

Lampiran 1 Hasil Pengisian Angket Penelitian

**KUISIONER PENELITIAN
IDENTIFIKASI TOKOH WAYANG KULIT BALI**

Identitas :

Nama Responden : Ni Komang Srisila

Umur : 21 th

Pekerjaan : mahasiswa

1. Apakah anda mengetahui tentang adanya wayang kulit di Bali?

Jawaban : Ya Tidak

2. Dari manakah anda mengetahui tentang wayang kulit tersebut?

Jawaban : orang tua buku/majalah
 Internet lainnya.....

3. Apakah anda pernah melihat pertunjukan wayang kulit di daerah anda?

Jawaban : Ya Tidak

4. Jika iya, dalam acara apa pertunjukan wayang kulit itu di adakan?

Jawaban: Dalam upacara keagamaan, upacara wayang sapu legar dan upacara keagamaan lainnya

5. Apakah pertunjukan wayang kulit tersebut sering di adakan?

Jawaban: Ya Tidak

6. Jika tidak, menurut anda, faktor apakah yang menyebabkan hal tersebut?

Jawaban: Karena upacara keagamaan dan acara-acara tertentu tidak sering dilakukan. Upacara keagamaan memerlukan tgl / hari baik (diase melah)

7. Sebutkanlah beberapa tokoh pewayangan yang anda ketahui!

Jawaban: *Cengblonc, Mardah Juwalar, Senyut Dekaw*

8. Sebutkanlah nama tokoh wayang berdasarkan gambar berikut ini:



A



B



C



D



E

Jawaban: *C. Hanoman, D. Mardah, dan tidak tahu*



9. Bagaimanakah cara anda membedakan antara tokoh wayang satu dengan yang lainnya?

Jawaban: Dari perawakan, penampilan, serta pakaian yg dipakai

10. Apakah ciri bentuk wayang dan tekstur menjadi salah satu pertimbangan anda dalam membedakan tokoh wayang? (berikan penjelasannya)

Jawaban: Iya. Bentuknya berbeda" serta setiap tokoh memiliki perawakan yg berbeda"

11. Menurut anda, bagaimanakah pengetahuan masyarakat khususnya generasi muda tentang nama tokoh-tokoh pewayangan?

Jawaban: Mulai menurun karena drama pewayangan tidak sering dilakukan. Perlu diase nilai dalam mengadakan acara tersebut

12. Menurut anda, bagaimanakah cara untuk melestarikan kebudayaan wayang kulit pada saat ini?

Jawaban: Dengan mengembangkan teknologi

13. Menurut anda, bagaimanakah jika dikembangkan suatu sistem yang dapat membantu generasi muda dalam mengenal kebudayaan wayang kulit Bali, baik bentuk maupun nama tokoh pewayangan tersebut?

Jawaban: Iya. Karena pada zaman sekarang semua hal dilakukan secara langsung

Singaraja, 05-12-2019


Ni Komang Sriasis

UNIVERSITAS PENDIDIKAN GANESHA



Lampiran 2 Dokumentasi Pengisian Angket



Lampiran 3 Dokumentasi Pengambilan Citra Langsung



Lampiran 4 Pengujian *WhiteBox*

No	Nama Algoritma	Algoritma	Kesesuaian	
			Ya	Tidak
1	<i>Grayscale</i> Citra	a. Citra yang diproses adalah citra RGB b. Mengubah citra RGB menjadi <i>Grayscale</i> menggunakan fitur <i>BGR2GRAY</i> pada OpenCV	✓	
2	Segmentasi Citra	a. Citra yang digunakan adalah citra <i>grayscale</i> b. Melakukan deteksi tepi menggunakan kernel deteksi tepi sobel c. Melakukan penghapusan <i>noise</i> citra menggunakan fitur <i>fastNlMeansDenoising</i> pada OpenCV	✓	
3	<i>Masking</i>	a. Tentukan nilai ambang (T) menggunakan nilai <i>threshold</i> b. Mensegmentasi citra menggunakan T. Ini akan menghasilkan dua kelompok piksel : G1, yang berisi semua piksel dengan nilai intensitas $> T$ bernilai 1 (putih), dan G2, yang berisi semua piksel dengan nilai intensitas $< T$ bernilai 0 (hitam). c. Melakukan operasi <i>closing</i> pada citra biner yaitu: <ul style="list-style-type: none"> • Menentukan ukuran <i>structuring elemen</i> sesuai dengan kebutuhan • Lakukan proses dilasi yaitu: <ul style="list-style-type: none"> - Letakkan titik poros <i>structuring elemen</i> disetiap piksel citra yang akan diproses - Beri nilai 1 pada semua piksel yang terkena atau tertimpa <i>structuring elemen</i> • Lakukan proses erosi yaitu: <ul style="list-style-type: none"> ✓ Letakkan titik poros <i>structuring elemen</i> disetiap piksel citra yang akan diproses ✓ Jika ada bagian <i>structuring elemen</i> yang berada diluar piksel citra, maka piksel yang tertimpa poros <i>structuring elemen</i> dihapus 	✓	

No	Nama Algoritma	Algoritma	Kesesuaian	
			Ya	Tidak
4	Deteksi Objek	a. Melakukan deteksi objek wayang menggunakan fitur <i>findContours</i> pada OpenCV yaitu mencari nilai piksel putih pada <i>background</i> hitam, sehingga didapatkan koordinat letak objek wayang	✓	
5	<i>Cropping</i>	a. Melakukan <i>cropping</i> sesuai dengan koordinat hasil deteksi objek	✓	
6	<i>Resize Citra</i>	a. Menentukan ukuran dimensi piksel citra <i>output</i> b. Melakukan <i>resize</i> sesuai dengan ukuran dimensi piksel yang telah ditentukan	✓	
7	Ekstraksi Fitur Bentuk	a. Menghitung <i>seven moment invariant</i> dengan rumus: $\emptyset_1 = \eta_{20} + \eta_{02}$ $\emptyset_2 = (\eta_{20} + \eta_{02})^2 + 4\eta_{11}^2$ $\emptyset_3 = (\eta_{30} - 3\eta_{12})^2 + (3\eta_{21} - 3\eta_{03})^2$ $\emptyset_4 = (\eta_{30} + 3\eta_{12})^2 + (3\eta_{21} + 3\eta_{03})^2$ $\emptyset_5 = (\eta_{30} + 3\eta_{12})(\eta_{30} + \eta_{12})[(\eta_{30} + \eta_{12})^2 - 3(\eta_{12} + \eta_{03})^2] + (3\eta_{21} + \eta_{03})(\eta_{21} + \eta_{03})[3(\eta_{30} + \eta_{12})^2 - (\eta_{21} + \eta_{03})^2]$ $\emptyset_6 = (\eta_{20} - \eta_{02})[(\eta_{30} + \eta_{12})^2 - (\eta_{21} + \eta_{03})^2] + 4\eta_{11}(\eta_{30} + \eta_{12})(\eta_{21} + \eta_{03})$ $\emptyset_7 = (3\eta_{21} - \eta_{30})(\eta_{30} + \eta_{12})[(\eta_{30} + \eta_{12})^2 - 3(\eta_{12} + \eta_{03})^2] + (3\eta_{21} - \eta_{03})(\eta_{21} + \eta_{03})[3(\eta_{30} + \eta_{12})^2 - (\eta_{21} + \eta_{03})^2]$ b. Melakukan perhitungan <i>Histogram of Oriented Gradients</i> (HOG) dengan langkah: <ul style="list-style-type: none"> - Melakukan normalisasi data pada citra I dengan rumus: 	✓	

No	Nama Algoritma	Algoritma	Kesesuaian	
			Ya	Tidak
		$I_{jk} = \sqrt{\frac{I_{jk}}{\max(I)}}$ <ul style="list-style-type: none"> - Membentuk kembali nilai citra dengan derajat keabuan 0-255 dengan rumus: $I = I \times 255$ - Mencari nilai <i>gradient</i> citra yaitu <i>gradient x</i> atau gx dan <i>gradient y</i> atau gy dengan rumus: $gradient\ x = I * gx$ $gradient\ y = I * gy$ Dimana: $gx = \begin{bmatrix} -1 & 0 & 1 \\ -2 & 0 & 2 \\ -1 & 0 & 1 \end{bmatrix}$ $gy = \begin{bmatrix} -1 & -2 & -1 \\ 0 & 0 & 0 \\ 1 & 2 & 1 \end{bmatrix}$ - Mencari nilai <i>gradient magnitude</i> dan <i>angle</i> dari dua nilai (<i>gradient x</i> & <i>gradient y</i>), dengan rumus: <i>gradient magnitude</i> $= abs((gradient\ x * 0.5) + (gradient\ y * 0.5))$ $angle(I) = atan2(y(I), x(I))$ - Mencari nilai orientasi tiap bin pada tiap <i>cell</i> 		
8	Ekstraksi Fitur Tekstur	<ol style="list-style-type: none"> a. Memecah nilai piksel dari citra <i>grayscale</i> menjadi beberapa region matriks berukuran 3x3 b. Melakukan <i>thresholding</i> menggunakan nilai tengah region, kemudian nilai piksel tetangga yang < nilai <i>threshold</i> diganti dengan nilai 0 dan nilai piksel yang \geq nilai <i>threshold</i> akan diganti dengan nilai 1, Sehingga matriks akan berubah menjadi bentuk matriks biner. 	✓	

No	Nama Algoritma	Algoritma	Kesesuaian	
			Ya	Tidak
		<ul style="list-style-type: none"> c. Menghitung nilai desimal matriks dengan cara menjumlahkan seluruh bobot pada matriks d. Nilai desimal akan tersebut akan digunakan untuk menggantikan nilai <i>threshold</i> dan dilakukan penyatuan kembali matriks untuk mendapatkan tekstur dari citra. e. Melakukan zooming square terhadap citra hasil LBP dan menghitung nilai <i>histogram</i> masing-masing bagian citra f. Melakukan normalisasi terhadap nilai histogram citra g. Membentuk vektor satu baris yang berisi nilai <i>histogram</i> yang telah ternormalisasi 		
9	Klasifikasi dengan KNN	<ul style="list-style-type: none"> a. Inisialisasi vektor input yang akan digunakan b. Tentukan nilai parameter k yang akan digunakan c. Menghitung kuadrat jarak <i>Euclid</i> (<i>query instance</i>) masing-masing objek terhadap data <i>training</i> yang diberikan. d. Mengurutkan objek-objek tersebut ke dalam kelompok yang mempunyai jarak <i>Euclid</i> terkecil. e. Mengumpulkan kategori Y (Klasifikasi <i>Nearest Neighbor</i> berdasarkan nilai k) f. Dengan menggunakan kategori <i>Nearest Neighbor</i> yang paling mayoritas maka dapat diprediksikan kategori objek. 	✓	
10	Klasifikasi dengan CNN	<ul style="list-style-type: none"> a. Inisialisasi citra input dan label yang akan digunakan. b. Membentuk model c. Menentukan jumlah epoch d. Melakukan <i>convolusi</i> ekstraksi fitur pada citra input 	✓	

