LAMPIRAN

Lampiran 1. Surat Izin Penelitian

KEMENTERIAN RISET, TEKNOLOGI, DAN PENDIDIKAN TINGGI
UNIVERSITAS NEGERI YOGYAKARTA
FAKULTAS MATEMATIKA DAN ILMU PENGETAHUAN ALAM
Jalan Colombo Nomor 1 Yogyakarta 55281
Telepon (0274) 565411 Pesawat 217, (0274) 565411 (TU), fax. (0274) 548203
Laman : fmipa.uny.ac.id, E-mail : humas_fmipa@uny.ac.id

Nomor : 1021 /UN.34.13/PG/2017 — 04 April 2017
Lamp :
Hal : Permohonan izin penelitian

Yth. Kepala Badan Pusat Statistika Provinsi Daerah Istimewa Yogyakarta

JL Lingkar Selatan, Tamantirto, Kasihan, Bantul 55183
di Yogyakarta

Dengan hormat,
Mohon dapat diizinkan bagi mahasiswa kami :

Nama	: Rizky Nurmuhammad Habibi
NIM	: 13305144012
Prodi	: Matematika
Fakultas	: MIPA Universitas Negeri Yogyakarta

Untuk melakukan kegiatan penelitian di Badan Pusat Statistika Provinsi Daerah Istimewa Yogyakarta guna memperoleh data yang diperlukan sehubungan dengan penyusunan Tugas Akhir Skripsi dengan judul 'Aplikasi Model *Fuzzy* Untuk Sistem Informasi Geografis Penentuan Wilayah Rawan Demam Berdarah Dengue Provinsi Daerah Istimewa Yogyakarta'.

Atas perhatian dan kerjasamanya diucapkan terima kasih.

Wakil Dekan I,

Dr. Slamet Suyanto
NIP. 19620702 199101 1 001

Tembusan:
1. Dr. Karyati, S.Si.,M.Si.
2. Ketua Jurusan Pendidikan Matematika
3. Peneliti ybs.
4. Arsip.

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Lamp :
Hal : Permohonan izin penelitian

Yth. Kepala Stasiun Klimatologi Yogyakarta
JL Kabupaten KM 5,5, Duwet, Sendangdadi, Mlati, Sleman, Daerah Istimewa Yogyakarta 55285
di Yogyakarta

Dengan hormat,
Mohon dapat diizinkan bagi mahasiswa kami :

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NIM	: 13305144012
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Fakultas	: MIPA Universitas Negeri Yogyakarta

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Nomor : 1021 /UN.34.13/PG/2017 04 April 2017
Lamp :
Hal : Permohonan izin penelitian

Yth. Kepala Dinas Kesehatan Daerah Istimewa Yogyakarta

JL Tompeyan TR III/201 Yogyakarta 55244
di Yogyakarta

Dengan hormat,
Mohon dapat diizinkan bagi mahasiswa kami :

Nama	: Rizky Nurmuhammad Habibi
NIM	: 13305144012
Prodi	: Matematika
Fakultas	: MIPA Universitas Negeri Yogyakarta

Untuk melakukan kegiatan penelitian di Dinas Kesehatan Daerah Istimewa Yogyakarta guna memperoleh data yang diperlukan sehubungan dengan penyusunan Tugas Akhir Skripsi dengan judul 'Aplikasi Model *Fuzzy* Untuk Sistem Informasi Geografis Penentuan Wilayah Rawan Demam Berdarah Dengue Provinsi Daerah Istimewa Yogyakarta'.

Atas perhatian dan kerjasamanya diucapkan terima kasih.

Wakil Dekan I,

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NIP. 19620702 199101 1 001

Tembusan:
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Lampiran 2. Data *Training* Faktor-Faktor DBD

