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LAMPIRAN

Lampiran 1. Data Kejadian *Coral Bleaching* di Panama dan Data Observasi Tingkat Keparahan

No. Kejadian	Titik Koordinat		*Severity Code*
	Latitude	*Longtitude*	
1	7,8167	-81,7667	2
2	7,8167	-81,7667	1
3	9,5621	-78,8813	1
4	9,5621	-78,8813	1
5	9,4233	-82,3242	1
6	9,4233	-82,3242	1
7	9,5407	-78,9032	1
8	9,5407	-78,9032	1
9	9,4922	-78,9627	1
10	9,4922	-78,9627	1
11	9,4887	-78,7281	1
12	9,4887	-78,7281	1
13	9,133	-82,04	1
14	9,133	-82,04	2
15	9,133	-82,04	1
16	9,22	-82,325	1
17	9,22	-82,325	2
18	9,22	-82,325	1
19	9,349	-82,263	1
20	9,349	-82,263	1
21	9,349	-82,263	2
22	9,308	-82,207	1
23	9,308	-82,207	2
24	9,308	-82,207	2
25	9,256	-82,235	1
26	9,256	-82,235	3
27	9,256	-82,235	2
28	9,267	-82,12	1
29	9,267	-82,12	2
30	9,267	-82,12	1
31	9,227	-82,182	3
32	9,227	-82,182	3

Lampiran 2. Data Prediktor

Distance to Shore, Exposure, Turbidity, Cyclone Frequency

No. Kejadian	*Distance to Shore*	*Exposure*	*Turbidity*	*Cyclone Frequency*
1	212.5	0	0.0537	50.003966
2	212.5	0	0.0537	50.003966
3	177.81	0	0.0789	49.713332
4	177.81	0	0.0789	49.713332
5	175.3	0	0.170224339	49.403643
6	175.3	0	0.170224339	49.403643
7	153.27	0	0.0743	49.713332
8	153.27	0	0.0743	49.713332
9	1677.09	0	0.099761426	49.826839
10	1677.09	0	0.099761426	49.826839
11	175.25	0	0.116617709	49.92671
12	175.25	0	0.116617709	49.92671
13	454.88	0	0.245411113	49.167229
14	454.88	0	0.245411113	49.167229
15	454.88	0	0.245411113	49.167229
16	36.78	0	0.258990373	49.479925
17	36.78	0	0.258990373	49.479925
18	36.78	0	0.258990373	49.479925
19	100.82	0	0.718800008	49.437452
20	100.82	0	0.718800008	49.437452
21	100.82	0	0.718800008	49.437452
22	42.91	0	0.241683385	49.381203
23	42.91	0	0.241683385	49.381203
24	42.91	0	0.241683385	49.381203
25	138.11	0	0.158508331	49.381203
26	138.11	0	0.158508331	49.381203
27	138.11	0	0.158508331	49.381203
28	1652.92	0	0.139854804	49.381203
29	1652.92	0	0.139854804	49.381203
30	1652.92	0	0.139854804	49.381203
31	430.74	0	0.120127571	49.355446
	430.74	0	0.120127571	49.355446

Depth, Temperature Minimal, Temperature Maximal, Windspeed

No. Kejadian	*Depth*	*Temperature Minimal*	*Temperature Maximal*	*Windspeed*
1	20	298.02	304.42	2.88888888888889
2	1.5	298.02	304.42	1.88888888888889
3	3.1	297.29	304.42	3
4	11.1	297.29	304.42	3
5	1.2	298.68	306.17	2
6	1.2	298.68	306.17	2
7	6.8	297.29	304.42	3
8	5.8	297.29	304.42	3
9	1.5	298.33	303.98	3
10	8.2	298.33	303.98	3
11	1.2	297.98	304.07	3
12	8.4	297.98	304.07	3
13	8	297.86	306.17	1
14	8	297.86	306.17	2
15	8	297.86	306.17	3
16	8	299.04	305.76	1
17	8	299.04	305.76	2
18	8	299.04	305.76	3
19	10.5	298.17	305.57	2
20	10.5	298.17	305.57	2
21	10.5	298.17	305.57	4
22	8	298.17	304.85	1
23	8	298.17	304.85	2
24	8	298.17	304.85	3
25	10.5	298.25	304.86	1
26	10.5	298.25	304.86	2
27	10.5	298.25	304.86	3
28	5.5	297.956	306.302	1
29	5.5	297.956	306.302	1
30	5.5	297.956	306.302	3
31	6	298.01	306.34	2
32	6	298.01	306.34	3