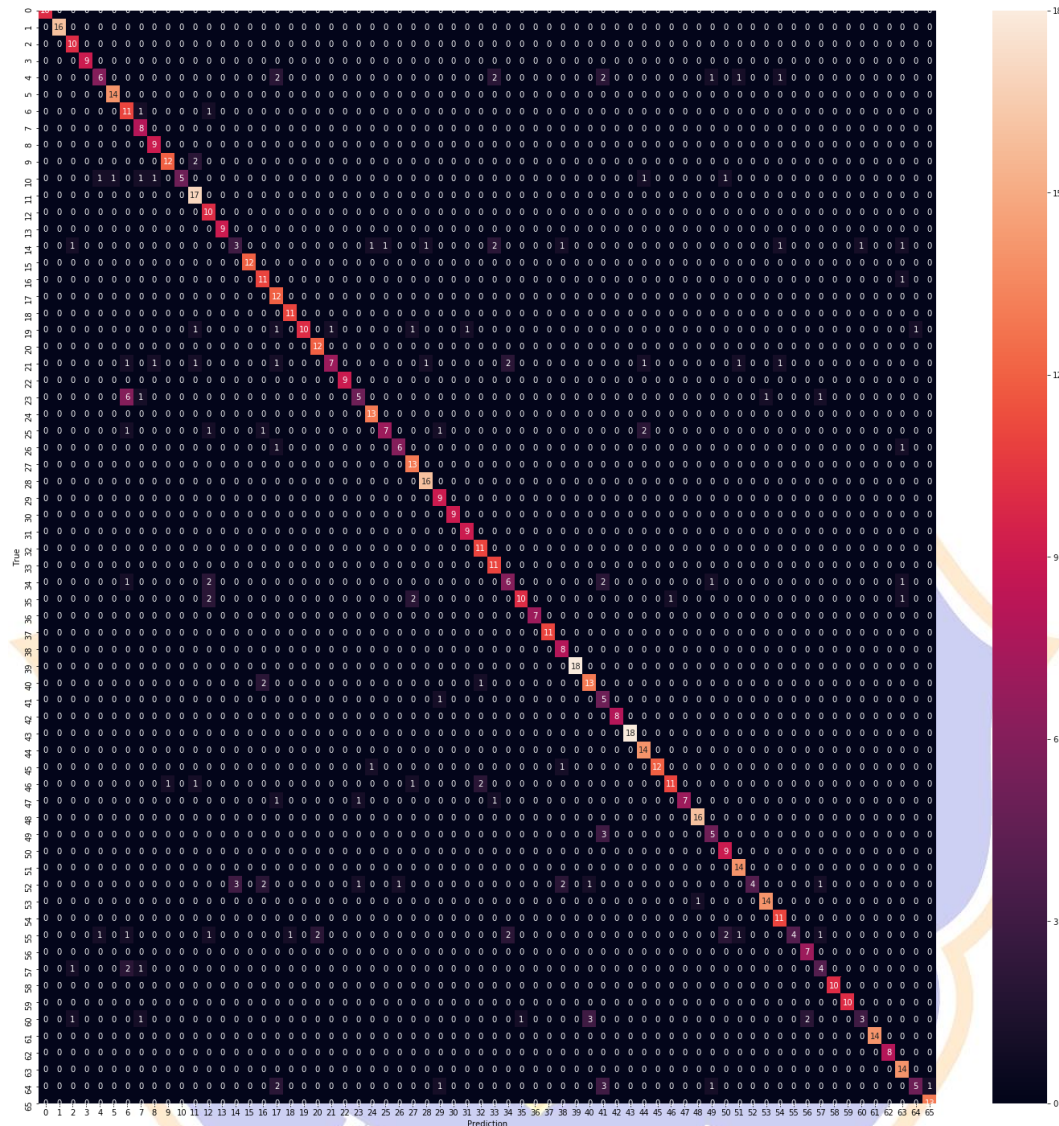
Lampiran 5 Pengujian *BlackBox*

No	Komponen yang diuji	Uraian/Skenario	Keluaran yang diharapkan	Hasil Pengujian	
				Sesuai	Tidak Sesuai
1	Halaman Utama / <i>Home</i>	Menampilkan halaman utama/ halaman <i>home</i>	Sistem dapat menampilkan Halaman <i>Home</i>	✓	
2	Halaman Identifikasi	Memilih Menu “Identifikasi”	Sistem dapat menampilkan halaman identifikasi	✓	
		Memilih menu <i>browse</i>	Sistem menampilkan jendela <i>browse</i> untuk memilih gambar yang akan di <i>upload</i>	✓	
		Memilih gambar yang akan di <i>upload</i>	Sistem menampilkan <i>preview</i> gambar yang sudah dipilih pada halaman identifikasi	✓	
		Memilih aksi “Identifikasi”	Sistem melakukan proses identifikasi gambar	✓	
Sistem menampilkan hasil identifikasi berupa nama tokoh wayang dan deskripsi tokoh	✓				
3	Halaman <i>Gallery</i>	Memilih Menu “ <i>Gallery</i> ”	Sistem menampilkan gambar wayang berdasarkan kelas atau nama wayang	✓	
4	Halaman Data Wayang	Memilih Menu “Data Wayang”	Sistem menampilkan halaman Data Wayang	✓	
		Memilih Menu “Tambah Data”	Sistem menampilkan <i>popup</i> untuk menginputkan data wayang	✓	
		Memilih Menu “Edit Data”	Sistem menampilkan <i>popup</i> yang telah berisi data wayang berdasarkan <i>id</i> yang dipilih untuk dapat di edit atau dibatalkan	✓	

No	Komponen yang diuji	Uraian/Skenario	Keluaran yang diharapkan	Hasil Pengujian	
				Sesuai	Tidak Sesuai
		Memilih Menu "Hapus Data"	Sistem menampilkan <i>popup</i> untuk mengkonfirmasi perintah hapus data wayang	✓	
5	Halaman Data <i>Gallery</i>	Memilih Menu "Data <i>Gallery</i> "	Sistem menampilkan halaman Data <i>Gallery</i>	✓	
		Memilih Menu "Tambah Data"	Sistem menampilkan <i>popup</i> untuk menginputkan data <i>gallery</i>	✓	
		Memilih Menu "Edit Data"	Sistem menampilkan <i>popup</i> yang telah berisi data <i>gallery</i> berdasarkan <i>id</i> yang dipilih untuk dapat di edit atau dibatalkan	✓	
		Memilih Menu "Hapus Data"	Sistem menampilkan <i>popup</i> untuk mengkonfirmasi perintah hapus data <i>gallery</i>	✓	

Lampiran 6 Pengujian *Confusion Matrix* KNN

Berikut ini hasil visualisasi *confusion matrix* dengan metode KNN:



Berdasarkan Gambar diatas hasil *confusion* matriks, maka didapat data sebagai berikut:

Label	Nama Kelas	TP	FP	FN	TN
0	Abimanyu	10	0	0	782
1	Acintya	16	0	0	776
2	Anantaboga	10	3	0	779
3	Api	9	0	0	783
4	Arjuna	6	2	9	775
5	Aswatama	14	1	0	777
6	Baladewa	11	12	2	767
7	Basudewa	8	5	0	779

Label	Nama Kelas	TP	FP	FN	TN
8	Bayu	9	2	0	781
9	Biasa	12	1	2	777
10	Bima	5	0	6	781
11	Bisma	17	5	0	770
12	Brahma	10	7	0	775
13	Condong	9	0	0	783
14	Delem	3	3	10	776
15	Drestadyumna	12	0	0	780
16	Drona	11	5	1	775
17	Drupada	12	8	0	772
18	Drupadi	11	1	0	780
19	Durga	10	0	6	776
20	Dursasana	12	2	0	778
21	Duryodana	7	1	10	774
22	Dwala	9	0	0	783
23	Ganesha	5	2	9	776
24	Garuda	13	2	0	777
25	Gatotkaca	7	1	6	778
26	Hanoman	6	1	2	783
27	Hidimba	13	4	0	775
28	Indra	16	2	0	774
29	Jayadrata	9	3	0	780
30	Jogormanik	9	0	0	783
31	KalaDremba	9	1	0	782
32	Kanwa	11	3	0	778
33	Karna	11	5	0	776
34	Krisna	6	4	7	775
35	Kumbakarna	10	1	6	775
36	Kunti	7	0	0	785
37	Laksamana	11	0	0	781
38	LudraMurti	8	4	0	780
39	Meganada	18	0	0	774
40	Merdah	13	4	3	772
41	Nakula	5	10	1	776
42	Nala	8	0	0	784
43	Narada	18	0	0	774
44	Pandu	14	4	0	774
45	Prajurit	12	0	2	778
46	Rahwana	11	1	5	775
47	Rama	7	0	3	782

Label	Nama Kelas	TP	FP	FN	TN
48	Rangda	16	1	0	775
49	Sahadewa	5	3	3	781
50	Sakuni	9	3	0	780
51	Salya	14	3	0	775
52	Sangut	4	0	11	777
53	Saraswati	14	1	1	776
54	Satyaki	11	3	0	778
55	Sita	4	0	12	776
56	Siwa	7	2	0	783
57	Sugriwa	4	3	4	781
58	Suratma	10	0	0	782
59	Suweta	10	0	0	782
60	Tualen	3	1	8	780
61	Wibisana	14	0	0	778
62	Widura	8	0	0	784
63	WisnuMurti	14	5	0	773
64	Yudistira	5	1	8	778
65	Yuyutsu	13	1	0	778