No	Data Kecamatan	*Input*												*Output*
		ABJ (%)	HI (%)	SK (unit)	FD (kasus)	KP (km^2/jiwa)	KW (mdpl)	CH (mm)	HH (hari)	SU (C)	KU (%)	KA (knot)	SM (%)	Kerawanan
1	Gamping	85.87	13.56	104	76	3621.5	138	1977	112	26.6	84.66	5.2	75.08	Sangat Rawan
2	Godean	86.47	12.38	96	74	2631.5	132	1967	111	26.8	82.45	5.1	75.66	Sangat Rawan
3	Moyudan	95.45	3.22	87	23	1118.5	124	1780	99	26.4	84.25	5.3	77.55	Tidak Rawan
4	Minggir	88.34	10.46	91	27	1069.5	161	1899	108	26.8	83.56	4.7	76.66	Rawan
5	Mlati	83.55	15.46	112	59	3882.5	158	1963	112	26.7	81.78	5.4	76.33	Sangat Rawan
6	Depok	86.34	12.45	125	70	5234.5	140	1971	115	26.9	84.44	5.3	75.91	Sangat Rawan
7	Berbah	86.55	12.33	105	58	2457.5	145	1987	113	26.9	82.67	5.1	77.16	Sangat Rawan
8	Kalasan	87.21	11.78	106	71	2337.5	144	1970	114	26.9	83.66	5.1	77.23	Sangat Rawan
9	Ngemplak	96.66	2.88	107	19	1791.5	150	1845	109	26.1	85.54	5.2	77.34	Tidak Rawan
10	Ngaglik	85.33	13.57	111	60	2972.5	162	1988	115	25.9	84.64	5.3	75.67	Sangat Rawan
11	Sleman	88.56	10.33	102	38	2123.5	168	1968	112	26.2	85.44	5.3	76.33	Rawan
12	Tempel	96.87	2.21	118	10	1562.5	246	1986	115	25.2	86.65	5.3	74.44	Tidak Rawan
13	Turi	93.88	5.39	108	5	795.5	438	2676	125	23.6	89.44	5.3	68.78	Tidak Rawan
14	Pakem	97.67	2.13	113	4	852.5	514	2789	126	23.1	89.54	5.7	66.42	Tidak Rawan
15	Cangkringan	91.67	7.44	101	8	610.5	497	2750	125	23.3	88.85	5.8	67.33	Tidak Rawan
16	Srandakan	82.13	16.44	48	38	1584.5	12	1945	109	28.2	84.56	5.1	77.56	Rawan
17	Kretek	90.56	8.23	59	23	1120.5	56	1808	102	27.2	85.44	4.8	76.45	Tidak Rawan
18	Pundong	91.45	6.56	65	22	1360	20	1822	103	27.1	83.34	4.7	75.77	Tidak Rawan
19	Pajangan	80.22	18.36	66	43	1047.5	38	1932	109	26.6	83.77	5.3	76.56	Rawan
20	Bantul	82.47	15.44	74	41	2815.5	42	1943	107	26.9	84.56	5.3	77.21	Rawan
21	Jetis	83.56	14.76	84	36	2205.5	37	1929	106	26.7	84.22	5.1	76.45	Rawan

