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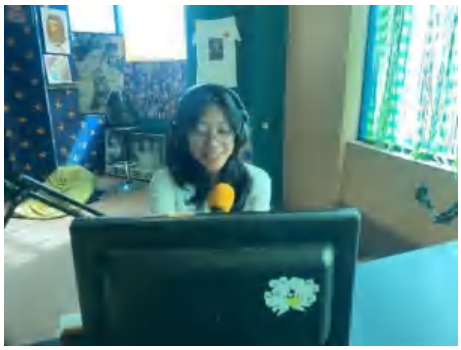
Lampiran 1 Dokumentasi proses rekaman suara








Lampiran 2 *Pseudocode* tahap *preprocessing*

```
SET dataset directory.
INITIALIZE lists for file emotions and file paths.

FOR each directory in dataset directory:
    LIST all files in the directory.
    FOR each file in the directory:
    EXTRACT emotion from the file name.
    APPEND emotion to file_emotion list.
    APPEND file path to file_path list.

CREATE a dataframe for emotions and paths.
REPLACE emotion integers with their string representation.
DISPLAY the dataframe.
SAVE the dataframe to a CSV file.

PLOT the count of each emotion.

DEFINE function to create waveplot for audio data.
DEFINE function to create spectrogram for audio data.

DISPLAY waveplot and spectrogram for sample audio files of different
emotions.
DEFINE data augmentation functions:
    noise
    stretch
    shift
    pitch

    AY effects of augmentation techniques on a sample audio.
```

DEFINE function to extract features from audio data.
DEFINE function to get features from audio path with and without augmentation.

EXTRACT features for all audio files in the dataset.

CREATE a dataframe with extracted features and save to CSV.

SPLIT the data into training and testing sets.
SCALE the data using StandardScaler.

RESHAPE data to be compatible with the model.

Lampiran 3 *Pseudocode* tahap *build* model

```
BUILD a Convolutional Neural Network (CNN) model.
COMPILE the model.
DISPLAY model summary.

DEFINE learning rate reduction callback.
TRAIN the model.
PRINT model accuracy on test data.

PLOT training and testing accuracy and loss.

PREDICT on test data.
CONVERT predictions and actual labels back to original form.

SAVE the trained model.

DISPLAY a sample of predicted vs actual labels.

PRINT total data count after augmentation.

DISPLAY confusion matrix.
PRINT classification report.
```

Lampiran 4 Iterasi proses pelatihan model

1. Pelatihan Model Data Primer

Epoch	*Training Loss*	*Training Accuracy*	*Validation Loss*	*Validation Accuracy*	*Learning Rate*
1/50	1.6233	0.2000	1.4984	0.3467	0.0010
2/50	1.4744	0.3333	1.3577	0.4000	0.0010
3/50	1.4058	0.3600	1.2946	0.3333	0.0010
4/50	1.3348	0.3689	1.2781	0.3733	0.0010
5/50	1.3267	0.4044	1.3084	0.4000	0.0010
6/50	1.3195	0.3778	1.3058	0.4267	0.0010
7/50	1.3409	0.3689	1.2721	0.3600	0.0010
8/50	1.2542	0.4622	1.2221	0.4667	0.0010
9/50	1.2665	0.4222	1.2081	0.4933	0.0010
10/50	1.2007	0.4400	1.2365	0.4533	0.0010
11/50	1.2057	0.4844	1.1652	0.4667	0.0010
12/50	1.1737	0.4489	1.1696	0.4533	0.0010
13/50	1.1552	0.4978	1.1921	0.5067	0.0010
14/50	1.1483	0.4533	1.1700	0.4933	0.0010
15/50	1.1015	0.5467	1.1509	0.5067	0.0010
16/50	1.0933	0.5467	1.1216	0.5067	0.0010
17/50	1.0582	0.5244	1.1069	0.5200	0.0010
18/50	1.0835	0.5511	1.2321	0.5467	0.0010
19/50	0.9652	0.5422	1.2936	0.4533	0.0010
20/50	1.0297	0.5067	1.1985	0.5333	0.0010
21/50	0.9593	0.5689	1.0304	0.6000	0.0010
22/50	1.0102	0.5333	0.9380	0.5200	0.0010
23/50	0.9391	0.5200	0.9445	0.5733	0.0010
24/50	0.9024	0.5867	1.0418	0.6267	0.0010
25/50	0.9160	0.6311	0.9776	0.6800	0.0010
26/50	0.9090	0.6267	0.9065	0.5733	0.0010
27/50	0.8488	0.6311	0.9300	0.5733	4.0000e-04
28/50	0.7908	0.6800	0.9004	0.6267	4.0000e-04
29/50	0.8689	0.5956	0.9066	0.6533	4.0000e-04
30/50	0.7733	0.6444	0.8835	0.6400	4.0000e-04
31/50	0.7761	0.6978	0.8632	0.6533	4.0000e-04
32/50	0.7490	0.6444	0.8762	0.6533	4.0000e-04
33/50	0.7286	0.6933	0.9144	0.6400	4.0000e-04
	0.7131	0.6844	0.8846	0.7200	4.0000e-04
	0.6917	0.6978	0.8609	0.7200	4.0000e-04
	0.6921	0.7422	0.8410	0.6667	4.0000e-04
	0.6368	0.7067	0.8349	0.6533	4.0000e-04