1. Perhitungan *Precision*

$$Precision = \frac{TP}{TP+FP} \times 100\%$$

$$Precision (Abimanyu) = \frac{10}{10+0} \times 100\% = 100\%$$

$$Precision (Acintya) = \frac{16}{16+0} \times 100\% = 100\%$$

$$Precision (AnantaBhoga) = \frac{10}{10+3} \times 100\% = 76,92\%$$

$$Precision (Api) = \frac{9}{9+0} \times 100\% = 100\%$$

$$Precision (Arjuna) = \frac{6}{6+2} \times 100\% = 75\%$$

$$Precision (Aswatama) = \frac{14}{14+1} \times 100\% = 93,33\%$$

$$Precision (Baladewa) = \frac{11}{11+12} \times 100\% = 47,83\%$$

$$Precision (Basudewa) = \frac{8}{8+5} \times 100\% = 61,54\%$$

$$Precision (Bayu) = \frac{9}{9+2} \times 100\% = 81,82\%$$

$$Precision (Biasa) = \frac{12}{12+1} \times 100\% = 92,31\%$$

$$Precision (Bima) = \frac{5}{5+0} \times 100\% = 100\%$$

$$\text{Precision (Bisma)} = \frac{17}{17+5} \times 100\% = 77,27\%$$

$$\text{Precision (Brahma)} = \frac{10}{10+7} \times 100\% = 58,82\%$$

$$\text{Precision (Condong)} = \frac{9}{9+0} \times 100\% = 100\%$$

$$\text{Precision (Delem)} = \frac{3}{3+3} \times 100\% = 50\%$$

$$\text{Precision (Drestadyumna)} = \frac{12}{12+0} \times 100\% = 100\%$$

$$\text{Precision (Drona)} = \frac{11}{11+5} \times 100\% = 68,75\%$$

$$\text{Precision (Drupada)} = \frac{12}{12+8} \times 100\% = 60\%$$

$$\text{Precision (Drupadi)} = \frac{11}{11+1} \times 100\% = 91,67\%$$

$$\text{Precision (Durga)} = \frac{10}{10+0} \times 100\% = 100\%$$

$$\text{Precision (Dursasana)} = \frac{12}{12+2} \times 100\% = 85,71\%$$

$$\text{Precision (Duryodana)} = \frac{7}{7+1} \times 100\% = 87,5\%$$

$$\text{Precision (Dwala)} = \frac{9}{9+0} \times 100\% = 100\%$$

$$\text{Precision (Ganesha)} = \frac{5}{5+2} \times 100\% = 71,43\%$$

$$\text{Precision (Garuda)} = \frac{13}{13+2} \times 100\% = 86,67\%$$

$$\text{Precision (Gatotkaca)} = \frac{7}{7+1} \times 100\% = 87,5\%$$

$$\text{Precision (Hanoman)} = \frac{6}{6+1} \times 100\% = 85,71\%$$

$$\text{Precision (Hidimba)} = \frac{13}{13+4} \times 100\% = 76,47\%$$

$$\text{Precision (Indra)} = \frac{16}{16+2} \times 100\% = 88,89\%$$

$$\text{Precision (Jayadrata)} = \frac{9}{9+3} \times 100\% = 75\%$$

$$\text{Precision (Jogormanik)} = \frac{9}{9+0} \times 100\% = 100\%$$

$$\text{Precision (KalaDremba)} = \frac{9}{9+1} \times 100\% = 90\%$$

$$\text{Precision (Kanwa)} = \frac{11}{11+3} \times 100\% = 78,57\%$$

$$\text{Precision (Karna)} = \frac{11}{11+5} \times 100\% = 68,75\%$$

$$\text{Precision (Krisna)} = \frac{6}{6+4} \times 100\% = 60\%$$

$$\text{Precision (Kumbakarna)} = \frac{10}{10+1} \times 100\% = 90,91\%$$

$$\text{Precision (Kunti)} = \frac{7}{7+0} \times 100\% = 100\%$$

$$\text{Precision (Laksamana)} = \frac{11}{11+0} \times 100\% = 100\%$$

$$\text{Precision (LudraMurti)} = \frac{8}{8+4} \times 100\% = 66,67\%$$

$$\text{Precision (Meganada)} = \frac{18}{18+0} \times 100\% = 100\%$$

$$\text{Precision (Merdah)} = \frac{13}{13+4} \times 100\% = 76,47\%$$

$$\text{Precision (Nakula)} = \frac{5}{5+10} \times 100\% = 33,33\%$$

$$\text{Precision (Nala)} = \frac{8}{8+0} \times 100\% = 100\%$$

$$\text{Precision (Narada)} = \frac{18}{18+0} \times 100\% = 100\%$$

$$\text{Precision (Pandu)} = \frac{14}{14+4} \times 100\% = 77,78\%$$

$$\text{Precision (Prajurit)} = \frac{12}{12+0} \times 100\% = 100\%$$

$$\text{Precision (Rahwana)} = \frac{11}{11+1} \times 100\% = 91,67\%$$

$$\text{Precision (Rama)} = \frac{7}{7+0} \times 100\% = 100\%$$

$$\text{Precision (Rangda)} = \frac{16}{16+1} \times 100\% = 94,12\%$$

$$\text{Precision (Sahadewa)} = \frac{5}{5+3} \times 100\% = 62,5\%$$

$$\text{Precision (Sakuni)} = \frac{9}{9+3} \times 100\% = 75\%$$

$$\text{Precision (Salya)} = \frac{14}{14+3} \times 100\% = 82,35\%$$

$$\text{Precision (Sangut)} = \frac{4}{4+0} \times 100\% = 100\%$$

$$\text{Precision (Saraswati)} = \frac{14}{14+1} \times 100\% = 93,33\%$$

$$\text{Precision (Satyaki)} = \frac{11}{11+3} \times 100\% = 78,57\%$$

$$\text{Precision (Sita)} = \frac{4}{4+0} \times 100\% = 100\%$$

$$\text{Precision (Siwa)} = \frac{7}{7+2} \times 100\% = 77,78\%$$

$$\text{Precision (Sugriwa)} = \frac{4}{4+3} \times 100\% = 57,14\%$$

$$\text{Precision (Suratma)} = \frac{10}{10+0} \times 100\% = 100\%$$

$$\text{Precision (Suweta)} = \frac{10}{10+0} \times 100\% = 100\%$$

$$\text{Precision (Tualen)} = \frac{3}{3+1} \times 100\% = 75\%$$

$$\text{Precision (Wibisana)} = \frac{14}{14+0} \times 100\% = 100\%$$

$$\text{Precision (Widura)} = \frac{8}{8+0} \times 100\% = 100\%$$

$$\text{Precision (WisnuMurti)} = \frac{14}{14+5} \times 100\% = 73,68\%$$

$$\text{Precision (Yudistira)} = \frac{5}{5+1} \times 100\% = 83,33\%$$

$$\text{Precision (Yuyutsu)} = \frac{13}{13+1} \times 100\% = 92,86\%$$

2. Perhitungan Recall (Sensitivity)

$$\text{Sensitivity} = \frac{TP}{TP+FN} \times 100\%$$

$$\text{Sensitivity (Abimanyu)} = \frac{10}{10+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Acintya)} = \frac{16}{16+0} \times 100\% = 100\%$$

$$\text{Sensitivity (AnantaBhoga)} = \frac{10}{10+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Api)} = \frac{9}{9+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Arjuna)} = \frac{6}{6+9} \times 100\% = 40\%$$

$$\text{Sensitivity (Aswatama)} = \frac{14}{14+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Baladewa)} = \frac{11}{11+2} \times 100\% = 84,62\%$$

$$\text{Sensitivity (Basudewa)} = \frac{8}{8+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Bayu)} = \frac{9}{9+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Biasa)} = \frac{12}{12+2} \times 100\% = 85,71\%$$

$$\text{Sensitivity (Bima)} = \frac{5}{5+6} \times 100\% = 45,45\%$$

$$\text{Sensitivity (Bisma)} = \frac{17}{17+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Brahma)} = \frac{10}{10+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Condong)} = \frac{9}{9+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Delem)} = \frac{3}{3+10} \times 100\% = 23,08\%$$

$$\text{Sensitivity (Drestadyumna)} = \frac{12}{12+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Drona)} = \frac{11}{11+1} \times 100\% = 91,67\%$$

$$\text{Sensitivity (Drupada)} = \frac{12}{12+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Drupadi)} = \frac{11}{11+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Durga)} = \frac{10}{10+6} \times 100\% = 62,5\%$$

$$\text{Sensitivity (Dursasana)} = \frac{12}{12+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Duryodana)} = \frac{7}{7+10} \times 100\% = 41,18\%$$

$$\text{Sensitivity (Dwala)} = \frac{9}{9+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Ganesha)} = \frac{5}{5+9} \times 100\% = 35,71\%$$

$$\text{Sensitivity (Garuda)} = \frac{13}{13+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Gatotkaca)} = \frac{7}{7+6} \times 100\% = 53,85\%$$

$$\text{Sensitivity (Hanoman)} = \frac{6}{6+2} \times 100\% = 75\%$$

$$\text{Sensitivity (Hidimba)} = \frac{13}{13+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Indra)} = \frac{16}{16+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Jayadrata)} = \frac{9}{9+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Jogormanik)} = \frac{9}{9+0} \times 100\% = 100\%$$

$$\text{Sensitivity (KalaDremba)} = \frac{9}{9+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Kanwa)} = \frac{11}{11+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Karna)} = \frac{11}{11+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Krisna)} = \frac{6}{6+7} \times 100\% = 46,15\%$$

$$\text{Sensitivity (Kumbakarna)} = \frac{10}{10+6} \times 100\% = 62,5\%$$

$$\text{Sensitivity (Kunti)} = \frac{7}{7+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Laksamana)} = \frac{11}{11+0} \times 100\% = 100\%$$

$$\text{Sensitivity (LudraMurti)} = \frac{8}{8+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Meganada)} = \frac{18}{18+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Merdah)} = \frac{13}{13+3} \times 100\% = 81,25\%$$

$$\text{Sensitivity (Nakula)} = \frac{5}{5+1} \times 100\% = 83,33\%$$

$$\text{Sensitivity (Nala)} = \frac{8}{8+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Narada)} = \frac{18}{18+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Pandu)} = \frac{14}{14+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Prajurit)} = \frac{12}{12+2} \times 100\% = 85,71\%$$

$$\text{Sensitivity (Rahwana)} = \frac{11}{11+5} \times 100\% = 68,75\%$$

$$\text{Sensitivity (Rama)} = \frac{7}{7+3} \times 100\% = 70\%$$

$$\text{Sensitivity (Rangda)} = \frac{16}{16+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Sahadewa)} = \frac{5}{5+3} \times 100\% = 62,5\%$$

$$\text{Sensitivity (Sakuni)} = \frac{9}{9+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Salya)} = \frac{14}{14+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Sangut)} = \frac{4}{4+11} \times 100\% = 26,66\%$$

$$\text{Sensitivity (Saraswati)} = \frac{14}{14+1} \times 100\% = 93,33\%$$

$$\text{Sensitivity (Satyaki)} = \frac{11}{11+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Sita)} = \frac{4}{4+12} \times 100\% = 25\%$$

$$\text{Sensitivity (Siwa)} = \frac{7}{7+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Sugriwa)} = \frac{4}{4+4} \times 100\% = 50\%$$

$$\text{Sensitivity (Suratma)} = \frac{10}{10+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Suweta)} = \frac{10}{10+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Tualen)} = \frac{3}{3+8} \times 100\% = 27,27\%$$

$$\text{Sensitivity (Wibisana)} = \frac{14}{14+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Widura)} = \frac{8}{8+0} \times 100\% = 100\%$$

$$\text{Sensitivity (WisnuMurti)} = \frac{14}{14+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Yudistira)} = \frac{5}{5+8} \times 100\% = 38,46\%$$

$$\text{Sensitivity (Yuyutsu)} = \frac{13}{13+0} \times 100\% = 100\%$$

Sensitivity =

$$\frac{100+100+100+100+40+100+84,62+100+100+85,71+45,45+100+100+100+23,08+100+91,67+100+100+62,5+100+41,18+100+35,71+100+53,85+75+100+100+100+100+100+100+46,15+62,5+100+100+100+100+81,25+83,33+100+100+100+85,71+68,75+70+100+62,5+100+100+26,66+93,33+100+25+100+50+100+100+27,27+100+100+100+38,46+100}{66}$$