22	Imogiri	78.33	20.34	89	65	1061.5	58	1966	113	26.6	83.45	5.4	76.78	Sangat Rawan
23	Dlingo	91.44	7.33	71	10	650	200	2238	119	25.7	86.56	5.6	73.22	Tidak Rawan
24	Banguntapan	79.56	19.36	169	88	4715.5	78	1987	114	27.2	82.23	5.4	76.56	Sangat Rawan
25	Pleret	82.13	16.45	48	58	1992.5	52	1987	114	26.8	83.67	5.3	76.45	Sangat Rawan
26	Piyungan	80.22	18.32	46	63	1627.5	86	1968	112	27.1	82.67	5.4	77.78	Sangat Rawan
27	Sewon	81.33	17.34	104	93	4112.5	69	1967	112	26.8	80.44	5.3	76.55	Sangat Rawan
28	Kasihan	80.22	18.45	96	105	3743	81	1979	113	26.9	80.45	5.4	76.35	Sangat Rawan
29	Sedayu	84.28	14.26	76	36	1347	58	1947	108	26.7	81.46	5.1	75.66	Rawan
30	Wonosari	72.34	26.77	118	112	1083.5	162	2034	115	26.7	84.55	5.3	75.67	Sangat Rawan
31	Nglipar	75.44	23.31	59	47	417.5	217	1988	112	25.8	83.56	5.2	73.22	Rawan
32	Patuk	81.56	17.68	75	11	437.5	258	2145	120	25.4	85.45	4.8	72.45	Tidak Rawan
33	Paliyan	77.78	21.45	56	31	520.5	115	1976	110	26.9	84.44	5.1	77.34	Rawan
34	Panggang	80.79	18.78	48	6	276.5	112	1911	104	27.2	83.34	4.7	77.21	Tidak Rawan
35	Tepus	84.46	14.35	89	7	315.5	123	1921	107	26.9	84.23	4.8	76.88	Tidak Rawan
36	Karangmojo	73.23	25.67	109	61	632.5	164	2021	113	26.5	83.21	5.3	76.23	Sangat Rawan
37	Ponjong	75.21	23.56	124	36	495.5	172	1989	112	26.4	84.56	5.1	75.76	Rawan
38	Rongkop	85.67	13.21	103	5	334.5	112	1934	106	27.1	82.88	5.3	77.56	Tidak Rawan
39	Semin	83.57	15.89	127	14	645.5	245	2178	118	25.2	85.45	5.5	72.12	Tidak Rawan
40	Ngawen	80.67	18.66	72	18	705.5	234	2156	119	25.1	86.21	5.6	71.23	Tidak Rawan
41	Gedangsari	83.57	15.48	70	10	537.5	244	2267	121	24.8	87.33	5.6	71.55	Tidak Rawan
42	Saptosari	76.88	22.39	63	27	405.5	126	1945	108	26.8	84.38	5.2	76.76	Rawan
43	Girisubo	85.78	13.21	85	3	244.5	118	1922	105	27.2	83.45	4.7	77.33	Tidak Rawan
44	Tanjungsari	71.67	27.78	72	68	372.5	137	1998	112	26.9	83.21	5.3	76.87	Sangat Rawan
45	Temon	85.77	13.21	94	12	722.5	27	1922	107	27.4	82.33	5.3	77.56	Tidak Rawan
46	Wates	83.44	15.67	102	18	1471.5	23	1867	104	26.8	82.34	5.2	77.32	Tidak Rawan
47	Panjatan	86.78	12.45	84	8	797.5	19	1887	103	26.9	82.43	5.2	77.78	Tidak Rawan
48	Galur	84.89	14.56	86	2	931.5	12	1795	98	27.3	84.55	5.3	77.25	Tidak Rawan

49	Lendah	87.33	11.78	101	6	1087.5	35	1883	102	27.1	84.34	5.4	77.45	Tidak Rawan
50	Sentolo	85.45	13.66	91	11	903.5	48	1773	97	27.2	83.44	5.4	77.87	Tidak Rawan
51	Pengasih	86.46	12.67	80	9	784.5	105	1779	98	27.1	84.23	5.2	76.87	Tidak Rawan
52	Kokap	84.67	12.32	74	9	431.5	234	1931	107	25.6	86.56	5.5	73.56	Tidak Rawan
53	Girimulyo	83.45	15.54	59	17	409.5	388	1887	101	25.1	87.45	5.6	72.34	Tidak Rawan
54	Nanggulan	84.23	14.77	83	11	730.5	85	1912	106	27.3	82.55	5.2	77.43	Tidak Rawan
55	Samigaluh	86.76	12.34	54	2	372.5	415	1932	108	24.8	87.89	5.6	71.25	Tidak Rawan
56	Kalibawang	87.56	11.57	73	13	521.5	217	1889	104	25.8	86.23	5.4	73.87	Tidak Rawan
57	Tegalrejo	72.21	26.45	60	97	12245	126	1986	112	26.6	84.55	5.2	77.78	Sangat Rawan
58	Jetis	74.33	24.67	65	70	13782	120	1975	112	26.6	84.67	5.1	77.68	Sangat Rawan
59	Gondokusuman	71.45	27.63	95	108	11596	118	1985	112	26.6	84.34	5.2	77.46	Sangat Rawan
60	Wirobrajan	78.46	20.55	73	58	14404	102	1982	112	26.6	85.65	5.3	77.87	Sangat Rawan
61	Mantrijeron	75.24	23.87	68	84	12393	84	1969	112	26.6	84.34	5.2	77.34	Sangat Rawan
62	Mergangsang	71.35	27.66	63	79	12901	79	1985	112	26.6	84.37	5.2	77.78	Sangat Rawan
63	Umbulharjo	68.34	30.46	84	146	10444	88	1984	113	26.6	85.44	5.3	77.25	Sangat Rawan
64	Kotagede	71.56	27.38	77	85	11253	82	1979	111	26.6	85.34	5.2	77.56	Sangat Rawan

Keterangan:

