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# LAMPIRAN

Lampiran 1. Nilai  $k$  dengan Berbagai Kombinasi  $(n, \lambda)$  untuk  $ARL_0 \approx 370$

$ARL_0 \approx 370$												
$n$	$\lambda$											
	0.05	0.1	0.15	0.2	0.25	0.3	0.4	0.5	0.6	0.7	0.8	0.9
9	2.48	2.7	2.77	2.83	2.85	2.85	2.88	2.87	2.86	2.83	2.85	2.94
10	2.49	2.69	2.77	2.84	2.86	2.86	2.89	2.88	2.86	2.85	2.81	2.7
11	2.49	2.7	2.78	2.84	2.88	2.88	2.89	2.89	2.88	2.86	2.85	2.79
12	2.49	2.68	2.79	2.84	2.86	2.89	2.9	2.9	2.9	2.89	2.89	2.91
13	2.5	2.69	2.78	2.84	2.87	2.89	2.9	2.91	2.9	2.9	2.88	2.95
14	2.49	2.69	2.8	2.85	2.86	2.89	2.91	2.92	2.91	2.89	2.88	2.81
15	2.49	2.69	2.78	2.84	2.87	2.9	2.91	2.92	2.91	2.91	2.91	2.89
16	2.49	2.68	2.79	2.84	2.86	2.91	2.92	2.92	2.91	2.91	2.91	2.96
17	2.48	2.7	2.79	2.85	2.87	2.89	2.93	2.92	2.93	2.92	2.91	2.83
18	2.5	2.7	2.79	2.84	2.86	2.9	2.92	2.95	2.92	2.92	2.92	2.89
19	2.48	2.7	2.79	2.86	2.87	2.89	2.92	2.93	2.93	2.93	2.92	2.96
20	2.47	2.71	2.77	2.84	2.89	2.89	2.92	2.93	2.93	2.92	2.92	2.89
21	2.5	2.67	2.79	2.85	2.88	2.9	2.93	2.92	2.93	2.93	2.93	2.9
22	2.49	2.7	2.79	2.84	2.88	2.9	2.93	2.93	2.94	2.93	2.94	2.96
23	2.49	2.7	2.79	2.84	2.88	2.9	2.93	2.94	2.94	2.93	2.93	2.9
24	2.49	2.7	2.78	2.85	2.87	2.91	2.93	2.94	2.94	2.94	2.94	2.92
25	2.49	2.69	2.8	2.85	2.88	2.9	2.93	2.95	2.94	2.94	2.94	2.97

**Lampiran 2.** Data Pengamatan Kandungan Lemak (%) dalam Produk Pakan Ternak pada Bulan Desember 2021 hingga Januari 2022

Sampel Produk Pakan Ternak (i)	Pengamatan Kandungan Lemak (%) Dalam Produk Pakan Ternak (j)									
	$X_1$	$X_2$	$X_3$	$X_4$	$X_5$	$X_6$	$X_7$	$X_8$	$X_9$	x10
1	5,8	5,7	5,9	5,3	6	5,9	5,5	5,8	5,2	5
2	5,1	4,7	5,2	5	5,8	5,7	4,9	5	5,2	5,5
3	5,7	5,5	5,9	6,1	5,8	5,5	5,2	4,9	5,3	5,8
4	5,6	5,7	5,6	5,5	6,4	5,8	6,2	5,9	5,2	5,5
5	6,7	6,3	6	5,8	5,7	5,3	5	5,5	5,3	5,9
6	6,5	6	5,9	5,5	5,6	5,8	5,2	5,7	5,9	6,4
7	6	5,9	5,8	6,1	6,3	5,8	5,7	5,8	5,9	6,5
8	5,9	6,1	5,8	5,7	5,7	5,6	5,7	5,4	5,4	5,7
9	5,7	6,1	5,9	5,5	6,5	5,6	6	5,7	5,8	6
10	5,5	5,7	6,2	5,9	5,8	5,5	6,2	5,8	5,7	5,1
11	5,7	6,2	5,9	5,7	5,4	5,8	5,9	5,7	5,9	5,5
12	5,2	5,5	5,3	5,8	5,5	5,2	5,9	6	5,7	5,1
13	5,7	6	5,5	5,8	5,9	5,5	6,5	5	5,5	5,8
14	5,7	5,6	5,4	5,8	5,9	6	6,4	5,5	5,3	4,7
15	5,1	5,5	5,8	5,3	5,2	5,8	6	6,1	5,8	5,5
16	5,1	5,8	5,9	5,8	5,9	5,1	5,9	5,8	5,9	5,8
17	6,3	5,8	5,9	5,8	6,2	5,9	6,2	6,3	6,1	5,9
18	5,7	6,1	6,4	5,9	6,4	6,7	6,8	6,5	6,3	6,2
19	6	5,8	5,9	5,8	6,1	5,9	5,8	5,9	5,8	6
20	5,8	5,6	5,8	5,9	5,9	5,8	5,7	5,8	5,2	6,2
21	5,5	5,4	4,9	5,6	5,8	5,3	5,9	5,5	5,6	5,7
22	5,7	5,8	5,5	5,7	5,6	5,9	5,6	5,9	5,7	5,8
23	5,5	5,7	5,5	5,9	5,6	5,5	5,6	5,5	5,6	5,9
24	5,4	5,7	5,5	5,5	5,9	5,7	5,7	5,9	5,6	5,9
25	5,9	6,5	6,4	6	6,3	5,9	6,5	6,8	6,4	6
26	6	5,9	6,3	6,4	6,7	6,5	6,4	6	6,5	6,6
27	5,8	5,5	5,6	4,9	5,5	5,8	4,7	5,9	5,8	5,5
28	5,7	5,9	6,3	6,2	6	5,9	5,9	5,7	5,9	6
29	5,7	5,8	6,1	5,7	5,8	6,1	6,4	6,3	6,2	6,4
30	5,5	5,2	5,3	5,1	5,3	5,5	5,4	5,9	5,4	5,8