66

Sensitivity = 84,24%

3. Perhitungan Spesifisitas (Specificity)

$$\text{Specificity} = \frac{TN}{TN+FP} \times 100\%$$

$$\text{Specificity (Abimanyu)} = \frac{782}{782+0} \times 100\% = 100\%$$

$$\text{Specificity (Acintya)} = \frac{776}{776+0} \times 100\% = 100\%$$

$$\text{Specificity (AnantaBhoga)} = \frac{779}{779+3} \times 100\% = 99,62\%$$

$$\text{Specificity (Api)} = \frac{783}{783+0} \times 100\% = 100\%$$

$$\text{Specificity (Arjuna)} = \frac{775}{775+2} \times 100\% = 99,74\%$$

$$\text{Specificity (Aswatama)} = \frac{777}{777+1} \times 100\% = 99,87\%$$

$$\text{Specificity (Baladewa)} = \frac{767}{767+12} \times 100\% = 98,46\%$$

$$\text{Specificity (Basudewa)} = \frac{779}{779+5} \times 100\% = 99,36\%$$

$$\text{Specificity (Bayu)} = \frac{781}{781+2} \times 100\% = 99,74\%$$

$$\text{Specificity (Biasa)} = \frac{777}{777+1} \times 100\% = 99,87\%$$

$$\text{Specificity (Bima)} = \frac{781}{781+0} \times 100\% = 100\%$$

$$\text{Specificity (Bisma)} = \frac{770}{770+5} \times 100\% = 99,35\%$$

$$\text{Specificity (Brahma)} = \frac{775}{775+7} \times 100\% = 99,1\%$$

$$\text{Specificity (Condong)} = \frac{783}{783+0} \times 100\% = 100\%$$

$$\text{Specificity (Delem)} = \frac{776}{776+3} \times 100\% = 99,61\%$$

$$\text{Specificity (Drestadyumna)} = \frac{780}{780+0} \times 100\% = 100\%$$

$$\text{Specificity (Drona)} = \frac{775}{775+5} \times 100\% = 99,36\%$$

$$\text{Specificity (Drupada)} = \frac{772}{772+8} \times 100\% = 98,97\%$$

$$\text{Specificity (Drupadi)} = \frac{780}{780+1} \times 100\% = 99,87\%$$

$$\text{Specificity (Durga)} = \frac{776}{776+0} \times 100\% = 100\%$$

$$\text{Specificity (Dursasana)} = \frac{778}{778+2} \times 100\% = 99,74\%$$

$$\text{Specificity (Duryodana)} = \frac{774}{774+1} \times 100\% = 99,87\%$$

$$\text{Specificity (Dwala)} = \frac{783}{783+0} \times 100\% = 100\%$$

$$\text{Specificity (Ganesha)} = \frac{776}{776+2} \times 100\% = 99,74\%$$

$$\text{Specificity (Garuda)} = \frac{777}{777+2} \times 100\% = 99,74\%$$

$$\text{Specificity (Gatotkaca)} = \frac{778}{778+1} \times 100\% = 99,87\%$$

$$\text{Specificity (Hanoman)} = \frac{783}{783+1} \times 100\% = 99,87\%$$

$$\text{Specificity (Hidimba)} = \frac{775}{775+4} \times 100\% = 99,49\%$$

$$\text{Specificity (Indra)} = \frac{774}{774+2} \times 100\% = 99,74\%$$

$$\text{Specificity (Jayadrata)} = \frac{780}{780+3} \times 100\% = 99,62\%$$

$$\text{Specificity (Jogormanik)} = \frac{783}{783+0} \times 100\% = 100\%$$

$$\text{Specificity (KalaDremba)} = \frac{782}{782+1} \times 100\% = 99,87\%$$

$$\text{Specificity (Kanwa)} = \frac{778}{778+3} \times 100\% = 99,62\%$$

$$\text{Specificity (Karna)} = \frac{776}{776+5} \times 100\% = 99,36\%$$

$$\text{Specificity (Krisna)} = \frac{775}{775+4} \times 100\% = 99,49\%$$

$$\text{Specificity (Kumbakarna)} = \frac{775}{775+1} \times 100\% = 99,87\%$$

$$\text{Specificity (Kunti)} = \frac{785}{785+0} \times 100\% = 100\%$$

$$\text{Specificity (Laksamana)} = \frac{781}{781+0} \times 100\% = 100\%$$

$$\text{Specificity (LudraMurti)} = \frac{780}{780+4} \times 100\% = 99,49\%$$

$$\text{Specificity (Meganada)} = \frac{774}{774+0} \times 100\% = 100\%$$

$$\text{Specificity (Merdah)} = \frac{772}{772+4} \times 100\% = 99,48\%$$

$$\text{Specificity (Nakula)} = \frac{776}{776+10} \times 100\% = 98,73\%$$

$$\text{Specificity (Nala)} = \frac{784}{784+0} \times 100\% = 100\%$$

$$\text{Specificity (Narada)} = \frac{774}{774+0} \times 100\% = 100\%$$

$$\text{Specificity (Pandur)} = \frac{774}{774+4} \times 100\% = 99,49\%$$

$$\text{Specificity (Prajurit)} = \frac{778}{778+0} \times 100\% = 100\%$$

$$\text{Specificity (Rahwana)} = \frac{775}{775+1} \times 100\% = 99,87\%$$

$$\text{Specificity (Rama)} = \frac{782}{782+0} \times 100\% = 100\%$$

$$\text{Specificity (Rangda)} = \frac{775}{775+1} \times 100\% = 99,87\%$$

$$\text{Specificity (Sahadewa)} = \frac{781}{781+3} \times 100\% = 99,61\%$$

$$\text{Specificity (Sakuni)} = \frac{780}{780+3} \times 100\% = 99,62\%$$

$$\text{Specificity (Salya)} = \frac{775}{775+3} \times 100\% = 99,61\%$$

$$\text{Specificity (Sangut)} = \frac{777}{777+0} \times 100\% = 100\%$$

$$\text{Specificity (Saraswati)} = \frac{776}{776+1} \times 100\% = 99,87\%$$

$$\text{Specificity (Satyaki)} = \frac{778}{778+3} \times 100\% = 99,62\%$$

$$\text{Specificity (Sita)} = \frac{776}{776+0} \times 100\% = 100\%$$

$$\text{Specificity (Siwa)} = \frac{783}{783+2} \times 100\% = 99,87\%$$

$$\text{Specificity (Sugriwa)} = \frac{781}{781+3} \times 100\% = 99,62\%$$

$$\text{Specificity (Suratma)} = \frac{782}{782+0} \times 100\% = 100\%$$

$$\text{Specificity (Suweta)} = \frac{782}{782+0} \times 100\% = 100\%$$

$$\text{Specificity (Tualen)} = \frac{780}{780+1} \times 100\% = 99,87\%$$

$$\text{Specificity (Wibisana)} = \frac{778}{778+0} \times 100\% = 100\%$$

$$\text{Specificity (Widura)} = \frac{784}{784+0} \times 100\% = 100\%$$

$$\text{Specificity (WisnuMurti)} = \frac{773}{773+5} \times 100\% = 99,36\%$$

$$\text{Specificity (Yudistira)} = \frac{778}{778+1} \times 100\% = 99,87\%$$

$$\text{Specificity (Yuyutsu)} = \frac{778}{778+1} \times 100\% = 99,87\%$$

Specificity =

$$\frac{100+100+99,62+100+99,74+99,87+98,46+99,36+99,74+99,87+100+99,35+99,1+100+99,61+100+99,36+98,97+99,87+100+99,74+99,87+100+99,74+99,87+100+99,74+99,74+99,87+99,87+99,49+99,74+99,62+100+99,87+99,62+99,36+99,49+99,87+100+100+99,49+100+99,48+98,73+100+100+99,49+100+99,87+100+99,87+99,61+99,62+99,61+100+99,87+99,62+100+99,75+99,62+100+100+99,87+100+100+99,36+99,87+99,87}{66}$$