ABJ: Angka Bebas Jentik
HI: *House Index*
SK: Sarana Kesehatan
FD: Frekuensi DBD
KP: Kepadatan Penduduk
KW: Ketinggian Wilayah
CH: Curah Hujan
HH: Hari Hujan
SU: Suhu Udara
KU: Kelembaban Udara
KA: Kecepatan Angin
SM: Sinar Matahari

Data Rata-Rata Tahun 2010-2015

SUMBER		
BPS DIY	BMKG DIY (ECMWF)	Dinas Kesehatan DIY
Curah Hujan	Suhu Udara	Angka Bebas Jentik
Hari Hujan	Kelembaban Udara	Index House
Ketinggian Wilayah	Kecepatan Angin	Sarana Kesehatan
Kepadatan Pemduduk	Sinar Matahari	Frekuensi DBD

Lampiran 3. Data *Testing* Faktor-Faktor DBD

No	Data Kecamatan	*Input*												*Output*
		ABJ (%)	HI (%)	SK (unit)	FD (kasus)	KP (km^2/jiwa)	KW (mdpl)	CH (mm)	HH (hari)	SU (C)	KU (%)	KA (knot)	SM (%)	Kerawanan
1	Danurejan	85.67	13.22	63	38	16981	123	1944	109	26.6	85.56	5.2	77.67	Rawan
2	Gedongtangen	88.34	10.34	62	34	18537	115	1946	108	26.6	84.56	5.3	77.56	Rawan
3	Ngampilan	82.87	16.56	53	47	20279	88	1942	109	26.6	85.33	5.1	77.56	Rawan
4	Kraton	82.78	16.48	46	46	12416	84	1939	109	26.6	84.67	5.3	77.48	Rawan
5	Gondomanan	83.77	15.87	58	29	11910	108	1940	109	26.6	84.33	5.1	77.56	Rawan
6	Pakualaman	83.25	15.32	56	30	14367	112	1946	109	26.6	85.44	5.2	77.37	Rawan
7	Purwosari	86.78	12.57	34	3	280.5	123	1944	107	27.1	83.56	4.7	77.55	Rawan
8	Semanu	74.34	24.78	113	45	496.5	148	1966	111	26.7	83.22	5.2	76.45	Rawan
9	Playen	74.78	24.67	105	48	538.5	159	1978	112	26.6	85.44	5.3	76.34	Rawan
10	Sanden	81.67	17.56	68	41	1296.5	55	1933	108	26.9	82.34	5.2	77.34	Rawan
11	Bambang Lipuro	80.22	18.38	51	43	1677.5	18	1937	108	26.7	84.33	5.2	76.78	Rawan
12	Pandak	84.57	13.89	58	31	2006.5	34	1949	108	26.6	84.12	5.3	77.34	Rawan
13	Seyegan	88.61	10.22	101	32	1762.5	154	1897	107	26.6	83.33	5.1	76.58	Rawan
14	Prambanan	86.28	11.56	98	35	1173.5	154	1831	105	27	81.23	4.9	76.44	Rawan

Keterangan:

ABJ: Angka Bebas Jentik
HI: *House Index*
SK: Sarana Kesehatan
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Data Rata-Rata Tahun 2010-2015

SUMBER		
BPS DIY	BMKG DIY (ECMWF)	Dinas Kesehatan DIY
Curah Hujan	Suhu Udara	Angka Bebas Jentik
Hari Hujan	Kelembaban Udara	Index House
Ketinggian Wilayah	Kecepatan Angin	Sarana Kesehatan
Kepadatan Pemduduk	Sinar Matahari	Frekuensi DBD

Lampiran 4. Pembentukan 59 Aturan *Fuzzy*

[R1] IF (angka bebas jentik is sedang) AND (*house index* is sedang) AND (sarana kesehatan is banyak) AND (frekuensi demam berdarah *dengue* is banyak) AND (kepadatan penduduk is padat) AND (ketinggian wilayah is sedang) AND (curah hujan is tinggi) AND (jumlah hari hujan is sedang) AND (suhu udara is sedang) AND (kelembaban udara is sedang) AND (kecepatan angin is sedang) AND (sinar matahari is banyak) THEN (tingkat kerawanan is sangat rawan).