Epoch	*Training Loss*	*Training Accuracy*	*Validation Loss*	*Validation Accuracy*	*Learning Rate*
38/50	0.6389	0.7200	0.8318	0.7200	4.0000e-04
39/50	0.6745	0.6933	0.8312	0.7067	4.0000e-04
40/50	0.6068	0.7422	0.8418	0.7200	1.6000e-04
41/50	0.6752	0.7067	0.8405	0.7200	1.6000e-04
42/50	0.6020	0.7156	0.8463	0.7067	1.6000e-04
43/50	0.5895	0.7600	0.8464	0.7200	1.6000e-04
44/50	0.5988	0.7644	0.8323	0.7333	1.6000e-04
45/50	0.5984	0.7733	0.8397	0.6933	1.6000e-04
46/50	0.5883	0.7422	0.8650	0.7067	1.6000e-04
47/50	0.5757	0.7556	0.8598	0.7200	6.4000e-05
48/50	0.5890	0.7556	0.8403	0.7067	6.4000e-05
49/50	0.5564	0.7244	0.8288	0.7067	6.4000e-05
50/50	0.5402	0.7556	0.8249	0.7067	2.5600e-05

2. Pelatihan Model Data Primer dengan Data Augmentasi

Epoch	*Training Loss*	*Training Accuracy*	*Validation Loss*	*Validation Accuracy*	*Learning Rate*
1/50	1.555	0.2904	1.3917	0.4044	0.0010
2/50	1.4128	0.3689	1.3100	0.4444	0.0010
3/50	1.3327	0.4178	1.3397	0.4311	0.0010
4/50	1.3163	0.4370	1.2620	0.4533	0.0010
5/50	1.2628	0.4356	1.2403	0.4978	0.0010
6/50	1.2439	0.4533	1.2305	0.4578	0.0010
7/50	1.2160	0.4578	1.1448	0.5333	0.0010
8/50	1.1310	0.4978	1.1050	0.5511	0.0010
9/50	1.0909	0.5185	1.1420	0.5067	0.0010
10/50	1.0337	0.5452	1.0637	0.5600	0.0010
11/50	0.9690	0.6059	0.9561	0.5556	0.0010
12/50	0.8843	0.6059	1.0274	0.5733	0.0010
13/50	0.8900	0.6030	0.9219	0.5556	0.0010
14/50	0.8214	0.6474	0.8544	0.5911	0.0010
15/50	0.7677	0.6622	0.9474	0.6267	0.0010
16/50	0.7573	0.6415	0.8945	0.5556	0.0010
17/50	0.7409	0.6800	0.7286	0.6667	0.0010
18/50	0.6952	0.7126	0.7543	0.6489	0.0010
19/50	0.6421	0.7259	0.8134	0.6844	0.0010
	0.6025	0.7393	0.8380	0.6622	0.0010
	0.5724	0.7704	0.7928	0.6578	0.0010
	0.6049	0.7600	0.7122	0.7200	0.0010
	0.4954	0.8119	0.6785	0.7244	0.0010

Epoch	*Training Loss*	*Training Accuracy*	*Validation Loss*	*Validation Accuracy*	*Learning Rate*
24/50	0.4885	0.8119	0.6748	0.7111	0.0010
25/50	0.4309	0.7867	0.7038	0.7200	0.0010
26/50	0.4221	0.8089	0.6716	0.7467	0.0010
27/50	0.4471	0.8385	0.6288	0.7733	0.0010
28/50	0.4275	0.8059	0.5641	0.7733	0.0010
29/50	0.3309	0.8281	0.6258	0.7511	4.0000e-04
30/50	0.3010	0.8593	0.5909	0.7511	4.0000e-04
31/50	0.2737	0.8800	0.6201	0.7911	4.0000e-04
32/50	0.2303	0.8830	0.6155	0.7778	4.0000e-04
33/50	0.2546	0.9170	0.5981	0.7822	4.0000e-04
34/50	0.2235	0.9052	0.6277	0.7644	4.0000e-04
35/50	0.2299	0.9111	0.6527	0.7778	4.0000e-04
36/50	0.2192	0.9156	0.6376	0.7778	4.0000e-04
37/50	0.2082	0.9067	0.5782	0.7956	4.0000e-04
38/50	0.2078	0.9244	0.6834	0.7822	4.0000e-04
39/50	0.2036	0.9289	0.5862	0.8000	4.0000e-04
40/50	0.1701	0.9185	0.6554	0.8000	4.0000e-04
41/50	0.1558	0.9348	0.6245	0.8044	4.0000e-04
42/50	0.1498	0.9496	0.6221	0.7911	4.0000e-04
43/50	0.1442	0.9378	0.6138	0.8133	4.0000e-04
44/50	0.1509	0.9481	0.6516	0.8000	4.0000e-04
45/50	0.1554	0.9378	0.5823	0.8000	4.0000e-04
46/50	0.1379	0.9467	0.6002	0.8000	1.6000e-04
47/50	0.1219	0.9585	0.6243	0.8044	1.6000e-04
48/50	0.1481	0.9511	0.6303	0.7822	1.6000e-04
49/50	0.1285	0.9630	0.5978	0.8089	1.6000e-04
50/50	0.1241	0.9511	0.6016	0.7956	6.4000e-05

3. Pelatihan Model Data Sekunder

Epoch	*Training Loss*	*Training Accuracy*	*Validation Loss*	*Validation Accuracy*	*Learning Rate*
1/50	1.555	0.2246	1.5728	0.2880	0.0010
2/50	1.4128	0.2112	1.5717	0.2640	0.0010
3/50	1.3327	0.2834	1.5644	0.3040	0.0010
4/50	1.3163	0.2594	1.5485	0.3440	0.0010
5/50	1.2628	0.2914	1.5352	0.3200	0.0010
	1.2439	0.2754	1.5232	0.2720	0.0010
	1.2160	0.3422	1.5011	0.3200	0.0010
	1.1310	0.3717	1.4689	0.4400	0.0010
	1.0909	0.3422	1.4873	0.3680	0.0010