Specificity = 99,73%

4. Perhitungan Akurasi

$$\text{Akurasi} = \frac{TP+TN}{TP+FP+FN+TN} \times 100\%$$

$$\text{Akurasi (Abimanyu)} = \frac{10+782}{792} \times 100\% = 100\%$$

$$\text{Akurasi (Acintya)} = \frac{16+776}{792} \times 100\% = 100\%$$

$$\text{Akurasi (AnantaBhoga)} = \frac{10+779}{792} \times 100\% = 99,62\%$$

$$\text{Akurasi (Api)} = \frac{9+783}{792} \times 100\% = 100\%$$

$$\text{Akurasi (Arjuna)} = \frac{6+775}{792} \times 100\% = 98,61\%$$

$$\text{Akurasi (Aswatama)} = \frac{14+777}{792} \times 100\% = 99,87\%$$

$$\text{Akurasi (Baladewa)} = \frac{11+767}{792} \times 100\% = 98,23\%$$

$$\text{Akurasi (Basudewa)} = \frac{8+779}{792} \times 100\% = 99,37\%$$

$$\text{Akurasi (Bayu)} = \frac{9+781}{792} \times 100\% = 99,75\%$$

$$\text{Akurasi (Biasa)} = \frac{12+777}{792} \times 100\% = 99,62\%$$

$$\text{Akurasi (Bima)} = \frac{5+781}{792} \times 100\% = 99,24\%$$

$$\text{Akurasi (Bisma)} = \frac{17+770}{792} \times 100\% = 99,37\%$$

$$\text{Akurasi (Brahma)} = \frac{10+775}{792} \times 100\% = 99,12\%$$

$$\text{Akurasi (Condong)} = \frac{9+783}{792} \times 100\% = 100\%$$

$$\text{Akurasi (Delem)} = \frac{3+776}{792} \times 100\% = 98,36\%$$

$$Akurasi (Drestadyumna) = \frac{12+780}{792} \times 100\% = 100\%$$

$$Akurasi (Drona) = \frac{11+775}{792} \times 100\% = 99,24\%$$

$$Akurasi(Drupada) = \frac{12+772}{792} \times 100\% = 98,99\%$$

$$Akurasi (Drupadi) = \frac{11+780}{792} \times 100\% = 99,87\%$$

$$Akurasi (Durga) = \frac{10+776}{792} \times 100\% = 99,24\%$$

$$Akurasi (Dursasana) = \frac{12+778}{792} \times 100\% = 99,75\%$$

$$Akurasi (Duryodana) = \frac{7+774}{792} \times 100\% = 98,61\%$$

$$Akurasi (Dwala) = \frac{9+783}{792} \times 100\% = 100\%$$

$$Akurasi (Ganesha) = \frac{5+776}{792} \times 100\% = 98,61\%$$

$$Akurasi (Garuda) = \frac{13+777}{792} \times 100\% = 99,75\%$$

$$Akurasi (Gatotkaca) = \frac{7+778}{792} \times 100\% = 99,12\%$$

$$Akurasi (Hanoman) = \frac{6+783}{792} \times 100\% = 99,62\%$$

$$Akurasi (Hidimba) = \frac{13+775}{792} \times 100\% = 99,49\%$$

$$Akurasi (Indra) = \frac{16+774}{792} \times 100\% = 99,75\%$$

$$Akurasi (Jayadrata) = \frac{9+780}{792} \times 100\% = 99,62\%$$

$$Akurasi (Jogormanik) = \frac{9+783}{792} \times 100\% = 100\%$$

$$Akurasi (KalaDremba) = \frac{9+782}{792} \times 100\% = 99,87\%$$

$$Akurasi (Kanwa) = \frac{11+778}{792} \times 100\% = 99,62\%$$

$$Akurasi (Karna) = \frac{11+776}{792} \times 100\% = 99,37\%$$

$$Akurasi (Krisna) = \frac{6+775}{792} \times 100\% = 98,61\%$$

$$Akurasi (Kumbakarna) = \frac{10+775}{792} \times 100\% = 99,12\%$$

$$Akurasi (Kunti) = \frac{7+785}{792} \times 100\% = 100\%$$

$$Akurasi (Laksamana) = \frac{11+781}{792} \times 100\% = 100\%$$

$$Akurasi (LudraMurti) = \frac{8+780}{792} \times 100\% = 99,49\%$$

$$\text{Akurasi (Meganada)} = \frac{18+774}{792} \times 100\% = 100\%$$

$$\text{Akurasi (Merdah)} = \frac{13+772}{792} \times 100\% = 99,12\%$$

$$\text{Akurasi (Nakula)} = \frac{5+776}{792} \times 100\% = 98,61\%$$

$$\text{Akurasi (Nala)} = \frac{8+784}{792} \times 100\% = 100\%$$

$$\text{Akurasi (Narada)} = \frac{18+774}{792} \times 100\% = 100\%$$

$$\text{Akurasi (Pandur)} = \frac{14+774}{792} \times 100\% = 99,49\%$$

$$\text{Akurasi (Prajurit)} = \frac{12+778}{792} \times 100\% = 99,75\%$$

$$\text{Akurasi (Rahwana)} = \frac{11+775}{792} \times 100\% = 99,24\%$$

$$\text{Akurasi (Rama)} = \frac{7+782}{792} \times 100\% = 99,62\%$$

$$\text{Akurasi (Rangda)} = \frac{16+775}{792} \times 100\% = 99,87\%$$

$$\text{Akurasi (Sahadewa)} = \frac{5+781}{792} \times 100\% = 99,24\%$$

$$\text{Akurasi (Sakuni)} = \frac{9+780}{792} \times 100\% = 99,62\%$$

$$\text{Akurasi (Salya)} = \frac{14+775}{792} \times 100\% = 99,62\%$$

$$\text{Akurasi (Sangut)} = \frac{4+777}{792} \times 100\% = 98,61\%$$

$$\text{Akurasi (Saraswati)} = \frac{14+776}{792} \times 100\% = 99,75\%$$

$$\text{Akurasi (Satyaki)} = \frac{11+778}{792} \times 100\% = 99,62\%$$

$$\text{Akurasi (Sita)} = \frac{4+776}{792} \times 100\% = 98,48\%$$

$$\text{Akurasi (Siwa)} = \frac{7+783}{792} \times 100\% = 99,75\%$$

$$\text{Akurasi (Sugriwa)} = \frac{4+781}{792} \times 100\% = 99,12\%$$

$$\text{Akurasi (Suratma)} = \frac{10+782}{792} \times 100\% = 100\%$$

$$\text{Akurasi (Suweta)} = \frac{10+782}{792} \times 100\% = 100\%$$

$$\text{Akurasi (Tualen)} = \frac{3+780}{792} \times 100\% = 98,86\%$$

$$\text{Akurasi (Wibisana)} = \frac{14+778}{792} \times 100\% = 100\%$$

$$\text{Akurasi (Widura)} = \frac{8+784}{792} \times 100\% = 100\%$$

$$\text{Akurasi (WisnuMurti)} = \frac{14+773}{792} \times 100\% = 99,36\%$$

$$\text{Akurasi (Yudistira)} = \frac{5+778}{792} \times 100\% = 98,86\%$$

$$\text{Akurasi (Yuyutsu)} = \frac{13+778}{792} \times 100\% = 99,87\%$$

Akurasi Total =

$$\frac{10+16+10+9+6+14+11+8+9+12+5+17+10+9+3+12+11+12+11+10+12+7+9+5+13+7+6+13+16+9+9+9+11+11+6+10+7+11+8+18+13+5+8+18+14+12+11+7+16+5+9+14+4+14+11+4+7+4+10+10+3+14+8+14+5+13}{792} \times 100\%$$

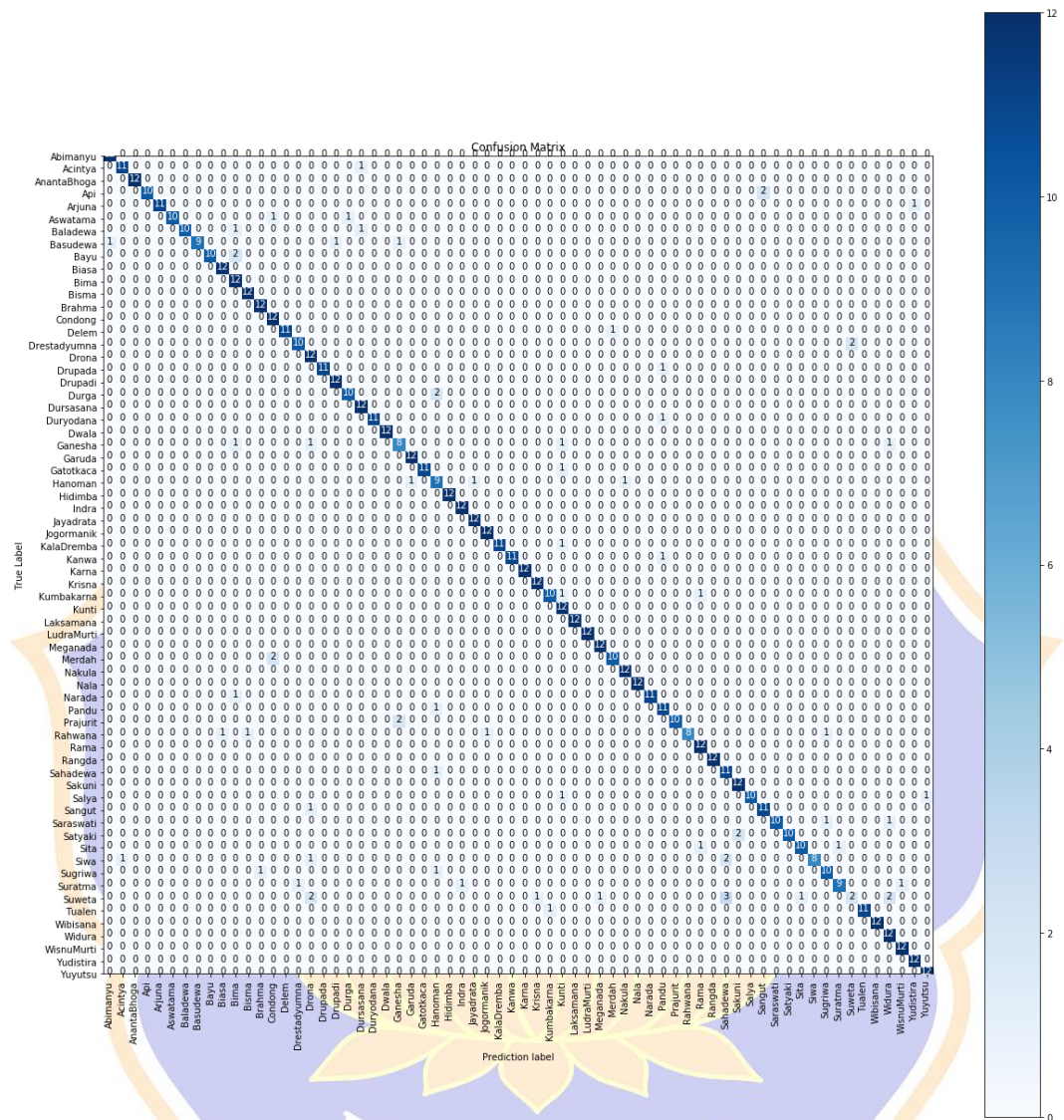
Akurasi = 82,70%

Berdasarkan hasil perhitungan diatas maka didapatkan akurasi dari klasifikasi menggunakan metode *K-Nearest Neighbor (KNN)* sebesar 82,70% dengan *sensitivity* 84,24% dan *specificity* 99,73%.



