

Lampiran 1. Data Penelitian

TAHUN	IMPOR SAPI (TON)	PRODUKSI SAPI (TON)	PDB (Milyar Rp)	KURS
1980	990	237,30	11.169,9	626
1981	1.212	240,50	12.054,6	631
1982	1.497	235,55	12.325,4	661
1983	1.788	243,60	73.697,6	909
1984	1.906	248,88	78.213,8	1.076
1985	1.356	227,40	80.119,6	1.125
1986	1.300	227,80	83.318,2	1.641
1987	893	248,03	94.517,8	1.650
1988	1.054	238,06	99.936,0	1.729
1989	951	245,88	107.436,6	1.795
1990	1.422	259,22	115.110,1	1.901
1991	1.866	262,19	122.705,0	1.992
1992	3.148	297,01	131.184,8	2.062
1993	3.050	346,28	139.707,1	2.110
1994	4.700	336,46	354.640,8	2.206
1995	7.259	311,97	383.792,3	2.308
1996	15.773	347,20	413.797,9	2.383
1997	23.316	353,65	433.245,9	4.650
1998	8.526	342,60	376.374,9	8.025
1999	10.400	308,77	379.557,7	7.100
2000	26.962	339,94	1.389.770,0	9.599
2001	16.517	338,69	1.440.406,0	10.400
2002	11.474	330,29	1.505.216,0	8.940
2003	10.671	369,71	1.577.171,0	8.447
2004	11.772	447,57	1.656.517,0	9.290
2005	19.957	358,71	1.750.815,0	9.830
2006	24.079	395,84	1.847.127,0	9.020
2007	104000	339,48	1.964.327,0	9.419
2008	45.708	392,51	2.082.456,0	10.950
2009	110200	409,31	2.178.850,0	9.400
2010	90.506	436,45	6.864.133,1	8.991
2011	65.022	485,33	7.287.635,3	9.068
2012	39.419	508,91	7.727.083,4	9.670
2013	130.021	504,82	8.156.497,8	12.189
2014	246.609	497,67	8.564.866,6	12.440
2015	197.604	506,66	8.982.511,3	13.864
2016	145,536	524,11	9.433.034,4	13.369

Lampiran 2. Data Penelitian (LOG)

TAHUN	IMPOR SAPI(LOG)	PRODUKSI D.SAPI (LOG)	PDB (LOG)	KURS (LOG)
1980	2.995635195	2.37529774	4.0480493	2.796574333
1981	3.08350262	2.38111508	4.0811528	2.800029359
1982	3.1752218	2.37208311	4.090801	2.820201459
1983	3.252367514	2.38667728	4.8674533	2.958563883
1984	3.280122896	2.39599	4.8932834	3.031812271
1985	3.13225969	2.35679046	4.9037388	3.051152522
1986	3.113943352	2.35755372	4.9207399	3.215108581
1987	2.950851459	2.39450421	4.9755136	3.217483944
1988	3.022840611	2.37668643	4.999722	3.237794993
1989	2.978180517	2.3907232	5.0311523	3.254064453
1990	3.152899596	2.41366851	5.0611134	3.278982117
1991	3.270911639	2.41861612	5.0888623	3.299289334
1992	3.498034724	2.47277107	5.1178835	3.314288661
1993	3.484299839	2.53942741	5.1452185	3.324282455
1994	3.672097858	2.52693344	5.5497887	3.343605508
1995	3.860876796	2.49411283	5.5840963	3.363235804
1996	4.197914303	2.54057972	5.6167883	3.377124042
1997	4.367654047	2.54857366	5.6367345	3.667452953
1998	3.930745328	2.53478736	5.5756207	3.904445041
1999	4.017033339	2.4896351	5.5792778	3.851258349
2000	4.430752104	2.53140227	6.1429429	3.982225992
2001	4.217931169	2.52980237	6.1584849	4.017033339
2002	4.059714846	2.51889543	6.1775988	3.951337519
2003	4.02820512	2.5678612	6.1978788	3.926702494
2004	4.070850253	2.65086097	6.2191959	3.968015714
2005	4.300095257	2.55474348	6.2432403	3.992553518
2006	4.381638447	2.59751968	6.2664968	3.955206538
2007	5.017033339	2.53081419	6.2932138	3.974004797
2008	4.659992219	2.59385073	6.3185758	4.039414119
2009	5.042181595	2.61205236	6.3382273	3.973127854
2010	4.956677371	2.6399345	6.8365857	3.953807998
2011	4.813060324	2.68603714	6.8625866	3.957511511
2012	4.595705603	2.70664098	6.8880156	3.985426474
2013	5.114013502	2.70313655	6.9115037	4.085968077
2014	5.392008922	2.69694146	6.9327206	4.09482038
2015	5.295795732	2.70471662	6.9533978	4.14188855
2016	5.162970434	2.71942245	6.9746514	4.126098923

Lampiran 3. Uji Stasioneritas Data Tingkat level

IMPOR SAPI

Null Hypothesis: IMP_SAPI has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-0.729745	0.8264
Test critical values:		
1% level	-3.626784	
5% level	-2.945842	
10% level	-2.611531	

*MacKinnon (1996) one-sided p-values.