SSTA, SSTA *Frequency Minimal*, SSTA DHW *Maximal*

No. Kejadian	SSTA	SSTA *Frequency Minimal*	SSTA DHW *Maximal*
1	-0.11	6	23.18
2	-0.7	6	23.18
3	-0.66	4	18.24
4	-0.66	4	18.24
5	-0.49	8	30.78
6	-0.49	8	30.78
7	-0.66	4	18.24
8	-0.66	4	18.24
9	-0.14	4	19.14
10	-0.14	4	19.14
11	-0.05	5	24.05
12	-0.05	5	24.05
13	1.86	9	24.14
14	1.55	9	24.14
15	-0.6	9	24.14
16	2.16	6	23.82
17	0.16	6	23.82
18	0.67	6	23.82
19	0.98	7	22.64
20	-0.71	7	22.64
21	-0.87	7	22.64
22	0.73	9	27.99
23	0.46	9	27.99
24	-0.95	9	27.99
25	1.7	9	26.77
26	-0.12	9	26.77
27	0.03	9	26.77
28	1.158	8.2	23.56
29	-0.148	8.2	23.56
30	-0.428	8.2	23.56
31	0.14	9	23.63
32	0.67	9	23.63

TSA, TSA *Frequency*, TSA DHW

No. Kejadian	TSA	TSA *Frequency*	TSA DHW
1	-1.58	2	2.53
2	-2.41	1	0
3	-1.11	0	0
4	-1.11	0	0
5	-1.06	0	0
6	-1.06	0	0
7	-1.11	0	0
8	-1.11	0	0
9	-0.57	0	0
10	-0.57	0	0
11	-0.48	0	0
12	-0.48	0	0
13	1.61	11	2.93
14	1.53	11	12.5
15	-1.12	13	12.24
16	2.09	4	9.96
17	0.16	5	0
18	0.12	0	0
19	0.9	5	7.68
20	-0.72	0	0
21	-1.57	0	0
22	0.55	5	7.34
23	0.37	0	0
24	-1.63	0	0
25	1.44	3	4.35
26	-0.32	0	0
27	-0.78	0	0
28	0.936	7.4	6.676
29	-0.182	1.8	1.302
30	-1.104	1.2	0.668
31	0.01	0	0
32	-0.17	0	0

Lampiran 3. Perhitungan prediksi Tingkat Keparahan ($\hat{Y}$) berdasarkan tiga prediktor yang signifikan

No. Kejadian	SSTA*FMin*	SSTADHW*Max*	TSAF	$\hat{Y}$
1	6	23.18	2	1
2	6	23.18	1	1
3	4	18.24	0	1
4	4	18.24	0	1
5	8	30.78	0	1
6	8	30.78	0	1
7	4	18.24	0	1
8	4	18.24	0	1
9	4	19.14	0	1
10	4	19.14	0	1
11	5	24.05	0	1
12	5	24.05	0	1
13	9	24.14	11	1
14	9	24.14	11	1
15	9	24.14	13	1
16	6	23.82	4	1
17	6	23.82	5	1
18	6	23.82	0	1
19	7	22.64	5	1
20	7	22.64	0	2
21	7	22.64	0	2
22	9	27.99	5	1
23	9	27.99	0	2
24	9	27.99	0	2
25	9	26.77	3	2
26	9	26.77	0	2
27	9	26.77	0	2
28	8.2	23.56	7.4	1
29	8.2	23.56	1.8	2
30	8.2	23.56	1.2	2
31	9	23.63	0	2
32	9	23.63	0	2