Lampiran 7 Pengujian *Confusion Matrix* CNN

Berikut ini hasil visualisasi *confusion matrix* dengan metode CNN:



Berdasarkan gambar diatas hasil *confusion* matriks, maka didapat data sebagai berikut:

Label	Nama Kelas	TP	FP	FN	TN
0	Abimanyu	12	1	0	779
1	Acintya	11	1	1	779
2	Anantaboga	12	0	0	780
3	Api	10	0	2	780
4	Arjuna	11	0	1	780
5	Aswatama	10	0	2	780
6	Baladewa	10	0	2	780
7	Basudewa	9	0	3	780

Label	Nama Kelas	TP	FP	FN	TN
8	Bayu	10	0	2	780
9	Biasa	12	1	0	779
10	Bima	12	5	0	775
11	Bisma	12	1	0	779
12	Brahma	12	1	0	779
13	Condong	12	3	0	777
14	Delem	11	0	1	780
15	Drestadyumna	10	1	2	779
16	Drona	12	5	0	775
17	Drupada	11	0	1	780
18	Drupadi	12	1	0	779
19	Durga	10	1	2	779
20	Dursasana	12	1	0	779
21	Duryodana	11	0	1	780
22	Dwala	12	0	0	780
23	Ganesha	8	3	4	777
24	Garuda	12	1	0	779
25	Gatatkaca	11	0	1	780
26	Hanoman	9	5	3	775
27	Hidimba	12	0	0	780
28	Indra	12	1	0	779
29	Jayadrata	12	1	0	779
30	Jogormanik	12	1	0	779
31	KalaDremba	11	0	1	780
32	Kanwa	11	0	1	780
33	Karna	12	0	0	780
34	Krisna	12	1	0	779
35	Kumbakarna	10	1	2	779
36	Kunti	12	5	0	775
37	Laksamana	12	0	0	780
38	LudraMurti	12	0	0	780
39	Meganada	12	1	0	779
40	Merdah	10	1	2	779
41	Nakula	12	1	0	779
42	Nala	12	0	0	780
43	Narada	11	0	1	780
44	Pandu	11	3	1	777
45	Prajurit	10	0	2	780
46	Rahwana	8	0	4	780
47	Rama	12	2	0	778

Label	Nama Kelas	TP	FP	FN	TN
48	Rangda	12	0	0	780
49	Sahadewa	11	5	1	775
50	Sakuni	12	2	0	778
51	Salya	10	0	2	780
52	Sangut	11	0	1	780
53	Saraswati	10	0	2	780
54	Satyaki	10	0	2	780
55	Sita	10	1	2	779
56	Siwa	8	0	4	780
57	Sugriwa	10	2	2	778
58	Suratma	9	1	3	779
59	Suweta	2	2	10	778
60	Tualen	11	0	1	780
61	Wibisana	12	0	0	780
62	Widura	12	4	0	776
63	WisnuMurti	12	1	0	779
64	Yudistira	12	1	0	779
65	Yuyutsu	12	1	0	779

1. Perhitungan *Precision*

$$Precision = \frac{TP}{TP+FP} \times 100\%$$

$$Precision (Abimanyu) = \frac{12}{12+1} \times 100\% = 92,31\%$$

$$Precision (Acintya) = \frac{11}{11+1} \times 100\% = 91,67\%$$

$$Precision (AnantaBhoga) = \frac{12}{12+0} \times 100\% = 100\%$$

$$Precision (Api) = \frac{10}{10+0} \times 100\% = 100\%$$

$$Precision (Arjuna) = \frac{11}{11+0} \times 100\% = 100\%$$

$$Precision (Aswatama) = \frac{10}{10+0} \times 100\% = 100\%$$

$$Precision (Baladewa) = \frac{10}{10+0} \times 100\% = 100\%$$

$$Precision (Basudewa) = \frac{9}{9+0} \times 100\% = 100\%$$

$$Precision (Bayu) = \frac{10}{10+0} \times 100\% = 100\%$$

$$Precision (Biasa) = \frac{12}{12+1} \times 100\% = 92,31\%$$

$$Precision (Bima) = \frac{12}{12+5} \times 100\% = 70,59\%$$

$$\text{Precision (Bisma)} = \frac{12}{12+1} \times 100\% = 92,31\%$$

$$\text{Precision (Brahma)} = \frac{12}{12+1} \times 100\% = 92,31\%$$

$$\text{Precision (Condong)} = \frac{12}{12+3} \times 100\% = 80\%$$

$$\text{Precision (Delem)} = \frac{11}{11+0} \times 100\% = 100\%$$

$$\text{Precision (Drestadyumna)} = \frac{10}{10+1} \times 100\% = 90,91\%$$

$$\text{Precision (Drona)} = \frac{12}{12+5} \times 100\% = 70,59\%$$

$$\text{Precision (Drupada)} = \frac{11}{11+0} \times 100\% = 100\%$$

$$\text{Precision (Drupadi)} = \frac{12}{12+1} \times 100\% = 92,31\%$$

$$\text{Precision (Durga)} = \frac{10}{10+1} \times 100\% = 90,91\%$$

$$\text{Precision (Dursasana)} = \frac{12}{12+1} \times 100\% = 92,31\%$$

$$\text{Precision (Duryodana)} = \frac{11}{11+0} \times 100\% = 100\%$$

$$\text{Precision (Dwala)} = \frac{12}{12+0} \times 100\% = 100\%$$

$$\text{Precision (Ganesha)} = \frac{8}{8+3} \times 100\% = 72,73\%$$

$$\text{Precision (Garuda)} = \frac{12}{12+1} \times 100\% = 92,31\%$$

$$\text{Precision (Gatotkaca)} = \frac{11}{11+0} \times 100\% = 100\%$$

$$\text{Precision (Hanoman)} = \frac{9}{9+5} \times 100\% = 64,29\%$$

$$\text{Precision (Hidimba)} = \frac{12}{12+0} \times 100\% = 100\%$$

$$\text{Precision (Indra)} = \frac{12}{12+1} \times 100\% = 92,31\%$$

$$\text{Precision (Jayadrata)} = \frac{12}{12+1} \times 100\% = 92,31\%$$

$$\text{Precision (Jogormanik)} = \frac{12}{12+1} \times 100\% = 92,31\%$$

$$\text{Precision (KalaDremba)} = \frac{11}{11+0} \times 100\% = 100\%$$

$$\text{Precision (Kanwa)} = \frac{11}{11+0} \times 100\% = 100\%$$

$$\text{Precision (Karna)} = \frac{12}{12+0} \times 100\% = 100\%$$

$$\text{Precision (Krisna)} = \frac{12}{12+1} \times 100\% = 92,31\%$$

$$\text{Precision (Kumbakarna)} = \frac{10}{10+1} \times 100\% = 90,91\%$$

$$\text{Precision (Kunti)} = \frac{12}{12+5} \times 100\% = 70,59\%$$

$$\text{Precision (Laksamana)} = \frac{12}{12+0} \times 100\% = 100\%$$

$$\text{Precision (LudraMurti)} = \frac{12}{12+0} \times 100\% = 100\%$$

$$\text{Precision (Meganada)} = \frac{12}{12+1} \times 100\% = 92,31\%$$

$$\text{Precision (Merdah)} = \frac{10}{10+1} \times 100\% = 90,91\%$$

$$\text{Precision (Nakula)} = \frac{12}{12+1} \times 100\% = 92,31\%$$

$$\text{Precision (Nala)} = \frac{12}{12+0} \times 100\% = 100\%$$

$$\text{Precision (Narada)} = \frac{11}{11+0} \times 100\% = 100\%$$

$$\text{Precision (Pandu)} = \frac{11}{11+3} \times 100\% = 78,57\%$$

$$\text{Precision (Prajurit)} = \frac{10}{10+0} \times 100\% = 100\%$$

$$\text{Precision (Rahwana)} = \frac{8}{8+0} \times 100\% = 100\%$$

$$\text{Precision (Rama)} = \frac{12}{12+2} \times 100\% = 85,71\%$$

$$\text{Precision (Rangda)} = \frac{12}{12+0} \times 100\% = 100\%$$

$$\text{Precision (Sahadewa)} = \frac{11}{11+5} \times 100\% = 68,75\%$$

$$\text{Precision (Sakuni)} = \frac{12}{12+2} \times 100\% = 85,71\%$$

$$\text{Precision (Salya)} = \frac{10}{10+0} \times 100\% = 100\%$$

$$\text{Precision (Sangut)} = \frac{11}{11+0} \times 100\% = 100\%$$

$$\text{Precision (Saraswati)} = \frac{10}{10+0} \times 100\% = 100\%$$

$$\text{Precision (Satyaki)} = \frac{10}{10+0} \times 100\% = 100\%$$

$$\text{Precision (Sita)} = \frac{10}{10+1} \times 100\% = 90,91\%$$

$$\text{Precision (Siwa)} = \frac{8}{8+0} \times 100\% = 100\%$$

$$\text{Precision (Sugriwa)} = \frac{10}{10+2} \times 100\% = 83,33\%$$

$$\text{Precision (Suratma)} = \frac{9}{9+1} \times 100\% = 90\%$$

$$\text{Precision (Suweta)} = \frac{2}{2+2} \times 100\% = 50\%$$

$$\text{Precision (Tualen)} = \frac{11}{11+0} \times 100\% = 100\%$$

$$\text{Precision (Wibisana)} = \frac{12}{12+0} \times 100\% = 100\%$$

$$\text{Precision (Widura)} = \frac{12}{12+4} \times 100\% = 75\%$$

$$\text{Precision (WisnuMurti)} = \frac{12}{12+1} \times 100\% = 92,31\%$$

$$\text{Precision (Yudistira)} = \frac{12}{12+1} \times 100\% = 92,31\%$$

$$\text{Precision (Yuyutsu)} = \frac{12}{12+1} \times 100\% = 92,31\%$$

2. Perhitungan Sensitivity (Recall)

$$\text{Sensitivity} = \frac{TP}{TP+FN} \times 100\%$$

$$\text{Sensitivity (Abimanyu)} = \frac{12}{12+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Acintya)} = \frac{11}{11+1} \times 100\% = 91,67\%$$

$$\text{Sensitivity (AnantaBhoga)} = \frac{12}{12+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Api)} = \frac{10}{10+2} \times 100\% = 83,33\%$$

$$\text{Sensitivity (Arjuna)} = \frac{11}{11+1} \times 100\% = 91,67\%$$

$$\text{Sensitivity (Aswatama)} = \frac{10}{10+2} \times 100\% = 83,33\%$$

$$\text{Sensitivity (Baladewa)} = \frac{10}{10+2} \times 100\% = 83,33\%$$

$$\text{Sensitivity (Basudewa)} = \frac{9}{9+3} \times 100\% = 75\%$$

$$\text{Sensitivity (Bayu)} = \frac{10}{10+2} \times 100\% = 83,33\%$$

$$\text{Sensitivity (Biasa)} = \frac{12}{12+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Bima)} = \frac{12}{12+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Bisma)} = \frac{12}{12+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Brahma)} = \frac{12}{12+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Condong)} = \frac{12}{12+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Delem)} = \frac{11}{11+1} \times 100\% = 91,67\%$$

$$\text{Sensitivity (Drestadyumna)} = \frac{10}{10+2} \times 100\% = 83,33\%$$

$$\text{Sensitivity (Drona)} = \frac{12}{12+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Drupada)} = \frac{11}{11+1} \times 100\% = 91,67\%$$