[R2] IF (angka bebas jentik is sedang) AND (*house index* is sedang) AND (sarana kesehatan is sedang) AND (frekuensi demam berdarah *dengue* is banyak) AND (kepadatan penduduk is padat) AND (ketinggian wilayah is sedang) AND (curah hujan is tinggi) AND (jumlah hari hujan is sedang) AND (suhu udara is tinggi) AND (kelembaban udara is rendah) AND (kecepatan angin is sedang) AND (sinar matahari is banyak) THEN (tingkat kerawanan is sangat rawan).

[R3] IF (angka bebas jentik is tinggi) AND (*house index* is rendah) AND (sarana kesehatan is sedang) AND (frekuensi demam berdarah *dengue* is sedikit) AND (kepadatan penduduk is tidak padat) AND (ketinggian wilayah is sedang) AND (curah hujan is remdah) AND (jumlah hari hujan is sedikit) AND (suhu udara is sedang) AND (kelembaban udara is sedang) AND (kecepatan angin is sedang) AND (sinar matahari is banyak) THEN (tingkat kerawanan is tidak rawan).

[R4] IF (angka bebas jentik is tinggi) AND (*house index* is rendah) AND (sarana kesehatan is sedang) AND (frekuensi demam berdarah *dengue* is sedang) AND (kepadatan penduduk is tidak padat) AND (ketinggian wilayah is sedang) AND (curah hujan is sedang) AND (jumlah hari hujan is sedang) AND (suhu udara is sedang) AND (kelembaban udara is rendah) AND (kecepatan angin is sedang) AND (sinar matahari is banyak) THEN (tingkat kerawanan is rawan).

[R5] IF (angka bebas jentik is sedang) AND (*house index* is sedang) AND (sarana kesehatan is banyak) AND (frekuensi demam berdarah *dengue* is banyak) AND (kepadatan penduduk is padat) AND (ketinggian wilayah is sedang) AND (curah hujan is tinggi) AND (jumlah hari hujan is sedang) AND (suhu udara is sedang) AND (kelembaban udara is rendah) AND (kecepatan angin is tinggi) AND (sinar matahari is banyak) THEN (tingkat kerawanan is sangat rawan).

[R6] IF (angka bebas jentik is sedang) AND (*house index* is sedang) AND (sarana kesehatan is banyak) AND (frekuensi demam berdarah *dengue* is banyak) AND (kepadatan penduduk is padat) AND (ketinggian wilayah is sedang) AND (curah hujan is tinggi) AND (jumlah hari hujan is sedang) AND (suhu udara is tinggi) AND (kelembaban udara is sedang) AND (kecepatan angin is sedang) AND (sinar matahari is banyak) THEN (tingkat kerawanan is sangat rawan).

[R7] IF (angka bebas jentik is sedang) AND (*house index* is sedang) AND (sarana kesehatan is banyak) AND (frekuensi demam berdarah *dengue* is banyak) AND (kepadatan penduduk is padat) AND (ketinggian wilayah is sedang) AND (curah hujan is tinggi) AND (jumlah hari hujan is sedang) AND (suhu udara is tinggi) AND (kelembaban udara is rendah) AND (kecepatan angin is sedang) AND (sinar matahari is banyak) THEN (tingkat kerawanan is sangat rawan).

[R8] IF (angka bebas jentik is tinggi) AND (*house index* is sedang) AND (sarana kesehatan is banyak) AND (frekuensi demam berdarah *dengue* is banyak) AND (kepadatan penduduk is padat) AND (ketinggian wilayah is sedang) AND (curah hujan is tinggi) AND (jumlah hari hujan is sedang) AND (suhu udara is tinggi) AND (kelembaban udara is rendah) AND (kecepatan angin is sedang) AND (sinar matahari is banyak) THEN (tingkat kerawanan is sangat rawan).

[R9] IF (angka bebas jentik is tinggi) AND (*house index* is rendah) AND (sarana kesehatan is banyak) AND (frekuensi demam berdarah *dengue* is sedikit) AND (kepadatan penduduk is padat) AND (ketinggian wilayah is sedang) AND (curah hujan is sedang) AND (jumlah hari hujan is sedang) AND (suhu udara is sedang) AND (kelembaban udara is sedang) AND (kecepatan angin is sedang) AND (sinar matahari is banyak) THEN (tingkat kerawanan is tidak rawan).

[R10] IF (angka bebas jentik is tinggi) AND (*house index* is sedang) AND (sarana kesehatan is sedang) AND (frekuensi demam berdarah *dengue* is sedang) AND (kepadatan penduduk is padat) AND (ketinggian wilayah is sedang) AND (curah hujan is tinggi) AND (jumlah hari hujan is sedang) AND (suhu udara is sedang) AND (kelembaban udara is sedang) AND (kecepatan angin is sedang) AND (sinar matahari is banyak) THEN (tingkat kerawanan is rawan).