Epoch	*Training Loss*	*Training Accuracy*	*Validation Loss*	*Validation Accuracy*	*Learning Rate*
10/50	1.0337	0.3824	1.5062	0.3120	0.0010
11/50	0.9690	0.3342	1.4556	0.3200	0.0010
12/50	0.8843	0.3529	1.4593	0.3920	0.0010
13/50	0.8900	0.3636	1.4257	0.3200	0.0010
14/50	0.8214	0.4037	1.4612	0.3040	0.0010
15/50	0.7677	0.3743	1.4474	0.3040	0.0010
16/50	0.7573	0.3770	1.4222	0.4080	0.0010
17/50	0.7409	0.3743	1.4161	0.4080	0.0010
18/50	0.6952	0.4064	1.4059	0.4480	0.0010
19/50	0.6421	0.4278	1.3957	0.4080	0.0010
20/50	0.6025	0.4599	1.4129	0.4240	0.0010
21/50	0.5724	0.4759	1.3899	0.4160	0.0010
22/50	0.6049	0.4465	1.3482	0.4640	0.0010
23/50	0.4954	0.4893	1.3552	0.4400	0.0010
24/50	0.4885	0.4893	1.3636	0.4720	0.0010
25/50	0.4309	0.5080	1.3222	0.4560	0.0010
26/50	0.4221	0.5134	1.3305	0.4640	0.0010
27/50	0.4471	0.5455	1.2997	0.5040	0.0010
28/50	0.4275	0.5535	1.3098	0.4720	0.0010
29/50	0.3309	0.5588	1.3163	0.4560	0.0010
30/50	0.3010	0.5455	1.3111	0.4640	0.0010
31/50	0.2737	0.6016	1.3108	0.5120	0.0010
32/50	0.2303	0.5909	1.2772	0.5280	0.0010
33/50	0.2546	0.6310	1.2686	0.5120	0.0010
34/50	0.2235	0.6016	1.2965	0.5120	0.0010
35/50	0.2299	0.6497	1.3094	0.5200	0.0010
36/50	0.2192	0.6497	1.2943	0.5600	0.0010
37/50	0.2082	0.6444	1.3896	0.5280	0.0010
38/50	0.2078	0.6711	1.2784	0.5360	0.0010
39/50	0.2036	0.6979	1.2979	0.5120	0.0010
40/50	0.1701	0.6952	1.4121	0.5760	0.0010
41/50	0.1558	0.6417	1.3709	0.5600	0.0010
42/50	0.1498	0.6765	1.2623	0.6080	4.0000e-04
43/50	0.1442	0.6524	1.3108	0.5680	4.0000e-04
44/50	0.1509	0.6898	1.3101	0.5440	4.0000e-04
45/50	0.1554	0.7193	1.3417	0.5680	4.0000e-04
	0.1379	0.7246	1.3357	0.6000	4.0000e-04
	0.1219	0.7620	1.3192	0.6080	4.0000e-04
	0.1481	0.7246	1.3101	0.6320	4.0000e-04
	0.1285	0.7513	1.2803	0.5840	4.0000e-04

Epoch	*Training Loss*	*Training Accuracy*	*Validation Loss*	*Validation Accuracy*	*Learning Rate*
50/50	0.1241	0.7487	1.3500	0.6240	4.0000e-04

4. Pelatihan Model Data Sekunder dengan Data Augmentasi

Epoch	*Training Loss*	*Training Accuracy*	*Validation Loss*	*Validation Accuracy*	*Learning Rate*
1/50	1.6113	0.2094	1.5694	0.2533	0.0010
2/50	1.5696	0.2683	1.5290	0.3093	0.0010
3/50	1.5329	0.2932	1.5130	0.2667	0.0010
4/50	1.5161	0.2950	1.4739	0.3493	0.0010
5/50	1.4747	0.3520	1.4463	0.3787	0.0010
6/50	1.4506	0.3619	1.4214	0.4000	0.0010
7/50	1.4204	0.3681	1.4233	0.3653	0.0010
8/50	1.4162	0.3565	1.4073	0.4133	0.0010
9/50	1.3815	0.4225	1.4048	0.3680	0.0010
10/50	1.3696	0.4046	1.3498	0.3973	0.0010
11/50	1.3272	0.4314	1.3824	0.4400	0.0010
12/50	1.2908	0.4314	1.3286	0.4080	0.0010
13/50	1.2809	0.4483	1.3146	0.4453	0.0010
14/50	1.2358	0.4742	1.2951	0.4453	0.0010
15/50	1.1959	0.4938	1.2343	0.4880	0.0010
16/50	1.1537	0.5036	1.2755	0.4480	0.0010
17/50	1.1809	0.5062	1.2248	0.4933	0.0010
18/50	1.1327	0.5294	1.1910	0.4880	0.0010
19/50	1.0748	0.5499	1.1747	0.5147	0.0010
20/50	1.0438	0.5749	1.1549	0.5093	0.0010
21/50	1.0755	0.5597	1.1341	0.5307	0.0010
22/50	1.0067	0.5900	1.1201	0.5280	0.0010
23/50	0.9707	0.5954	1.1079	0.5227	0.0010
24/50	0.9286	0.6301	1.1104	0.5333	0.0010
25/50	0.9300	0.6230	1.0710	0.5627	0.0010
26/50	0.8796	0.6435	1.0827	0.5600	0.0010
27/50	0.8783	0.6364	1.0279	0.5813	0.0010
28/50	0.8011	0.6863	1.0191	0.5893	0.0010
29/50	0.7628	0.6907	0.9992	0.6107	0.0010
30/50	0.7668	0.6818	0.9847	0.6000	0.0010
31/50	0.7295	0.7032	0.9802	0.6347	0.0010
	0.6797	0.7273	0.9164	0.6400	0.0010
	0.6358	0.7344	0.9378	0.6320	0.0010
	0.6628	0.7389	0.9450	0.6560	0.0010
	0.6298	0.7380	0.9755	0.6373	0.0010