Sumber: Tugas Akhir Ainun 2022.

## Lampiran 3. Uji Normalitas Kolmogrov-Smirnov

Data Kandungan Lemak (%) dalam Produk Pakan Ternak	Frekuensi ( $F_i$ )	$F_{kum}$	$F_s$	$F_t$	$ F_t - F_s $
4.7	3	3	0.01	0.00276	0.00724
4.9	4	7	0.023333	0.012035	0.011298
5	5	12	0.04	0.02294	0.01706
5.1	7	19	0.063333	0.041195	0.022139
5.2	11	30	0.1	0.069774	0.030226
5.3	10	40	0.133333	0.111618	0.021715
5.4	8	48	0.16	0.168916	-0.00892
5.5	34	82	0.273333	0.242292	0.031041
5.6	16	98	0.326667	0.330172	-0.00351
5.7	35	133	0.443333	0.428605	0.014728
5.8	46	179	0.596667	0.531716	0.064951
5.9	48	227	0.756667	0.63273	0.123936
6	18	245	0.816667	0.725281	0.091385
6.1	10	255	0.85	0.804585	0.045415
6.2	10	265	0.883333	0.868136	0.015197
6.3	9	274	0.913333	0.915765	-0.00243
6.4	11	285	0.95	0.949148	0.000852
6.5	9	294	0.98	0.97103	0.00897
6.6	1	295	0.983333	0.984445	-0.00111
6.7	3	298	0.993333	0.992136	0.001197
6.8	2	300	1	0.99626	0.00374

Total ( $n$ )	300
Rata-rata ( $\mu$ )	5.769333
SD( $\sigma$ )	0.385341
$D_{hitung}$	0.123936
$D_{(0.05;300)}$	0.077942
Hasil	$D_{hitung} = 0.123936 > D_{(0.05;300)} = 0.077942$