PRODUKSI D.SAPI

Null Hypothesis: PRO_SAPI has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-0.612791	0.8554
Test critical values:		
1% level	-3.626784	
5% level	-2.945842	
10% level	-2.611531	

*MacKinnon (1996) one-sided p-values.

PDB

Null Hypothesis: PDB has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-1.327648	0.6061
Test critical values:		
1% level	-3.626784	
5% level	-2.945842	
10% level	-2.611531	

*MacKinnon (1996) one-sided p-values.

KURS

Null Hypothesis: KURS has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-1.505799	0.5193
Test critical values:		
1% level	-3.626784	
5% level	-2.945842	
10% level	-2.611531	

*MacKinnon (1996) one-sided p-values.

Lampiran 4. Uji Stasioneritas Data Tingkat *First Difference*

IMPOR SAPI

Null Hypothesis: D(IMP_SAPI) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-6.788767	0.0000
Test critical values:		
1% level	-3.632900	
5% level	-2.948404	
10% level	-2.612874	

*MacKinnon (1996) one-sided p-values.

PRODUKSI D.SAPI

Null Hypothesis: D(PRO_SAPI) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-7.876702	0.0000
Test critical values:		
1% level	-3.632900	
5% level	-2.948404	
10% level	-2.612874	

*MacKinnon (1996) one-sided p-values.

PDB

Null Hypothesis: D(PDB) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-6.513351	0.0000
Test critical values:		
1% level	-3.632900	
5% level	-2.948404	
10% level	-2.612874	

*MacKinnon (1996) one-sided p-values.

KURS

Null Hypothesis: D(KURS) has a unit root

Exogenous: Constant

Lag Length: 0 (Automatic - based on SIC, maxlag=9)

	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-4.987783	0.0003
Test critical values:		
1% level	-3.632900	
5% level	-2.948404	
10% level	-2.612874	

*MacKinnon (1996) one-sided p-values.

Lampiran 5. Penentuan Panjang *Lag*

VAR Lag Order Selection Criteria

Endogenous variables: IMP_SAPI PRO_SAPI PDB KURS

Exogenous variables: C

Date: 03/11/17 Time: 22:28

Sample: 1980 2016

Included observations: 33

Lag	LogL	LR	FPE	AIC	SC	HQ
0	41.98010	NA	1.18e-06	-2.301824	-2.120429	-2.240790
1	139.2612	165.0830	8.61e-09	-7.227950	-6.320975*	-6.922780
2	153.4629	20.65703	1.01e-08	-7.118963	-5.486409	-6.569658
3	183.0318	35.84113	5.01e-09	-7.941322	-5.583189	-7.147882
4	211.8559	27.95066*	2.97e-09*	-8.718541*	-5.634828	-7.680966*

* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

FPE: Final prediction error

AIC: Akaike information criterion

SC: Schwarz information criterion

HQ: Hannan-Quinn information criterion

Lampiran 6. Uji Kointegrasi (*Johansen's Cointegration*)

Date: 03/11/17 Time: 22:29
Sample (adjusted): 1985 2016
Included observations: 32 after adjustments
Trend assumption: Linear deterministic trend
Series: IMP_SAPI PRO_SAPI PDB KURS
Lags interval (in first differences): 1 to 4

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.753191	74.62642	47.85613	0.0000
At most 1 *	0.553515	29.85393	29.79707	0.0492
At most 2	0.081846	4.050728	15.49471	0.8994
At most 3	0.040358	1.318244	3.841466	0.2509

Trace test indicates 2 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.753191	44.77249	27.58434	0.0001
At most 1 *	0.553515	25.80320	21.13162	0.0102
At most 2	0.081846	2.732484	14.26460	0.9630
At most 3	0.040358	1.318244	3.841466	0.2509

Max-eigenvalue test indicates 2 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