Epoch	*Training Loss*	*Training Accuracy*	*Validation Loss*	*Validation Accuracy*	*Learning Rate*
36/50	0.5926	0.7531	0.9706	0.6400	0.0010
37/50	0.5757	0.7674	0.9207	0.6640	0.0010
38/50	0.5669	0.7772	0.8743	0.6747	0.0010
39/50	0.5328	0.7843	0.9248	0.6613	0.0010
40/50	0.5490	0.8021	0.9201	0.6933	0.0010
41/50	0.4707	0.8164	0.9297	0.6827	0.0010
42/50	0.4524	0.8173	0.8976	0.6933	0.0010
43/50	0.4501	0.8226	0.9445	0.6907	0.0010
44/50	0.4251	0.8316	0.9478	0.7040	0.0010
45/50	0.4028	0.8387	1.0329	0.6720	0.0010
46/50	0.3942	0.8440	1.0359	0.7093	0.0010
47/50	0.3946	0.8494	0.9407	0.7013	0.0010
48/50	0.4217	0.8307	0.9842	0.6853	0.0010
49/50	0.3250	0.8779	0.9486	0.7307	4.0000e-04
50/50	0.2808	0.9029	0.9630	0.7333	4.0000e-04

5. Pelatihan Model Data Gabungan

Epoch	*Training Loss*	*Training Accuracy*	*Validation Loss*	*Validation Accuracy*	*Learning Rate*
1/50	1.5938	0.2270	1.5945	0.2000	0.0010
2/50	1.5620	0.2788	1.5375	0.2550	0.0010
3/50	1.5023	0.3322	1.5026	0.2950	0.0010
4/50	1.4915	0.3055	1.4773	0.3350	0.0010
5/50	1.4767	0.3406	1.4572	0.3350	0.0010
6/50	1.4682	0.3523	1.4599	0.2750	0.0010
7/50	1.4551	0.3506	1.4417	0.3250	0.0010
8/50	1.4190	0.3306	1.4218	0.3250	0.0010
9/50	1.4175	0.3523	1.4280	0.3700	0.0010
10/50	1.3794	0.3773	1.3933	0.4250	0.0010
11/50	1.3583	0.3890	1.4218	0.3700	0.0010
12/50	1.3898	0.3689	1.3896	0.3550	0.0010
13/50	1.3691	0.4007	1.4013	0.4150	0.0010
14/50	1.3398	0.4057	1.3686	0.4300	4.0000e-04
15/50	1.3172	0.4174	1.3389	0.4350	4.0000e-04
16/50	1.2836	0.4491	1.3359	0.4300	4.0000e-04
17/50	1.2736	0.4207	1.3333	0.4300	4.0000e-04
	1.2585	0.4357	1.3214	0.4300	4.0000e-04
	1.2560	0.4491	1.3217	0.4450	4.0000e-04
	1.2538	0.4307	1.3082	0.4350	4.0000e-04
	1.2027	0.4641	1.3089	0.4500	4.0000e-04

Epoch	*Training Loss*	*Training Accuracy*	*Validation Loss*	*Validation Accuracy*	*Learning Rate*
22/50	1.2065	0.4825	1.2955	0.4550	4.0000e-04
23/50	1.1571	0.5142	1.2868	0.4550	4.0000e-04
24/50	1.1447	0.5025	1.2804	0.4800	4.0000e-04
25/50	1.1507	0.5092	1.2516	0.4500	4.0000e-04
26/50	1.1319	0.5092	1.2351	0.4900	4.0000e-04
27/50	1.0944	0.5392	1.2359	0.4900	4.0000e-04
28/50	1.0957	0.5259	1.2316	0.4900	4.0000e-04
29/50	1.0619	0.5309	1.2349	0.4850	4.0000e-04
30/50	1.0404	0.5626	1.2250	0.5200	4.0000e-04
31/50	1.0308	0.5743	1.2424	0.5000	4.0000e-04
32/50	1.0280	0.5860	1.2059	0.4950	4.0000e-04
33/50	1.0040	0.5593	1.2323	0.4900	4.0000e-04
34/50	0.9834	0.6127	1.1983	0.5100	4.0000e-04
35/50	0.9712	0.5960	1.1942	0.5000	4.0000e-04
36/50	0.9325	0.5910	1.2531	0.5000	4.0000e-04
37/50	0.9519	0.6093	1.1881	0.5250	4.0000e-04
38/50	0.9113	0.6277	1.1787	0.5400	4.0000e-04
39/50	0.8994	0.6427	1.2042	0.5150	4.0000e-04
40/50	0.8976	0.6311	1.1530	0.5450	4.0000e-04
41/50	0.8648	0.6377	1.2036	0.5400	4.0000e-04
42/50	0.8628	0.6327	1.1884	0.5300	4.0000e-04
43/50	0.8408	0.6377	1.1666	0.5500	4.0000e-04
44/50	0.8203	0.6327	1.1745	0.5300	4.0000e-04
45/50	0.8243	0.6377	1.2076	0.5500	4.0000e-04
46/50	0.8050	0.6611	1.1888	0.5500	4.0000e-04
47/50	0.7977	0.6745	1.1759	0.5250	4.0000e-04
48/50	0.7632	0.6611	1.2563	0.5300	4.0000e-04
49/50	0.7551	0.6728	1.1984	0.5500	4.0000e-04
50/50	0.7379	0.7045	1.1694	0.5550	4.0000e-04