Lampiran 4. Output Hasil Perhitungan  $sign(X_{ij} - M_0)$ 

Sampel ( $i$ )	$(X_{ij} - M_0)$										$sign$ $(X_{ij} - M_0)$
	$X_1$	$X_2$	$X_3$	$X_4$	$X_5$	$X_6$	$X_7$	$X_8$	$X_9$	$X_{10}$	
1	0	-1	1	-1	1	1	-1	0	-1	-1	-2
2	-1	-1	-1	-1	0	-1	-1	-1	-1	-1	-9
3	-1	-1	1	1	0	-1	-1	-1	-1	0	-4
4	-1	-1	-1	-1	1	0	1	1	-1	-1	-3
5	1	1	1	0	-1	-1	-1	-1	-1	1	-1
6	1	1	1	-1	-1	0	-1	-1	1	1	1
7	1	1	0	1	1	0	-1	0	1	1	5
8	1	1	0	-1	-1	-1	-1	-1	-1	-1	-5
9	-1	1	1	-1	1	-1	1	-1	0	1	1
10	-1	-1	1	1	0	-1	1	0	-1	-1	-2
11	-1	1	1	-1	-1	0	1	-1	1	-1	-1
12	-1	-1	-1	0	-1	-1	1	1	-1	-1	-5
13	-1	1	-1	0	1	-1	1	-1	-1	0	-2
14	-1	-1	-1	0	1	1	1	-1	-1	-1	-3
15	-1	-1	0	-1	-1	0	1	1	0	-1	-3
16	-1	0	1	0	1	-1	1	0	1	0	2
17	1	0	1	0	1	1	1	1	1	1	8
18	-1	1	1	1	1	1	1	1	1	1	8
19	1	0	1	0	1	1	0	1	0	1	6
20	0	-1	0	1	1	0	-1	0	-1	1	0
21	-1	-1	-1	-1	0	-1	1	-1	-1	-1	-7
22	-1	0	-1	-1	-1	1	-1	1	-1	0	-4
23	-1	-1	-1	1	-1	-1	-1	-1	-1	1	-6
24	-1	-1	-1	-1	1	-1	-1	1	-1	1	-4
25	1	1	1	1	1	1	1	1	1	1	10
26	1	1	1	1	1	1	1	1	1	1	10
27	0	-1	-1	-1	-1	0	-1	1	0	-1	-5
28	-1	1	1	1	1	1	1	-1	1	1	6
29	-1	0	1	-1	0	1	1	1	1	1	4
30	-1	-1	-1	-1	-1	-1	-1	1	-1	0	-7



Lampiran 5. Output Hasil Perhitungan  $D_i$  dan  $R_{ij}^+$

Sampel (i)	$D_i$										$R_{ij}^+$
	$D_1$	$D_2$	$D_3$	$D_4$	$D_5$	$D_6$	$D_7$	$D_8$	$D_9$	$D_{10}$	
1	0	-0.1	0.1	-0.5	0.2	0.1	-0.3	0	-0.6	-0.8	-2
2	-0.7	-1.1	-0.6	-0.8	0	-0.1	-0.9	-0.8	-0.6	-0.3	-9
3	-0.1	-0.3	0.1	0.3	0	-0.3	-0.6	-0.9	-0.5	0	-4
4	-0.2	-0.1	-0.2	-0.3	0.6	0	0.4	0.1	-0.6	-0.3	-3
5	0.9	0.5	0.2	0	-0.1	-0.5	-0.8	-0.3	-0.5	0.1	-1
6	0.7	0.2	0.1	-0.3	-0.2	0	-0.6	-0.1	0.1	0.6	1
7	0.2	0.1	0	0.3	0.5	0	-0.1	0	0.1	0.7	5
8	0.1	0.3	0	-0.1	-0.1	-0.2	-0.1	-0.4	-0.4	-0.1	-5
9	-0.1	0.3	0.1	-0.3	0.7	-0.2	0.2	-0.1	0	0.2	1
10	-0.3	-0.1	0.4	0.1	0	-0.3	0.4	0	-0.1	-0.7	-2
11	-0.1	0.4	0.1	-0.1	-0.4	0	0.1	-0.1	0.1	-0.3	-1
12	-0.6	-0.3	-0.5	0	-0.3	-0.6	0.1	0.2	-0.1	-0.7	-5
13	-0.1	0.2	-0.3	0	0.1	-0.3	0.7	-0.8	-0.3	0	-2
14	-0.1	-0.2	-0.4	0	0.1	0.2	0.6	-0.3	-0.5	-1.1	-3
15	-0.7	-0.3	0	-0.5	-0.6	0	0.2	0.3	0	-0.3	-3
16	-0.7	0	0.1	0	0.1	-0.7	0.1	0	0.1	0	2
17	0.5	0	0.1	0	0.4	0.1	0.4	0.5	0.3	0.1	8
18	-0.1	0.3	0.6	0.1	0.6	0.9	1	0.7	0.5	0.4	8
19	0.2	0	0.1	0	0.3	0.1	0	0.1	0	0.2	6
20	0	-0.2	0	0.1	0.1	0	-0.1	0	-0.6	0.4	0
21	-0.3	-0.4	-0.9	-0.2	0	-0.5	0.1	-0.3	-0.2	-0.1	-7
22	-0.1	0	-0.3	-0.1	-0.2	0.1	-0.2	0.1	-0.1	0	-4
23	-0.3	-0.1	-0.3	0.1	-0.2	-0.3	-0.2	-0.3	-0.2	0.1	-6
24	-0.4	-0.1	-0.3	-0.3	0.1	-0.1	-0.1	0.1	-0.2	0.1	-4
25	0.1	0.7	0.6	0.2	0.5	0.1	0.7	1	0.6	0.2	10
26	0.2	0.1	0.5	0.6	0.9	0.7	0.6	0.2	0.7	0.8	10
27	0	-0.3	-0.2	-0.9	-0.3	0	-1.1	0.1	0	-0.3	-5
28	-0.1	0.1	0.5	0.4	0.2	0.1	0.1	-0.1	0.1	0.2	6
29	-0.1	0	0.3	-0.1	0	0.3	0.6	0.5	0.4	0.6	4
30	-0.3	-0.6	-0.5	-0.7	-0.5	-0.3	-0.4	0.1	-0.4	0	-7