Lampiran 7. Uji Stabilitas Model

Roots of Characteristic Polynomial

Endogenous variables: IMP_SAPI PRO_SAPI PDB
KURS

Exogenous variables: C

Lag specification: 1 4

Date: 03/11/17 Time: 22:30

Root	Modulus
0.988682	0.988682
0.824672 - 0.374946i	0.905908
0.824672 + 0.374946i	0.905908
-0.151829 - 0.879112i	0.892126
-0.151829 + 0.879112i	0.892126
0.489215 - 0.681554i	0.838956
0.489215 + 0.681554i	0.838956
-0.604421 - 0.546206i	0.814657
-0.604421 + 0.546206i	0.814657
-0.773921 - 0.098072i	0.780110
-0.773921 + 0.098072i	0.780110
0.194623 - 0.689660i	0.716595
0.194623 + 0.689660i	0.716595
0.626846	0.626846
0.327520 - 0.221396i	0.395329
0.327520 + 0.221396i	0.395329

No root lies outside the unit circle.
VAR satisfies the stability condition.

Lampiran 8. Uji Kausalitas Granger

Pairwise Granger Causality Tests

Date: 03/11/17 Time: 22:30

Sample: 1980 2016

Lags: 4

Null Hypothesis:	Obs	F-Statistic	Prob.
PRO_SAPI does not Granger Cause IMP_SAPI	33	6.84000	0.0008
IMP_SAPI does not Granger Cause PRO_SAPI		1.26552	0.3109
PDB does not Granger Cause IMP_SAPI	33	0.90307	0.4778
IMP_SAPI does not Granger Cause PDB		4.41361	0.0081
KURS does not Granger Cause IMP_SAPI	33	1.33830	0.2846
IMP_SAPI does not Granger Cause KURS		1.40657	0.2619
PDB does not Granger Cause PRO_SAPI	33	1.19158	0.3399
PRO_SAPI does not Granger Cause PDB		0.70814	0.5943
KURS does not Granger Cause PRO_SAPI	33	2.36589	0.0814
PRO_SAPI does not Granger Cause KURS		3.07274	0.0354
KURS does not Granger Cause PDB	33	3.72667	0.0170
PDB does not Granger Cause KURS		2.13190	0.1079

Lampiran 9. Hasil Estimasi VECM

Vector Error Correction Estimates

Date: 03/11/17 Time: 22:31

Sample (adjusted): 1985 2016

Included observations: 32 after adjustments

Standard errors in () & t-statistics in []

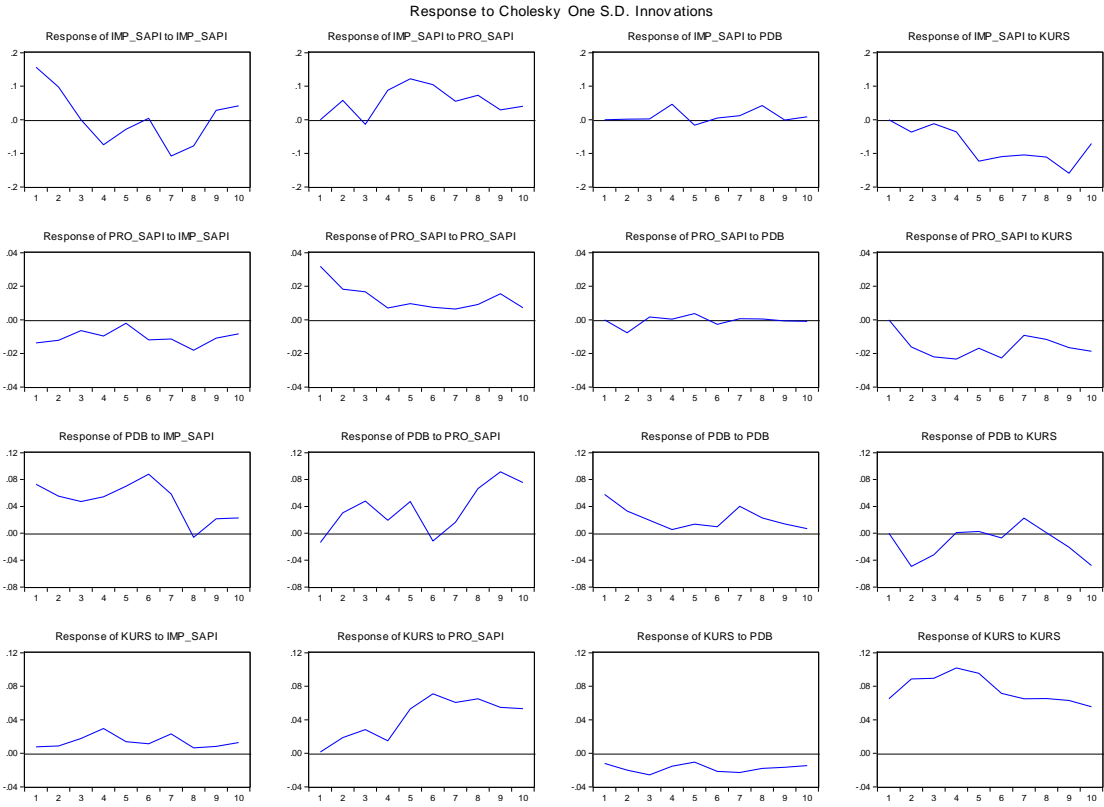
Cointegrating Eq:	CointEq1			
IMP_SAPI(-1)	1.000000			
PRO_SAPI(-1)	-4.060963 (1.18772) [-3.41911]			
PDB(-1)	-0.486047 (0.18649) [-2.60630]			
KURS(-1)	0.131465 (0.13944) [0.94280]			
C	8.580006			
Error Correction:	D(IMP_SAPI)	D(PRO_SAPI)	D(PDB)	D(KURS)
CointEq1	-0.994750 (0.39456) [-2.52119]	0.098253 (0.08739) [1.12425]	0.380211 (0.23721) [1.60282]	0.026525 (0.16794) [0.15795]
D(IMP_SAPI(-1))	0.843199 (0.36691) [2.29813]	-0.032343 (0.08127) [-0.39797]	-0.080085 (0.22059) [-0.36305]	0.032956 (0.15617) [0.21103]
D(IMP_SAPI(-2))	0.037505 (0.24446) [0.15342]	-0.009954 (0.05415) [-0.18383]	-0.131724 (0.14698) [-0.89624]	0.071073 (0.10405) [0.68306]
D(IMP_SAPI(-3))	0.260623 (0.25083) [1.03905]	0.002153 (0.05556) [0.03875]	0.036999 (0.15080) [0.24535]	-0.069476 (0.10676) [-0.65076]
D(IMP_SAPI(-4))	0.571750 (0.22099) [2.58719]	0.055673 (0.04895) [1.13736]	0.156589 (0.13286) [1.17856]	0.044663 (0.09406) [0.47483]
D(PRO_SAPI(-1))	-2.246501 (1.65602) [-1.35656]	-0.096723 (0.36681) [-0.26369]	2.724319 (0.99563) [2.73627]	0.603203 (0.70486) [0.85578]