6. Pelatihan Model Data Gabungan dengan Data Augmentasi

Epoch	*Loss*	*Accuracy*	*Validation Loss*	*Validation Accuracy*	*Learning Rate*
1/50	1.6052	0.2354	1.5665	0.2750	0.0010
2/50	1.5744	0.2632	1.5473	0.3133	0.0010
3/50	1.5569	0.2871	1.5191	0.2967	0.0010
	1.5445	0.2666	1.4899	0.3217	0.0010
	1.5310	0.2805	1.4951	0.3350	0.0010
	1.5118	0.2977	1.4359	0.3567	0.0010
	1.5026	0.3161	1.4240	0.3733	0.0010

Epoch	*Loss*	*Accuracy*	*Validation Loss*	*Validation Accuracy*	*Learning Rate*
8/50	1.4891	0.3127	1.4464	0.3600	0.0010
9/50	1.4627	0.3322	1.4315	0.3800	0.0010
10/50	1.4392	0.3361	1.3583	0.3900	0.0010
11/50	1.4320	0.3495	1.3501	0.3983	0.0010
12/50	1.3891	0.3801	1.3409	0.4250	0.0010
13/50	1.3477	0.4140	1.2952	0.4200	0.0010
14/50	1.3473	0.4007	1.2833	0.4250	0.0010
15/50	1.3110	0.4213	1.2232	0.4850	0.0010
16/50	1.2660	0.4452	1.1558	0.5250	0.0010
17/50	1.2255	0.4763	1.1991	0.5067	0.0010
18/50	1.1618	0.4908	1.1677	0.5283	0.0010
19/50	1.1846	0.4819	1.1510	0.5300	0.0010
20/50	1.1414	0.5109	1.1159	0.5467	0.0010
21/50	1.0748	0.5381	1.0886	0.5317	0.0010
22/50	1.0823	0.5253	1.0210	0.5867	0.0010
23/50	0.9995	0.5771	1.0129	0.5783	0.0010
24/50	0.9742	0.5949	0.9719	0.6033	0.0010
25/50	0.9391	0.5999	0.9576	0.6033	0.0010
26/50	0.8801	0.6288	0.9145	0.6500	0.0010
27/50	0.8986	0.6093	0.9025	0.6467	0.0010
28/50	0.8741	0.6294	0.9008	0.6517	0.0010
29/50	0.8289	0.6433	0.9147	0.6417	0.0010
30/50	0.7662	0.6784	0.8794	0.6500	0.0010
31/50	0.8005	0.6561	0.8704	0.6733	0.0010
32/50	0.7440	0.6861	0.7996	0.6950	0.0010
33/50	0.7983	0.6600	0.9166	0.6500	0.0010
34/50	0.7500	0.6772	0.8440	0.6800	0.0010
35/50	0.6500	0.7323	0.7522	0.7383	0.0010
36/50	0.6127	0.7379	0.7495	0.7383	0.0010
37/50	0.5628	0.7590	0.7193	0.7317	0.0010
38/50	0.5278	0.7841	0.7104	0.7417	0.0010
39/50	0.5393	0.7752	0.7023	0.7517	0.0010
40/50	0.5190	0.7919	0.7388	0.7433	0.0010
41/50	0.5165	0.7935	0.7122	0.7483	0.0010
42/50	0.4912	0.8002	0.7006	0.7617	0.0010
43/50	0.4757	0.7986	0.7254	0.7450	0.0010
	0.4544	0.8164	0.7257	0.7617	0.0010
	0.4711	0.8108	0.6845	0.7617	4.0000e-04
	0.4630	0.8030	0.6744	0.7667	4.0000e-04
	0.4031	0.8386	0.6753	0.7717	4.0000e-04

Epoch	*Loss*	*Accuracy*	*Validation Loss*	*Validation Accuracy*	*Learning Rate*
48/50	0.4038	0.8308	0.6571	0.7750	4.0000e-04
49/50	0.4135	0.8386	0.6684	0.7800	4.0000e-04
50/50	0.3883	0.8459	0.6743	0.7783	4.0000e-04

Lampiran 5 *Data feature output*

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Date Type : Data without augmentation

Initial Data :
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  2.0903855e-05], 52930

ZCR :
[0.14372371], 1

Chroma :
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0.6802664  0.65799844
 0.57517046 0.5077178  0.5092944  0.5791303  0.5705869 ], 12

MFCC :
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-3.3791145e+01
  3.5151813e+00 -2.4908945e+01 -3.2130244e+00 -2.6004488e+01
-1.6242649e+01
 -3.6910067e+00 -1.8469273e+01  1.0890036e-01 -1.5820420e+01
-8.8328302e-01
 -1.0430460e+01 -7.7443547e+00 -5.8315268e+00 -8.4786463e+00
-5.0482259e+00], 20