Lampiran 6. Output Hasil Perhitungan  $M_{ij}$  dan  $S_i$ 

Sampel ( $i$ )	$(X_{ij} - M_0)$										$S_i$
	$X_1$	$X_2$	$X_3$	$X_4$	$X_5$	$X_6$	$X_7$	$X_8$	$X_9$	$X_{10}$	
1	1	0	1	0	1	1	0	1	0	0	5
2	0	0	0	0	1	0	0	0	0	0	1
3	0	0	1	1	1	0	0	0	0	1	4
4	0	0	0	0	1	1	1	1	0	0	4
5	1	1	1	1	0	0	0	0	0	1	5
6	1	1	1	0	0	1	0	0	1	1	6
7	1	1	1	1	1	1	0	1	1	1	9
8	1	1	1	0	0	0	0	0	0	0	3
9	0	1	1	0	1	0	1	0	1	1	6
10	0	0	1	1	1	0	1	1	0	0	5
11	0	1	1	0	0	1	1	0	1	0	5
12	0	0	0	1	0	0	1	1	0	0	3
13	0	1	0	1	1	0	1	0	0	1	5
14	0	0	0	1	1	1	1	0	0	0	4
15	0	0	1	0	0	1	1	1	1	0	5
16	0	1	1	1	1	0	1	1	1	1	8
17	1	1	1	1	1	1	1	1	1	1	10
18	0	1	1	1	1	1	1	1	1	1	9
19	1	1	1	1	1	1	1	1	1	1	10
20	1	0	1	1	1	1	0	1	0	1	7
21	0	0	0	0	1	0	1	0	0	0	2
22	0	1	0	0	0	1	0	1	0	1	4
23	0	0	0	1	0	0	0	0	0	1	2
24	0	0	0	0	1	0	0	1	0	1	3
25	1	1	1	1	1	1	1	1	1	1	10
26	1	1	1	1	1	1	1	1	1	1	10
27	1	0	0	0	0	1	0	1	1	0	4
28	0	1	1	1	1	1	1	0	1	1	8
29	0	1	1	0	1	1	1	1	1	1	8
30	0	0	0	0	0	0	0	1	0	1	2

**Lampiran 7.** Bagan Kendali Nonparametrik EWMA *Wilcoxon Signed Rank* untuk  $\lambda = 0.05$

Sampel ( <i>i</i> )	Titik Plot ( $Z_i$ )	UCL	CL	LCL	Keterangan
1	-0.8	2.442866	0	-2.44287	Terkendali
2	-0.76	3.369474	0	-3.36947	Terkendali
3	-1.822	4.026661	0	-4.02666	Terkendali
4	4.22995625	4.538802	0	-4.5388	Terkendali
5	3.093458438	4.95578	0	-4.95578	Terkendali
6	4.188785516	5.304034	0	-5.30403	Terkendali
7	10.47934624	5.59977	0	-5.59977	Tidak terkendali
8	7.455378928	5.85386	0	-5.85386	Tidak terkendali
9	8.507609981	6.074057	0	-6.07406	Tidak terkendali
10	6.582229482	6.266146	0	-6.26615	Tidak terkendali
11	5.303118008	6.434585	0	-6.43458	Terkendali
12	3.912962108	6.582902	0	-6.5829	Terkendali
13	2.567314002	6.713946	0	-6.71395	Terkendali
14	0.488948302	6.830055	0	-6.83006	Terkendali
15	-	6.933175	0	-6.93317	Terkendali
16	0.135499113	7.02494	0	-7.02494	Terkendali
17	0.871275843	7.106742	0	-7.10674	Tidak terkendali
18	15.22771205	7.179768	0	-7.17977	Tidak terkendali
19	35.86632645	7.245041	0	-7.24504	Tidak terkendali
20	39.02301013	7.30345	0	-7.30345	Tidak terkendali
21	37.07185962	7.355766	0	-7.35577	Tidak terkendali
22	34.69326664	7.402664	0	-7.40266	Tidak terkendali
23	31.75860331	7.444735	0	-7.44474	Tidak terkendali
24	28.97067314	7.482502	0	-7.4825	Tidak terkendali
25	25.42213948	7.516423	0	-7.51642	Tidak terkendali
26	51.65103251	7.546906	0	-7.54691	Tidak terkendali
27	76.56848088	7.574312	0	-7.57431	Tidak terkendali
28	72.49005684	7.59896	0	-7.59896	Tidak terkendali
29	83.265554	7.621137	0	-7.62114	Tidak terkendali
30	85.7022763	7.641097	0	-7.6411	Tidak terkendali