D(PRO_SAPI(-2))	-4.702315 (1.77606) [-2.64762]	0.395428 (0.39340) [1.00516]	3.106711 (1.06780) [2.90946]	0.399697 (0.75595) [0.52874]
D(PRO_SAPI(-3))	-0.164888 (1.81320) [-0.09094]	0.420634 (0.40162) [1.04733]	2.103681 (1.09013) [1.92976]	-0.189040 (0.77176) [-0.24495]
D(PRO_SAPI(-4))	-1.955948 (1.46462) [-1.33547]	0.023292 (0.32441) [0.07180]	1.065517 (0.88055) [1.21005]	1.063742 (0.62339) [1.70639]
D(PDB(-1))	-0.571206 (0.38259) [-1.49300]	-0.138932 (0.08474) [-1.63943]	-0.400009 (0.23002) [-1.73902]	-0.047099 (0.16284) [-0.28923]
D(PDB(-2))	-0.157130 (0.18768) [-0.83722]	-0.018023 (0.04157) [-0.43355]	-0.138544 (0.11284) [-1.22783]	0.000631 (0.07988) [0.00790]
D(PDB(-3))	-0.083980 (0.18407) [-0.45623]	-0.016359 (0.04077) [-0.40124]	-0.167295 (0.11067) [-1.51168]	0.234666 (0.07835) [2.99519]
D(PDB(-4))	-0.414893 (0.25158) [-1.64914]	0.034168 (0.05573) [0.61315]	-0.030407 (0.15125) [-0.20103]	-0.001241 (0.10708) [-0.01159]
D(KURS(-1))	-0.430344 (0.53649) [-0.80215]	-0.262040 (0.11883) [-2.20514]	-0.806963 (0.32255) [-2.50186]	0.359223 (0.22835) [1.57315]
D(KURS(-2))	1.015441 (0.57854) [1.75518]	-0.240959 (0.12815) [-1.88033]	0.507361 (0.34783) [1.45865]	-0.010067 (0.24625) [-0.04088]
D(KURS(-3))	-0.771247 (0.61177) [-1.26068]	0.032170 (0.13551) [0.23740]	0.696358 (0.36781) [1.89327]	0.338881 (0.26039) [1.30144]
D(KURS(-4))	0.313317 (0.69943) [0.44796]	0.226302 (0.15492) [1.46073]	0.511431 (0.42051) [1.21621]	-0.169735 (0.29770) [-0.57015]
C	0.139505 (0.09270) [1.50486]	0.021074 (0.02053) [1.02630]	-0.003191 (0.05573) [-0.05726]	-0.027648 (0.03946) [-0.70070]
R-squared	0.817411	0.651623	0.798552	0.665235
Adj. R-squared	0.595695	0.228593	0.553937	0.258734
Sum sq. resids	0.343605	0.016858	0.124200	0.062248
S.E. equation	0.156663	0.034701	0.094188	0.066681