$$\text{Sensitivity (Drupadi)} = \frac{12}{12+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Durga)} = \frac{10}{10+2} \times 100\% = 83,33\%$$

$$\text{Sensitivity (Dursasana)} = \frac{12}{12+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Duryodana)} = \frac{11}{11+1} \times 100\% = 91,67\%$$

$$\text{Sensitivity (Dwala)} = \frac{12}{12+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Ganesha)} = \frac{8}{8+4} \times 100\% = 66,67\%$$

$$\text{Sensitivity (Garuda)} = \frac{12}{12+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Gatotkaca)} = \frac{11}{11+1} \times 100\% = 91,67\%$$

$$\text{Sensitivity (Hanoman)} = \frac{9}{9+3} \times 100\% = 75\%$$

$$\text{Sensitivity (Hidimba)} = \frac{12}{12+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Indra)} = \frac{12}{12+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Jayadrata)} = \frac{12}{12+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Jogormanik)} = \frac{12}{12+0} \times 100\% = 100\%$$

$$\text{Sensitivity (KalaDremba)} = \frac{11}{11+1} \times 100\% = 91,67\%$$

$$\text{Sensitivity (Kanwa)} = \frac{11}{11+1} \times 100\% = 91,67\%$$

$$\text{Sensitivity (Karna)} = \frac{12}{12+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Krisna)} = \frac{12}{12+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Kumbakarna)} = \frac{10}{10+2} \times 100\% = 83,33\%$$

$$\text{Sensitivity (Kunti)} = \frac{12}{12+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Laksamana)} = \frac{12}{12+0} \times 100\% = 100\%$$

$$\text{Sensitivity (LudraMurti)} = \frac{12}{12+0} \times 100\% = 100\%$$

$$\text{Sensitivity}(\text{Meganada}) = \frac{12}{12+0} \times 100\% = 100\%$$

$$\text{Sensitivity}(\text{Merdah}) = \frac{10}{10+2} \times 100\% = 83,33\%$$

$$\text{Sensitivity}(\text{Nakula}) = \frac{12}{12+0} \times 100\% = 100\%$$

$$\text{Sensitivity}(\text{Nala}) = \frac{12}{12+0} \times 100\% = 100\%$$

$$\text{Sensitivity}(\text{Narada}) = \frac{11}{11+1} \times 100\% = 91,67\%$$

$$\text{Sensitivity}(\text{Pandu}) = \frac{11}{11+1} \times 100\% = 91,67\%$$

$$\text{Sensitivity}(\text{Prajurit}) = \frac{10}{10+2} \times 100\% = 83,33\%$$

$$\text{Sensitivity}(\text{Rahwana}) = \frac{8}{8+4} \times 100\% = 66,67\%$$

$$\text{Sensitivity}(\text{Rama}) = \frac{12}{12+0} \times 100\% = 100\%$$

$$\text{Sensitivity}(\text{Rangda}) = \frac{12}{12+0} \times 100\% = 100\%$$

$$\text{Sensitivity}(\text{Sahadewa}) = \frac{11}{11+1} \times 100\% = 91,67\%$$

$$\text{Sensitivity}(\text{Sakuni}) = \frac{12}{12+0} \times 100\% = 100\%$$

$$\text{Sensitivity}(\text{Salya}) = \frac{10}{10+2} \times 100\% = 83,33\%$$

$$\text{Sensitivity}(\text{Sangut}) = \frac{11}{11+1} \times 100\% = 91,67\%$$

$$\text{Sensitivity}(\text{Saraswati}) = \frac{10}{10+2} \times 100\% = 83,33\%$$

$$\text{Sensitivity}(\text{Satyaki}) = \frac{10}{10+2} \times 100\% = 83,33\%$$

$$\text{Sensitivity}(\text{Sita}) = \frac{10}{10+2} \times 100\% = 83,33\%$$

$$\text{Sensitivity}(\text{Siwa}) = \frac{8}{8+4} \times 100\% = 66,67\%$$

$$\text{Sensitivity}(\text{Sugriwa}) = \frac{10}{10+2} \times 100\% = 83,33\%$$

$$\text{Sensitivity}(\text{Suratma}) = \frac{9}{9+3} \times 100\% = 75\%$$

$$\text{Sensitivity}(\text{Suweta}) = \frac{2}{2+10} \times 100\% = 16,67\%$$

$$\text{Sensitivity}(\text{Tualen}) = \frac{11}{11+1} \times 100\% = 91,67\%$$

$$\text{Sensitivity}(\text{Wibisana}) = \frac{12}{12+0} \times 100\% = 100\%$$

$$\text{Sensitivity}(\text{Widura}) = \frac{12}{12+0} \times 100\% = 100\%$$

$$\text{Sensitivity (WisnuMurti)} = \frac{12}{12+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Yudistira)} = \frac{12}{12+0} \times 100\% = 100\%$$

$$\text{Sensitivity (Yuyutsu)} = \frac{12}{12+0} \times 100\% = 100\%$$

Sensitivity =

$$\frac{100+91,67+100+83,33+91,67+83,33+83,33+75+83,33+100+100+100+100+100+91,67+83,33+100+91,67+100+83,33+100+91,67+100+66,67+100+91,67+75+100+100+100+100+91,67+91,67+100+0+83,33+100+100+100+100+83,33+100+100+91,67+91,67+83,33+66,67+100+100+91,67+100+83,33+91,67+83,33+83,33+83,33+66,67+83,33+75+16,67+91,67+100+100+100+100}{66}$$