**Lampiran 8.** Bagan kendali Nonparametrik EWMA *Wilcoxon Signed Rank* untuk  $\lambda = 0.3$

Sampel ( <i>i</i> )	Titik Plot ( $Z_i$ )	UCL	CL	LCL	Keterangan
1	-4.8	16.83518	0	-16.8352	Terkendali
2	-3.36	20.54995	0	-20.55	Terkendali
3	-8.952	22.14386	0	-22.1439	Terkendali
4	-21.5664	22.88438	0	-22.8844	Terkendali
5	-20.6465	23.23862	0	-23.2386	Terkendali
6	-6.95254	23.41025	0	-23.4102	Terkendali
7	34.13322	23.49388	0	-23.4939	Tidak terkendali
8	8.893257	23.53476	0	-23.5348	Terkendali
9	14.77528	23.55476	0	-23.5548	Terkendali
10	1.342696	23.56455	0	-23.5646	Terkendali
11	-4.76011	23.56935	0	-23.5694	Terkendali
12	-10.0821	23.5717	0	-23.5717	Terkendali
13	-13.9575	23.57285	0	-23.5729	Terkendali
14	-21.4702	23.57342	0	-23.5734	Terkendali
15	-18.6292	23.5737	0	-23.5737	Terkendali
16	-7.04041	23.57383	0	-23.5738	Terkendali
17	81.47171	23.5739	0	-23.5739	Tidak terkendali
18	185.4302	23.57393	0	-23.5739	Tidak terkendali
19	159.5011	23.57395	0	-23.5739	Tidak terkendali
20	111.6508	23.57395	0	-23.574	Tidak terkendali
21	75.00556	23.57396	0	-23.574	Tidak terkendali
22	45.30389	23.57396	0	-23.574	Tidak terkendali
23	24.51272	23.57396	0	-23.574	Tidak terkendali
24	4.558907	23.57396	0	-23.574	Terkendali
25	168.1912	23.57396	0	-23.574	Tidak terkendali
26	282.7339	23.57396	0	-23.574	Tidak terkendali
27	196.4137	23.57396	0	-23.574	Tidak terkendali
28	223.8896	23.57396	0	-23.574	Tidak terkendali
29	196.3227	23.57396	0	-23.574	Tidak terkendali
30	135.3259	23.57396	0	-23.574	Tidak terkendali

**Lampiran 9.** Bagan kendali Nonparametrik EWMA *Wilcoxon Signed Rank* untuk  $\lambda = 0.8$

Sampel ( $i$ )	Titik Plot ( $Z_i$ )	UCL	CL	LCL	Keterangan
1	-12.8	44.10895	0	-44.1089	Terkendali
2	-2.56	44.98247	0	-44.9825	Terkendali
3	-18.112	45.01706	0	-45.0171	Terkendali
4	-44.4224	45.01845	0	-45.0184	Terkendali
5	-23.6845	45.0185	0	-45.0185	Terkendali
6	15.2631	45.0185	0	-45.0185	Terkendali
7	107.0526	45.0185	0	-45.0185	Tidak terkendali
8	-18.5895	45.0185	0	-45.0185	Terkendali
9	19.0821	45.0185	0	-45.0185	Terkendali
10	-20.1836	45.0185	0	-45.0185	Terkendali
11	-19.2367	45.0185	0	-45.0185	Terkendali
12	-21.8473	45.0185	0	-45.0185	Terkendali
13	-22.7695	45.0185	0	-45.0185	Terkendali
14	-35.7539	45.0185	0	-45.0185	Terkendali
15	-16.7508	45.0185	0	-45.0185	Terkendali
16	12.64984	45.0185	0	-45.0185	Terkendali
17	232.93	45.0185	0	-45.0185	Tidak terkendali
18	388.986	45.0185	0	-45.0185	Tidak terkendali
19	156.9972	45.0185	0	-45.0185	Tidak terkendali
20	31.39944	45.0185	0	-45.0185	Terkendali
21	-2.12011	45.0185	0	-45.0185	Terkendali
22	-19.624	45.0185	0	-45.0185	Terkendali
23	-23.1248	45.0185	0	-45.0185	Terkendali
24	-38.225	45.0185	0	-45.0185	Terkendali
25	432.355	45.0185	0	-45.0185	Tidak terkendali
26	526.471	45.0185	0	-45.0185	Tidak terkendali
27	101.2942	45.0185	0	-45.0185	Tidak terkendali
28	250.6588	45.0185	0	-45.0185	Tidak terkendali
29	155.7318	45.0185	0	-45.0185	Tidak terkendali
30	25.54635	45.0185	0	-45.0185	Terkendali