RMS :
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MelSpectogram :
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 1.40889425e+01 1.75273781e+01 1.05876818e+01 8.35111046e+00
1.03402405e+01
 2.94443874e+01 6.76031418e+01 5.29824982e+01 4.02755928e+01
6.75197449e+01
 1.63917122e+01 9.54907799e+00 1.86322517e+01 2.45743904e+01
1.31314278e+01
 1.16945686e+01 1.33961554e+01 1.54405098e+01 6.44343567e+01
4.17271729e+01
 2.99140954e+00 8.88579750e+00 2.89254951e+01 1.22298269e+01
3.84140062e+00
 1.09722543e+00 3.97184223e-01 4.94273514e-01 7.08172262e-01
3.62070179e+00
 1.94749660e+01 2.63340130e+01 4.85590792e+00 1.08914745e+00
7.25629926e-01
 5.21692216e-01 1.33920610e+00 1.01443887e+00 8.79117250e-01
6.57236338e-01
 3.62246931e-01 1.98259461e+00 3.83586097e+00 1.21477056e+00
    6589e-01
    18548e-01 4.01880413e-01 8.85848880e-01 1.97623038e+00
    6969e+00
    75616e-01 9.93875340e-02 1.36721045e-01 6.14013150e-02
    0002e-02
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 7.64198005e-02 1.28886014e-01 3.35044712e-01 1.71473160e-01
8.90840590e-02
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5.17087519e-01
 1.54526561e-01 1.09611735e-01 1.66402668e-01 1.44893646e-01
1.73109874e-01
 2.47062027e-01 3.49942535e-01 3.01323563e-01 2.27956399e-01
1.54842004e-01
 2.22318515e-01 2.59313762e-01 1.07735746e-01 1.66791603e-01
1.93232432e-01
 1.82863131e-01 1.77450076e-01 1.39671564e-01 1.01541683e-01
9.00320858e-02
 9.29510072e-02 1.01089351e-01 8.80284682e-02 8.34815502e-02
1.14040904e-01
 6.68890402e-02 4.56367098e-02 7.16558024e-02 5.98426498e-02
7.67587945e-02
 7.42970333e-02 8.96771774e-02 1.53500766e-01 2.02622965e-01
2.46182114e-01
 2.45209560e-01 2.35105962e-01 1.60122871e-01 8.27711001e-02
4.95136939e-02
 3.87826897e-02 1.82560161e-02 8.90573766e-03 5.14322054e-03
8.96837446e-04
 1.22152851e-05 1.38041525e-08 1.43884487e-08 1.39312970e-08
1.47099462e-08
 1.53598769e-08 1.53164343e-08 1.51868473e-08 1.54442787e-08
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Date Type : Data with noise

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ZCR :
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Chroma :
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 0.65947686 0.5989292  0.57904123 0.61242076 0.67913627], 12

MFCC :
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8.9146209
   -2.9143533    -5.35252001   -3.0479028    -5.06775184   -
2.23498789
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3396], 20


42397], 1

ctogram :
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1.04828293e+01
 2.94340922e+01 6.78291179e+01 5.26613677e+01 4.01298704e+01
6.71440671e+01
 1.62731282e+01 9.65169145e+00 1.86240042e+01 2.45219846e+01
1.31899153e+01
 1.17533733e+01 1.34449431e+01 1.56150585e+01 6.48557124e+01
4.19013545e+01
 2.95399352e+00 8.92667406e+00 2.89306904e+01 1.22401617e+01
3.87022391e+00
 1.13938840e+00 4.46371978e-01 5.53919717e-01 7.77691714e-01
3.71599938e+00
 1.95388481e+01 2.63350282e+01 4.85553589e+00 1.15957467e+00
7.79209153e-01
 5.65638079e-01 1.41640651e+00 1.01620174e+00 8.82822821e-01
7.21104750e-01
 4.03075757e-01 2.05073943e+00 3.91051037e+00 1.25272491e+00
7.15499469e-01
 3.46938484e-01 4.28617612e-01 9.18155415e-01 2.03098925e+00
1.75080768e+00
 1.86574024e-01 1.45377243e-01 1.83272738e-01 1.10648112e-01
6.94022470e-02
 1.11358384e-01 1.63839581e-01 3.90589751e-01 2.20735342e-01
1.29315635e-01
 9.33905333e-02 1.32954477e-01 1.13512509e-01 2.12793526e-01
5.58563707e-01
 2.06770486e-01 1.53640233e-01 2.08477319e-01 1.95102805e-01
2.20206670e-01
 2.86587211e-01 4.03252898e-01 3.53971794e-01 2.82365772e-01
2.03193240e-01
 2.68396634e-01 3.01477526e-01 1.44683851e-01 2.09733428e-01
2.43635592e-01
 2.27960617e-01 2.35485558e-01 1.84118882e-01 1.52137056e-01
1.35224366e-01
 1.31275161e-01 1.54123103e-01 1.40544576e-01 1.30578649e-01
1.69316095e-01
 1.12325685e-01 9.39796740e-02 1.07907599e-01 1.08529942e-01
1.23754194e-01
 1.13279980e-01 1.29302665e-01 1.90690699e-01 2.42639253e-01
2.96238964e-01
 2.89523751e-01 2.82161671e-01 2.06705647e-01 1.33245478e-01
9.69080704e-02
 8.55265923e-02 6.07306267e-02 5.37391172e-02 4.99299090e-02
5.03434964e-02
 4.75382224e-02 4.60918224e-02 4.54066887e-02 4.39837755e-02
4.62212580e-02
 4.79927422e-02 4.78060553e-02 4.63764183e-02 4.63191282e-02
4.60164504e-02
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    ype : Data with stretch

    l Data :
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ZCR :
[0.15245267], 1