F-statistic	3.686750	1.540371	3.264521	1.636491
Log likelihood	27.13795	75.37256	43.41948	54.47168
Akaike AIC	-0.571122	-3.585785	-1.588717	-2.279480
Schwarz SC	0.253355	-2.761309	-0.764241	-1.455004
Mean dependent	0.058839	0.010107	0.065043	0.034196
S.D. dependent	0.246383	0.039509	0.141026	0.077449
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Determinant resid covariance (dof adj.)		3.54E-10		
Determinant resid covariance		1.30E-11		
Log likelihood		219.4885		
Akaike information criterion		-8.968030		
Schwarz criterion		-5.486907		
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Lampiran 10. Analisis IRF (Impulse Response Function)

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Lampiran 11. Hasil VDC (Variance Decomposition)

Variance Decomposition of IMP_S API:					
Period	S.E.	IMP_SAPI	PRO_SAPI	PDB	KURS
1	0.156663	100.0000	0.000000	0.000000	0.000000
2	0.196746	87.99694	8.550786	0.008020	3.444252
3	0.197545	87.28588	8.943385	0.021037	3.749694
4	0.236052	71.10134	20.10402	3.846185	4.948458
5	0.294545	46.59711	29.98799	2.771472	20.64343
6	0.331515	36.80440	33.66132	2.209904	27.32437
7	0.368433	38.39049	29.49516	1.895521	30.21884
8	0.401519	36.05794	28.14425	2.722796	33.07502
9	0.433767	31.32057	24.57006	2.333202	41.77617
10	0.443410	30.86309	24.35647	2.275108	42.50533

Variance Decomposition of PRO_S API:					
Period	S.E.	IMP_SAPI	PRO_SAPI	PDB	KURS
1	0.034701	15.57884	84.42116	0.000000	0.000000
2	0.044825	16.69977	67.21962	3.001164	13.07944
3	0.053106	13.37306	57.73839	2.244671	26.64388
4	0.059218	13.39908	47.85864	1.809872	36.93240
5	0.062467	12.14497	45.36181	1.979596	40.51363
6	0.068003	13.33447	39.46702	1.829211	45.36930
7	0.069863	15.29378	38.22894	1.741782	44.73550
8	0.073663	19.76802	35.91412	1.571351	42.74651
9	0.077833	19.65543	36.13240	1.414681	42.79749
10	0.080833	19.28603	34.30090	1.323984	45.08908

Variance Decomposition of PDB:					
Period	S.E.	IMP_SAPI	PRO_SAPI	PDB	KURS
1	0.094188	60.12363	2.147630	37.72874	0.000000
2	0.128070	51.13462	6.927887	27.14416	14.79333
3	0.149513	47.50562	15.40479	21.61331	15.47627

4	0.160398	52.79542	14.85046	18.90322	13.45090
5	0.181765	55.91097	18.31521	15.27778	10.49605
6	0.202632	63.85537	15.05485	12.52959	8.560187
7	0.216504	63.24059	13.76080	14.41603	8.582578
8	0.227745	57.21977	20.99604	14.02666	7.757526
9	0.247688	49.12869	31.42714	12.17478	7.269393
10	0.264473	43.83040	35.72528	10.74688	9.697432

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KURS:

Period	S.E.	IMP_SAPI	PRO_SAPI	PDB	KURS
1	0.066681	1.375053	0.051660	3.338492	95.23479
2	0.114627	1.055478	2.676353	4.196409	92.07176
3	0.151497	1.987651	5.045661	5.309563	87.65713
4	0.186191	3.861241	3.975795	4.202827	87.96014
5	0.216568	3.270190	8.925202	3.345117	84.45949
6	0.240104	2.883253	15.99758	3.534705	77.58446
7	0.258139	3.298870	19.36387	3.850141	73.48712
8	0.274788	2.966054	22.71185	3.822324	70.49978
9	0.287777	2.786315	24.32583	3.822864	69.06499
10	0.298534	2.775068	25.79667	3.791831	67.63643

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