[R11] IF (angka bebas jentik is tinggi) AND (*house index* is rendah) AND (sarana kesehatan is banyak) AND frekuensi demam berdarah *dengue* is sedikit) AND (kepadatan penduduk is padat) AND (ketinggian wilayah is tinggi) AND (curah hujan is tinggi) AND (jumlah hari hujan is sedang) AND (suhu udara is sedang) AND (kelembaban udara is tinggi) AND (kecepatan angin is sedang) AND (sinar matahari is banyak) THEN (tingkat kerawanan is tidak rawan).

[R12] IF (angka bebas jentik is tinggi) AND (*house index* is rendah) AND (sarana kesehatan is banyak) AND (frekuensi demam berdarah *dengue* is sedikit) AND (kepadatan penduduk is tidak padat) AND (ketinggian wilayah is tinggi) AND (curah hujan is tinggi) AND (jumlah hari hujan is banyak) AND (suhu udara is rendah) AND (kelembaban udara is tinggi) AND (kecepatan angin is sedang) AND (sinar matahari is sedang) THEN (tingkat kerawanan is tidak rawan).

[R13] IF (angka bebas jentik is tinggi) AND (*house index* is rendah) AND (sarana kesehatan is banyak) AND (frekuensi demam berdarah *dengue* is sedikit) AND (kepadatan penduduk is tidak padat) AND (ketinggian wilayah is tinggi) AND (curah hujan is tinggi) AND (jumlah hari hujan is banyak) AND (suhu udara is rendah) AND (kelembaban udara is tinggi) AND (kecepatan angin is tinggi) AND (sinar matahari is sedikit) THEN (tingkat kerawanan is tidak rawan).

[R14] IF (angka bebas jentik is tinggi) AND (*house index* is rendah) AND (sarana kesehatan is sedang) AND (frekuensi demam berdarah *dengue* is sedikit) AND (kepadatan penduduk is tidak padat) AND (ketinggian wilayah is tinggi) AND (curah hujan is tinggi) AND (jumlah hari hujan is banyak) AND (suhu udara is rendah) AND (kelembaban udara is tinggi) AND (kecepatan angin is tinggi) AND (sinar matahari is sedikit) THEN (tingkat kerawanan is tidak rawan).

[R15] IF (angka bebas jentik is sedang) AND (*house index* is sedang) AND (sarana kesehatan is sedikit) AND (frekuensi demam berdarah *dengue* is sedang) AND (kepadatan penduduk is padat) AND (ketinggian wilayah is rendah) AND (curah hujan is tinggi) AND (jumlah hari hujan is sedang) AND (suhu udara is tinggi) AND (kelembaban udara is sedang) AND (kecepatan angin is sedang) AND (sinar matahari is banyak) THEN (tingkat kerawanan is rawan).

[R16] IF (angka bebas jentik is tinggi) AND (*house index* is rendah) AND (sarana kesehatan is sedikit) AND (frekuensi demam berdarah *dengue* is sedikit) AND (kepadatan penduduk is padat) AND (ketinggian wilayah is rendah) AND (curah hujan is rendah) AND (jumlah hari hujan is sedikit) AND (suhu udara is tinggi) AND (kelembaban udara is sedang) AND (kecepatan angin is sedang) AND (sinar matahari is banyak) THEN (tingkat kerawanan is tidak rawan).

[R17] IF (angka bebas jentik is tinggi) AND (*house index* is rendah) AND (sarana kesehatan is sedikit) AND (frekuensi demam berdarah *dengue* is sedikit) AND (kepadatan penduduk is padat) AND (ketinggian wilayah is rendah) AND (curah hujan is sedang) AND (jumlah hari hujan is sedikit) AND (suhu udara is tinggi) AND (kelembaban udara is rendah) AND (kecepatan angin is sedang) AND (sinar matahari is banyak) THEN (tingkat kerawanan is tidak rawan).