Chroma :
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0.66016656 0.66711277
 0.57582617 0.48848584 0.46846858 0.54158735 0.5389487 ], 12

MFCC :
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37.066715
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16.490967
   -3.9231708   -19.492884      0.43131924  -17.263689     -
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4.9415245 ], 20

RMS :
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MelSpectogram :
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3.60731101e+00
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2.23326359e+01
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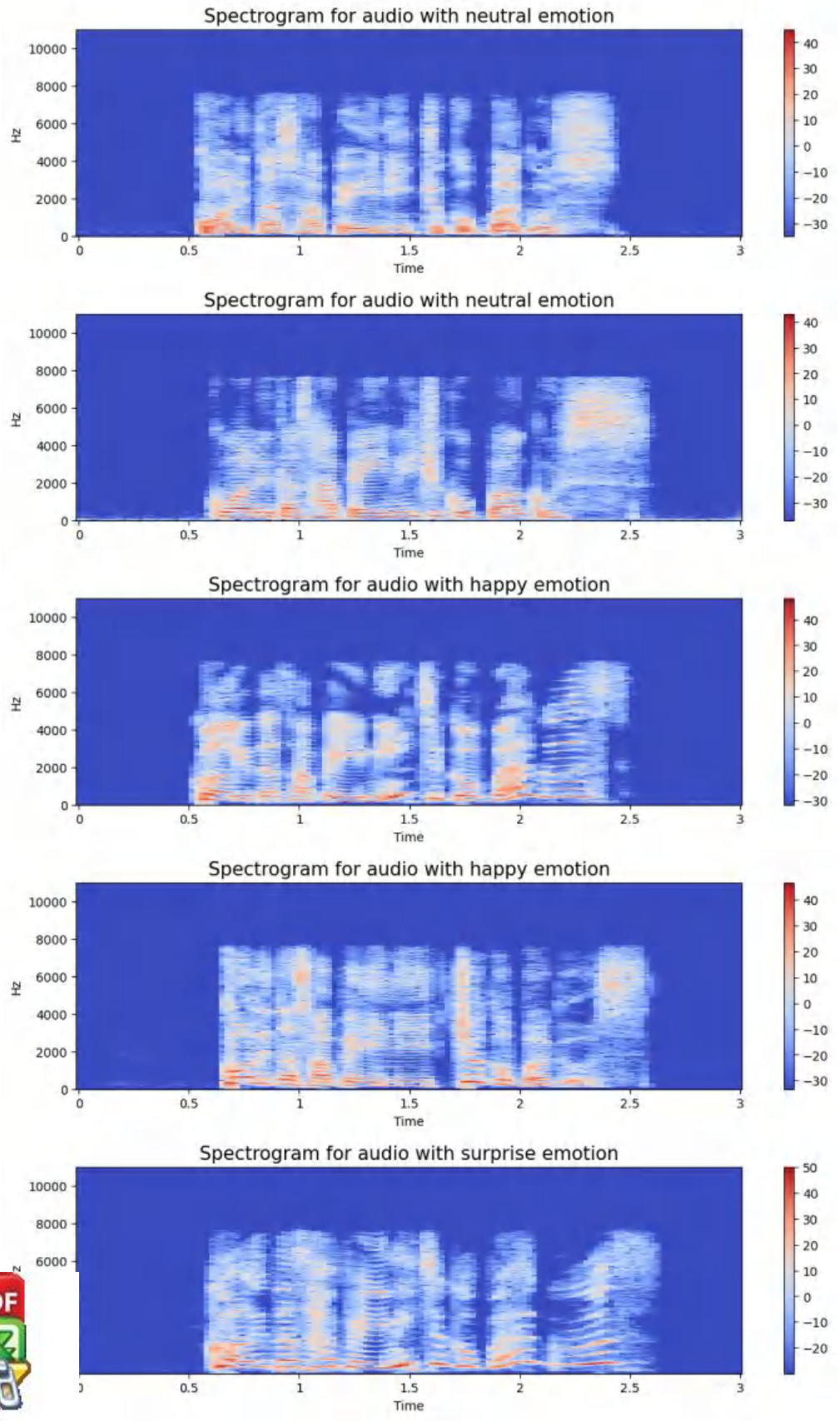
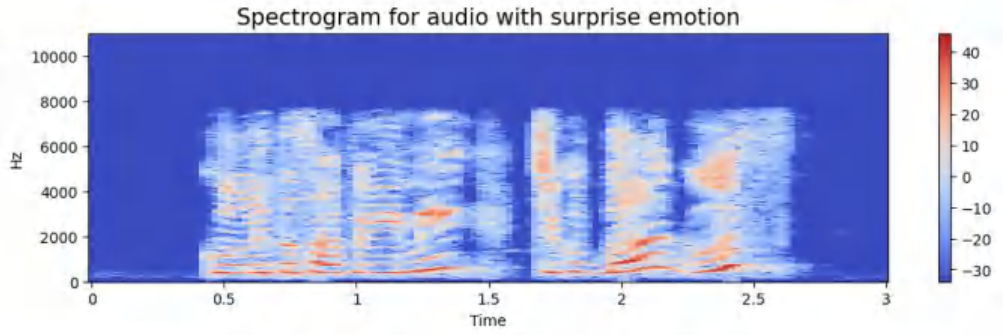
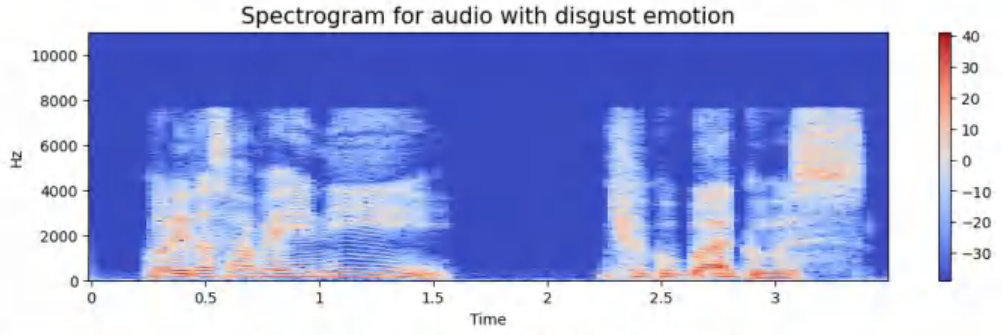
***Link Download Data Output* :**