Lampiran 4. Data Observasi dan Data Prediksi Tingkat Keparahan *Coral Bleaching*

No. Kejadian	Data Observasi(Y)	Data Prediksi ($\hat{Y}$)
1	2	1
2	1	1
3	1	1
4	1	1
5	1	1
6	1	1
7	1	1
8	1	1
9	1	1
10	1	1
11	1	1
12	1	1
13	1	1
14	2	1
15	1	1
16	1	1
17	2	1
18	1	1
19	1	1
20	1	2
21	2	2
22	1	1
23	2	2
24	2	2
25	1	2
26	3	2
27	2	2
28	1	1
29	2	2
30	1	2
31	3	2
32	3	2

Lampiran 5. Gambar proses pengolahan pada *Software*

```
%Menghitung persentase kebenaran model stepwise kejadian bleaching untuk lokasi di Panama
%Halmar Halide, Laboratorium Hidrometeorologi, Departemen Geofisika,
%FMIPA Unhas, 2023.
%Data skripsi Dominikus Mangopo

clear
clf
load Mod16.txt
factors=Mod16(:,1:14);
bleach=Mod16(:,15);
mdl = stepwiselm(factors,bleach,'PEnter',0.05);

tetapan=1.6588;x_10=0.37259;x_11=-0.11062;x_13=-0.093057;

x10=factors(:,10);xsepuluh=x10-mean(x10)./std(x10);
x11=factors(:,11);xsebelas=x11-mean(x11)./std(x11);
x13=factors(:,13);xtigabelas=x13-mean(x13)./std(x13);

bleach_obs=bleach;
bleach_mod=round(tetapan+x_10.*x10+x_11.*x11+x_13.*x13);
[m,n]=size(bleach_mod);

%utk menyesuaikan nilai prediksi bleaching yg >3 atau <1
```

```
 for i=1:m
     if bleach_mod(i)>=3
        bleach_mod(i)=3;
     else if bleach_mod(i)<=1
        bleach_mod(i)=1;
         else
             bleach_mod(i)=bleach_mod(i);
         end
     end
 end
%exitt
%contingency tabel or confusion matrix
C = confusionmat(bleach_obs,bleach_mod,'Order',[1 2 3]);
confusionmat=[18,3,0;3,5,0;0,3,0]
numCategories = size(confusionmat, 1);
totalCorrect = sum(diag(confusionmat));
totalIncorrect = sum(confusionmat(:)) - totalCorrect;
expectedCorrect = sum(sum(confusionmat, 2) .* sum(confusionmat, 1)) / sum(confusionmat(:));
HeidkeSS = (totalCorrect - expectedCorrect) / (sum(confusionmat(:)) - expectedCorrect);
disp(HeidkeSS);

diagonal=sum(diag(C));
PC=100.*(diagonal./m);
hasil_regression=[bleach_obs,bleach_mod];
```

```
pearmse1(bleach_mod,bleach_obs)

%standardized variabels
Y=bleach;X=[xsepuluh xsebelas xtigabelas];
[B,BINT] = regress(Y,X);
%exitt
%standardized coeffs B, strength:
%A standardized beta coefficient compares the strength of the effect of each individual inde
%variable to the dependent variable. The higher the absolute value of the beta coefficient,
```

Lampiran 6. Gambar Hasil Pengolahan Data Pada *Software*

1. Nilai Signifikan, Konstanta (a), dan Koefisien (b)

Estimated Coefficients:

	Estimate	SE	tStat	pValue
(Intercept)	(a) 1.6588	0.71954	2.3054	0.028766
x10	(b) 0.37259	0.082867	4.4962	0.00010977
x11	-0.11062	0.044522	-2.4847	Sig. 0.019213
x13	-0.093057	0.028931	-3.2165	0.0032659

2. Nilai Koefisien Standar (β)

B

3×1 double

	1
1	(β) 0.1950
2	0.0489
3	-0.0627
4	
5	
6	
7	
8	

3. Nilai Korelasi *Pearson* (r) dan RMSE

ans

1×4 double

	1	2
1	0.6183	0.5303
2		
3	(r)	RMSE
4		