290	283.770
47*	283.770	0.0	124.350	159.420
48	159.420	0.0	146.670	12.750
49	12.750	195.2	146.500	61.450
50	61.450	195.2	129.180	127.470
		Maksimum		432.740
		Minimum		12.750
		Rata-rata		235.849

* Pemesanan

Perpustakaan Unika

Lampiran 19 : Akumulasi Jumlah Persediaan Bahan Baku Benang Tenun P.T. Megah Karya Garmindo Sebelum dan Sesudah Penerapan Teknik EOQ Probabilistik

Minggu	Sebelum (bali)	Sesudah (bali)
1	363.24	363.240
2	750.78	690.760
3	1108.32	988.320
4	1438.44	1258.440
5	1735.98	1691.190
6	2053.21	2063.610
7	2500.44	2396.040
8	2900.63	2691.430
9	3243.44	2929.440
10	3633.29	3124.490
11	4048.05	3479.650
12	4442.81	3814.810
13	4909.01	4101.410
14	5352.48	4435.280
15	5796.73	4719.930
16	6204.22	4977.820
17	6586.10	5210.100
18	7087.23	5411.630
19	7558.78	5583.580
20	8009.63	5734.830
21	8489.87	6050.670
22	9085.12	6331.520
23	9637.42	6569.420
24	10061.47	6874.270
25	10665.32	7118.920
26	11188.90	7218.390
27	11625.88	7371.280
28	11940.21	7596.810
29	12447.83	7775.630
30	12908.61	7907.610
31	13346.49	8016.690
32	13763.49	8300.090
33	14310.49	8563.490
34	14842.49	8811.890
35	15463.09	9196.090
36	15939.52	9627.320
37	16425.72	9830.320
38	16844.32	10010.920
39	17363.20	10141.800
40	17846.83	10237.430
41	18320.46	10278.260
42	18880.27	10450.470
43	19371.59	10554.190
44	19823.16	10813.360
45	20286.22	11039.220
46	20611.99	11322.990
47	21053.41	11482.410
48	21258.16	11495.160
49	21556.41	11556.610
50	21965.48	11684.080

Perpustakaan Unika

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No. : 0298/MKG-Pers/VIII/98

Hal. : Surat Keterangan Riset

SURAT KETERANGAN

Yang bertanda tangan di bawah ini menerangkan bahwa:

Nama : Agung Rahardjo Dwi P.S.
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Fakultas : Ekonomi Manajemen
Universitas Katolik Soegijapranata
Semarang

Telah mengadakan riset dalam rangka pembuatan skripsi dengan judul : "Pengendalian Persediaan Bahan Baku Dengan Menggunakan Teknik EOQ Probabilistik Pada PT Megah Karya Garmindo Solo".

Demikian surat keterangan ini dibuat untuk dapat dipergunakan dalam kepentingan pembuatan skripsi seperti tersebut di atas.

Solo, 7 Agustus 1998

P.T. MEGAH KARYA GARMINDO

Didid Lintangningsih
Direktur