**Lampiran 10.** Bagan kendali Nonparametrik EWMA *Sign* untuk  $\lambda = 0.05$ 

Sampel ( <i>i</i> )	Titik Plot ( $Z_i$ )	UCL	CL	LCL	Keterangan
1	5	5.196852	5	4.803148	Terkendali
2	4.8	5.27152	5	4.72848	Terkendali
3	4.76	5.324478	5	4.675522	Terkendali
4	4.722	5.365747	5	4.634253	Terkendali
5	4.7359	5.399348	5	4.600652	Terkendali
6	4.799105	5.427411	5	4.572589	Terkendali
7	5.00915	5.451242	5	4.548758	Terkendali
8	4.908692	5.471717	5	4.528283	Terkendali
9	4.963258	5.489461	5	4.510539	Terkendali
10	4.965095	5.50494	5	4.49506	Terkendali
11	4.96684	5.518514	5	4.481486	Terkendali
12	4.868498	5.530465	5	4.469535	Terkendali
13	4.875073	5.541025	5	4.458975	Terkendali
14	4.831319	5.550382	5	4.449618	Terkendali
15	4.839753	5.558691	5	4.441309	Terkendali
16	4.997766	5.566086	5	4.433914	Terkendali
17	5.247878	5.572678	5	4.427322	Terkendali
18	5.435484	5.578562	5	4.421438	Terkendali
19	5.663709	5.583822	5	4.416178	Tidak terkendali
20	5.730524	5.588529	5	4.411471	Tidak terkendali
21	5.543998	5.592745	5	4.407255	Terkendali
22	5.466798	5.596524	5	4.403476	Terkendali
23	5.293458	5.599914	5	4.400086	Terkendali
24	5.178785	5.602957	5	4.397043	Terkendali
25	5.419846	5.605691	5	4.394309	Terkendali
26	5.648854	5.608147	5	4.391853	Tidak terkendali
27	5.566411	5.610355	5	4.389645	Terkendali
28	5.68809	5.612342	5	4.387658	Tidak terkendali
29	5.803686	5.614129	5	4.385871	Tidak terkendali
30	5.613502	5.615737	5	4.384263	Terkendali

**Lampiran 11.** *Syntax* menghitung ARL Nonparametrik EWMA *Wilcoxon Signed Rank*

```

# Data matriks dalam format tanda titik (.)
#Matriks peluang transisi
P1 <- matrix(c(0.103604027, 0.061019069, 0,0.061019069,0.121681838,
              0.050458821, 0.058493099, 0.043841937, 0.069006861, 0,
              0.045468592, 0.05056322, 0.054863004, 0.058533347, 0.054801593,
              0.043606946, 0.047305541, 0.050592071, 0.053528427, 0.056165381,
              0.042633864, 0.045532367, 0.048179771, 0.050605571, 0.052835115),
            nrow = 5, byrow = TRUE)
transpose_matrix<-t(P1)
print(transpose_matrix)
x1<-c(1, 1, 1, 1, 1)
result<- transpose_matrix %*% x1
print(result)
transpose_result<-t(result)
print(transpose_result)
identitas_matrix <- diag(5)
print(identitas_matrix)
IP <- identitas_matrix-P1
print(IP)
IP_invers <- solve(IP)
print(IP_invers)
result2 <- IP_invers %*% IP_invers %*% x1
print(result2)
hasil <- transpose_result %*% result2
print(hasil)

```