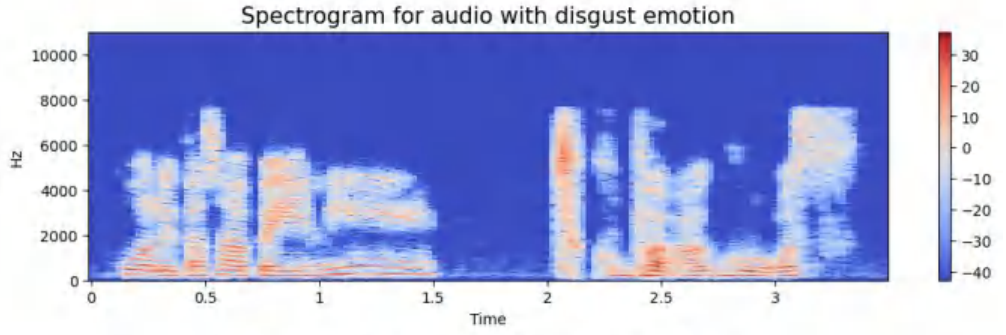
ınhas.ac.id/FeatureOutput

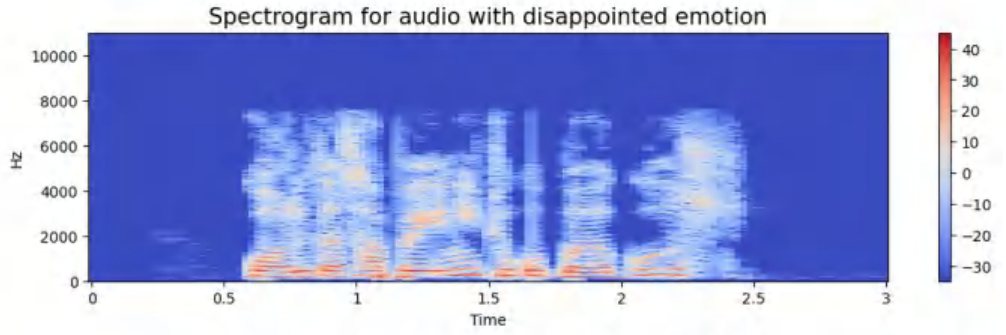
Lampiran 6 Visualisasi *spectrogram* sampel data

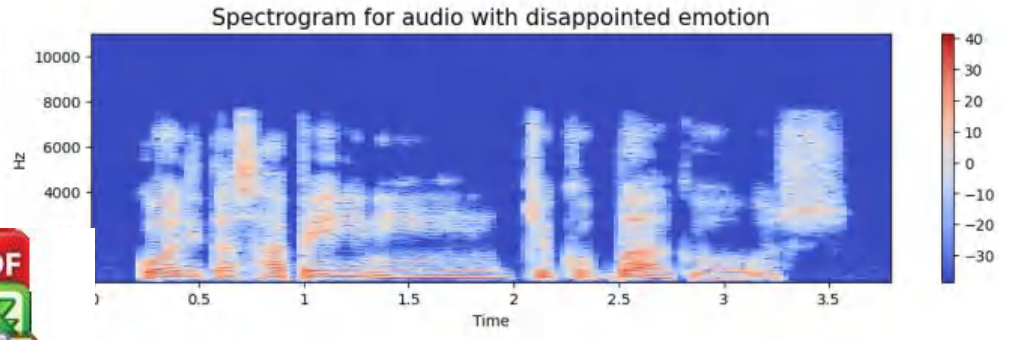












Lampiran 7 Lembar perbaikan skripsi

LEMBAR PERBAIKAN SKRIPSI

"ANALISIS SENTIMEN TERHADAP VIDEO BERDASARKAN PENGENALAN EMOSI PADA DATA AUDIO"

OLEH:

ANDI MUH. RIZKY
D121171323

Skripsi ini telah dipertahankan pada Ujian Akhir Sarjana tanggal 22 November 2023.

Telah dilakukan perbaikan penulisan dan isi skripsi berdasarkan usulan dari penguji dan pembimbing skripsi.

Persetujuan perbaikan oleh tim penguji:

	Nama	Tanda Tangan
Ketua	Anugrayani Bustamin, S.T., M.T.	
Sekretaris	Elly Warni, S.T., M.T.	
Anggota	Prof. Dr. Ir. Indrabayu, S.T., M.T., M.Bus.Sys., IPM, ASEAN. Eng.	
	Prof. Dr. Eng. Intan Sari Areni, S.T., M.T.	

Persetujuan Perbaikan oleh pembimbing:

Pembimbing	Nama	Tanda Tangan
I	Anugrayani Bustamin, S.T., M.T.	
I	Elly Warni, S.T., M.T.	