Sensitivity = 90,91%

3. Perhitungan Specificity

$$\text{Specificity} = \frac{TN}{TN+FP} \times 100\%$$

$$\text{Specificity (Abimanyu)} = \frac{779}{779+1} \times 100\% = 99,87\%$$

$$\text{Specificity (Acintya)} = \frac{779}{779+1} \times 100\% = 99,87\%$$

$$\text{Specificity (AnantaBhoga)} = \frac{780}{780+0} \times 100\% = 100\%$$

$$\text{Specificity (Api)} = \frac{780}{780+0} \times 100\% = 100\%$$

$$\text{Specificity (Arjuna)} = \frac{780}{780+0} \times 100\% = 100\%$$

$$\text{Specificity (Aswatama)} = \frac{780}{780+0} \times 100\% = 100\%$$

$$\text{Specificity (Baladewa)} = \frac{780}{780+0} \times 100\% = 100\%$$

$$\text{Specificity (Basudewa)} = \frac{780}{780+0} \times 100\% = 100\%$$

$$\text{Specificity (Bayu)} = \frac{780}{780+0} \times 100\% = 100\%$$

$$\text{Specificity (Biasa)} = \frac{779}{779+1} \times 100\% = 99,87\%$$

$$\text{Specificity (Bima)} = \frac{775}{775+5} \times 100\% = 99,36\%$$

$$\text{Specificity (Bisma)} = \frac{779}{779+1} \times 100\% = 99,87\%$$

$$\text{Specificity (Brahma)} = \frac{779}{779+1} \times 100\% = 99,87\%$$

$$\text{Specificity (Condong)} = \frac{777}{777+3} \times 100\% = 99,62\%$$

$$\text{Specificity (Delem)} = \frac{780}{780+0} \times 100\% = 100\%$$

$$\text{Specificity (Drestadyumna)} = \frac{779}{779+1} \times 100\% = 99,87\%$$

$$\text{Specificity (Drona)} = \frac{775}{775+5} \times 100\% = 99,36\%$$

$$\text{Specificity (Drupada)} = \frac{780}{780+0} \times 100\% = 100\%$$

$$\text{Specificity (Drupadi)} = \frac{779}{779+1} \times 100\% = 99,87\%$$

$$\text{Specificity (Durga)} = \frac{779}{779+1} \times 100\% = 99,87\%$$

$$\text{Specificity (Dursasana)} = \frac{779}{779+1} \times 100\% = 99,87\%$$

$$\text{Specificity (Duryodana)} = \frac{780}{780+0} \times 100\% = 100\%$$

$$\text{Specificity (Dwala)} = \frac{780}{780+0} \times 100\% = 100\%$$

$$\text{Specificity (Ganesha)} = \frac{777}{777+3} \times 100\% = 99,62\%$$

$$\text{Specificity (Garuda)} = \frac{779}{779+1} \times 100\% = 99,87\%$$

$$\text{Specificity (Gatotkaca)} = \frac{780}{780+0} \times 100\% = 100\%$$

$$\text{Specificity (Hanoman)} = \frac{775}{775+5} \times 100\% = 99,36\%$$

$$\text{Specificity (Hidimba)} = \frac{780}{780+0} \times 100\% = 100\%$$

$$\text{Specificity (Indra)} = \frac{779}{779+1} \times 100\% = 99,87\%$$

$$\text{Specificity (Jayadrata)} = \frac{779}{779+1} \times 100\% = 99,87\%$$

$$\text{Specificity (Jogormanik)} = \frac{779}{779+1} \times 100\% = 99,87\%$$

$$\text{Specificity (KalaDremba)} = \frac{780}{780+0} \times 100\% = 100\%$$

$$\text{Specificity (Kanwa)} = \frac{780}{780+0} \times 100\% = 100\%$$

$$\text{Specificity (Karna)} = \frac{780}{780+0} \times 100\% = 100\%$$

$$\text{Specificity (Krisna)} = \frac{779}{779+1} \times 100\% = 99,87\%$$

$$\text{Specificity (Kumbakarna)} = \frac{779}{779+1} \times 100\% = 99,87\%$$

$$\text{Specificity (Kunti)} = \frac{775}{775+5} \times 100\% = 99,36\%$$

$$\text{Specificity (Laksamana)} = \frac{780}{780+0} \times 100\% = 100\%$$

$$\text{Specificity (LudraMurti)} = \frac{780}{780+0} \times 100\% = 100\%$$

$$\text{Specificity (Meganada)} = \frac{779}{779+1} \times 100\% = 99,87\%$$

$$\text{Specificity (Merdah)} = \frac{779}{779+1} \times 100\% = 99,87\%$$

$$\text{Specificity (Nakula)} = \frac{779}{779+1} \times 100\% = 99,87\%$$

$$\text{Specificity (Nala)} = \frac{780}{780+0} \times 100\% = 100\%$$

$$\text{Specificity (Narada)} = \frac{780}{780+0} \times 100\% = 100\%$$

$$\text{Specificity (Pandu)} = \frac{777}{777+3} \times 100\% = 99,62\%$$

$$\text{Specificity (Prajurit)} = \frac{780}{780+0} \times 100\% = 100\%$$

$$\text{Specificity (Rahwana)} = \frac{780}{780+0} \times 100\% = 100\%$$

$$\text{Specificity (Rama)} = \frac{778}{778+2} \times 100\% = 99,74\%$$

$$\text{Specificity (Rangda)} = \frac{780}{780+0} \times 100\% = 100\%$$

$$\text{Specificity (Sahadewa)} = \frac{775}{775+5} \times 100\% = 99,36\%$$

$$\text{Specificity (Sakuni)} = \frac{778}{778+2} \times 100\% = 99,74\%$$

$$\text{Specificity (Salya)} = \frac{780}{780+0} \times 100\% = 100\%$$

$$\text{Specificity (Sangut)} = \frac{780}{780+0} \times 100\% = 100\%$$

$$\text{Specificity (Saraswati)} = \frac{780}{780+0} \times 100\% = 100\%$$

$$\text{Specificity (Satyaki)} = \frac{780}{780+0} \times 100\% = 100\%$$

$$\text{Specificity (Sita)} = \frac{779}{779+1} \times 100\% = 99,87\%$$

$$\text{Specificity (Siwa)} = \frac{780}{780+0} \times 100\% = 100\%$$

$$\text{Specificity (Sugriwa)} = \frac{778}{778+2} \times 100\% = 99,74\%$$

$$\text{Specificity (Suratma)} = \frac{779}{779+1} \times 100\% = 99,87\%$$

$$\text{Specificity (Suweta)} = \frac{778}{778+2} \times 100\% = 99,74\%$$

$$\text{Specificity (Tualen)} = \frac{780}{780+0} \times 100\% = 100\%$$

$$\text{Specificity (Wibisana)} = \frac{780}{780+0} \times 100\% = 100\%$$

$$\text{Specificity (Widura)} = \frac{776}{776+4} \times 100\% = 99,49\%$$

$$\text{Specificity (WisnuMurti)} = \frac{779}{779+1} \times 100\% = 99,87\%$$

$$\text{Specificity (Yudistira)} = \frac{779}{779+1} \times 100\% = 99,87\%$$

$$\text{Specificity (Yuyutsu)} = \frac{779}{779+1} \times 100\% = 99,87\%$$

Specificity =

$$\frac{99,87+99,87+100+100+100+100+100+100+100+100+99,87+99,36+99,87+99,87+99,62+100+99,87+99,36+100+99,87+99,87+99,87+100+100+99,62+99,87+100+99,36+100+99,87+99,87+100+100+100+99,87+99,87+99,36+100+100+99,87+99,87+99,87+100+100+99,62+100+100+99,74+100+99,36+99,74+100+100+100+99,87+100+99,74+99,87+99,74+100+100+99,49+99,87+99,87+99,87}{792} \times 100\%$$

66

Specificity = 99,87%

4. Pehitungan Akurasi

$$\text{Akurasi} = \frac{TP+TN}{TP+FP+FN+TN} \times 100\%$$

$$\text{Akurasi (Abimanyu)} = \frac{12+779}{792} \times 100\% = 99,87\%$$

$$\text{Akurasi (Acintya)} = \frac{11+779}{792} \times 100\% = 99,75\%$$

$$\text{Akurasi (AnantaBhoga)} = \frac{12+780}{792} \times 100\% = 100\%$$

$$\text{Akurasi (Api)} = \frac{10+780}{792} \times 100\% = 99,75\%$$

$$\text{Akurasi (Arjuna)} = \frac{11+780}{792} \times 100\% = 99,87\%$$

$$\text{Akurasi (Aswatama)} = \frac{10+780}{792} \times 100\% = 99,75\%$$

$$\text{Akurasi (Baladewa)} = \frac{10+780}{792} \times 100\% = 99,75\%$$

$$\text{Akurasi (Basudewa)} = \frac{9+780}{792} \times 100\% = 99,62\%$$

$$\text{Akurasi (Bayu)} = \frac{10+780}{792} \times 100\% = 99,75\%$$

$$\text{Akurasi (Biasa)} = \frac{12+779}{792} \times 100\% = 99,87\%$$

$$\text{Akurasi (Bima)} = \frac{12+775}{792} \times 100\% = 99,37\%$$

$$\text{Akurasi (Bisma)} = \frac{12+779}{792} \times 100\% = 99,87\%$$

$$\text{Akurasi (Brahma)} = \frac{12+779}{792} \times 100\% = 99,87\%$$

$$\text{Akurasi (Condong)} = \frac{12+777}{792} \times 100\% = 99,62\%$$

$$\text{Akurasi (Delem)} = \frac{11+780}{792} \times 100\% = 99,87\%$$

$$\text{Akurasi (Drestadyumna)} = \frac{10+779}{792} \times 100\% = 99,62\%$$

$$\text{Akurasi (Drona)} = \frac{12+775}{792} \times 100\% = 99,37\%$$

$$\text{Akurasi (Drupada)} = \frac{11+780}{792} \times 100\% = 99,87\%$$

$$\text{Akurasi (Drupadi)} = \frac{12+779}{792} \times 100\% = 99,87\%$$

$$\text{Akurasi (Durga)} = \frac{10+779}{792} \times 100\% = 99,62\%$$

$$\text{Akurasi (Dursasana)} = \frac{12+779}{792} \times 100\% = 99,87\%$$

$$\text{Akurasi (Duryodana)} = \frac{11+780}{792} \times 100\% = 99,87\%$$

$$\text{Akurasi (Dwala)} = \frac{12+780}{792} \times 100\% = 100\%$$

$$\text{Akurasi (Ganesha)} = \frac{8+777}{792} \times 100\% = 99,12\%$$

$$\text{Akurasi (Garuda)} = \frac{12+779}{792} \times 100\% = 99,87\%$$

$$\text{Akurasi (Gatotkaca)} = \frac{11+780}{792} \times 100\% = 99,87\%$$

$$\text{Akurasi (Hanoman)} = \frac{9+775}{792} \times 100\% = 98,99\%$$

$$\text{Akurasi (Hidimba)} = \frac{12+780}{792} \times 100\% = 100\%$$

$$\text{Akurasi (Indra)} = \frac{12+779}{792} \times 100\% = 99,87\%$$

$$\text{Akurasi (Jayadrata)} = \frac{12+779}{792} \times 100\% = 99,87\%$$

$$\text{Akurasi (Jogormanik)} = \frac{12+779}{792} \times 100\% = 99,87\%$$

$$\text{Akurasi (KalaDremba)} = \frac{11+780}{792} \times 100\% = 99,87\%$$

$$\text{Akurasi (Kanwa)} = \frac{11+780}{792} \times 100\% = 99,87\%$$

$$\text{Akurasi (Karna)} = \frac{12+780}{792} \times 100\% = 100\%$$

$$\text{Akurasi (Krisna)} = \frac{12+779}{792} \times 100\% = 99,87\%$$

$$\text{Akurasi (Kumbakarna)} = \frac{10+779}{792} \times 100\% = 99,62\%$$

$$\text{Akurasi (Kunti)} = \frac{12+775}{792} \times 100\% = 99,37\%$$

$$\text{Akurasi (Laksamana)} = \frac{12+780}{792} \times 100\% = 100\%$$

$$\text{Akurasi (LudraMurti)} = \frac{12+780}{792} \times 100\% = 100\%$$

$$\text{Akurasi (Meganada)} = \frac{12+779}{792} \times 100\% = 99,87\%$$

$$\text{Akurasi (Merdah)} = \frac{10+779}{792} \times 100\% = 99,62\%$$

$$\text{Akurasi (Nakula)} = \frac{12+779}{792} \times 100\% = 99,87\%$$

$$\text{Akurasi (Nala)} = \frac{12+780}{792} \times 100\% = 100\%$$

$$\text{Akurasi (Narada)} = \frac{11+780}{792} \times 100\% = 99,87\%$$

$$\text{Akurasi (Pandu)} = \frac{11+777}{792} \times 100\% = 99,49\%$$

$$\text{Akurasi (Prajurit)} = \frac{10+780}{792} \times 100\% = 99,75\%$$

$$\text{Akurasi (Rahwana)} = \frac{8+780}{792} \times 100\% = 99,49\%$$

$$\text{Akurasi (Rama)} = \frac{12+778}{792} \times 100\% = 99,75\%$$

$$\text{Akurasi (Rangda)} = \frac{12+780}{792} \times 100\% = 100\%$$

$$\text{Akurasi (Sahadewa)} = \frac{11+775}{792} \times 100\% = 99,24\%$$

$$\text{Akurasi (Sakuni)} = \frac{12+778}{792} \times 100\% = 99,75\%$$

$$\text{Akurasi (Salya)} = \frac{10+780}{792} \times 100\% = 99,75\%$$

$$\text{Akurasi (Sangut)} = \frac{11+780}{792} \times 100\% = 99,87\%$$

$$\text{Akurasi (Saraswati)} = \frac{10+780}{792} \times 100\% = 99,75\%$$

$$\text{Akurasi (Satyaki)} = \frac{10+780}{792} \times 100\% = 99,75\%$$

$$\text{Akurasi (Sita)} = \frac{10+779}{792} \times 100\% = 99,62\%$$

$$\text{Akurasi (Siwa)} = \frac{8+780}{792} \times 100\% = 99,49\%$$

$$\text{Akurasi (Sugriwa)} = \frac{10+778}{792} \times 100\% = 99,49\%$$

$$\text{Akurasi (Suratma)} = \frac{9+779}{792} \times 100\% = 99,49\%$$

$$\text{Akurasi (Suweta)} = \frac{2+778}{792} \times 100\% = 98,48\%$$

$$\text{Akurasi (Tualen)} = \frac{11+780}{792} \times 100\% = 99,87\%$$

$$\text{Akurasi (Wibisana)} = \frac{12+780}{792} \times 100\% = 100\%$$

$$\text{Akurasi (Widura)} = \frac{12+776}{792} \times 100\% = 99,49\%$$

$$\text{Akurasi (WisnuMurti)} = \frac{12+779}{792} \times 100\% = 99,87\%$$

$$\text{Akurasi (Yudistira)} = \frac{12+779}{792} \times 100\% = 99,87\%$$

$$\text{Akurasi (Yuyutsu)} = \frac{12+779}{792} \times 100\% = 99,87\%$$

Akurasi Total =

$$\frac{12+11+12+10+11+10+10+9+10+12+12+12+12+12+11+10+12+11+12+10+12+12+10+12+12+11+12+8+12+11+9+12+12+12+12+11+11+12+12+10+12+12+12+12+10+12+12+11+11+10+8+12+12+11+12+10+11+10+10+10+8+10+9+2+11+12+12+12+12+12}{792} \times 100\%$$

Akurasi = 90,91%

Berdasarkan hasil perhitungan diatas maka didapatkan akurasi dari klasifikasi menggunakan metode *Convolutional Neural Network (CNN)* sebesar 90,91% dengan *sensitivity* 90,91% dan *specificity* 99,87%.