[R18] IF (angka bebas jentik is sedang) AND (*house index* is sedang) AND (sarana kesehatan is sedikit) AND (frekuensi demam berdarah *dengue* is sedang) AND (kepadatan penduduk is padat) AND (ketinggian wilayah is rendah) AND (curah hujan is sedang) AND (jumlah hari hujan is sedang) AND (suhu udara is sedang) AND (kelembaban udara is sedang) AND (kecepatan angin is sedang) AND (sinar matahari is banyak) THEN (tingkat kerawanan is rawan).

[R19] IF (angka bebas jentik is sedang) AND (*house index* is sedang) AND (sarana kesehatan is sedang) AND (frekuensi demam berdarah *dengue* is sedang) AND (kepadatan penduduk is padat) AND (ketinggian wilayah is rendah) AND (curah hujan is tinggi) AND (jumlah hari hujan is sedang) AND (suhu udara is tinggi) AND (kelembaban udara is sedang) AND (kecepatan angin is sedang) AND (sinar matahari is banyak) THEN (tingkat kerawanan is rawan).

[R20] IF (angka bebas jentik is sedang) AND (*house index* is sedang) AND (sarana kesehatan is sedang) AND (frekuensi demam berdarah *dengue* is sedang) AND (kepadatan penduduk is padat) AND (ketinggian wilayah is rendah) AND (curah hujan is sedang) AND (jumlah hari hujan is sedang) AND (suhu udara is sedang) AND (kelembaban udara is sedang) AND (kecepatan angin is sedang) AND (sinar matahari is banyak) THEN (tingkat kerawanan is rawan).

[R21] IF (angka bebas jentik is sedang) AND (*house index* is tinggi) AND (sarana kesehatan is sedang) AND (frekuensi demam berdarah *dengue* is banyak) AND (kepadatan penduduk is tidak padat) AND (ketinggian wilayah is rendah) AND (curah hujan is tinggi) AND (jumlah hari hujan is sedang) AND (suhu udara is sedang) AND (kelembaban udara is rendah) AND (kecepatan angin is tinggi) AND (sinar matahari is banyak) THEN (tingkat kerawanan is sangat rawan).

[R22] IF (angka bebas jentik is tinggi) AND (*house index* is rendah) AND (sarana kesehatan is sedikit) AND (frekuensi demam berdarah *dengue* is sedikit) AND (kepadatan penduduk is tidak padat) AND (ketinggian wilayah is tinggi) AND (curah hujan is tinggi) AND (jumlah hari hujan is banyak) AND (suhu udara is sedang) AND (kelembaban udara is tinggi) AND (kecepatan angin is tinggi) AND (sinar matahari is sedang) THEN (tingkat kerawanan is tidak rawan).

[R23] IF (angka bebas jentik is sedang) AND (*house index* is tinggi) AND (sarana kesehatan is banyak) AND (frekuensi demam berdarah *dengue* is banyak) AND (kepadatan penduduk is padat) AND (ketinggian wilayah is rendah) AND (curah hujan is tinggi) AND (jumlah hari hujan is sedang) AND (suhu udara is tinggi) AND (kelembaban udara is rendah) AND (kecepatan angin is tinggi) AND (sinar matahari is banyak) THEN (tingkat kerawanan is sangat rawan).

[R24] IF (angka bebas jentik is sedang) AND (*house index* is sedang) AND (sarana kesehatan is sedikit) AND (frekuensi demam berdarah *dengue* is banyak) AND (kepadatan penduduk is padat) AND (ketinggian wilayah is rendah) AND (curah hujan is tinggi) AND (jumlah hari hujan is sedang) AND (suhu udara is sedang) AND (kelembaban udara is sedang) AND (kecepatan angin is sedang) AND (sinar matahari is banyak) THEN (tingkat kerawanan is sangat rawan).

[R25] IF (angka bebas jentik is sedang) AND (*house index* is sedang) AND (sarana kesehatan is sedikit) AND (frekuensi demam berdarah *dengue* is banyak) AND (kepadatan penduduk is padat) AND (ketinggian wilayah is rendah) AND (curah hujan is tinggi) AND (jumlah hari hujan is sedang) AND (suhu udara is tinggi) AND (kelembaban udara is rendah) AND (kecepatan angin is tinggi) AND (sinar matahari is banyak) THEN (tingkat kerawanan is sangat rawan).

[R26] IF (angka bebas jentik is sedang) AND (*house index* is sedang) AND (sarana kesehatan is banyak) AND (frekuensi demam berdarah *dengue* is banyak) AND (kepadatan penduduk is padat) AND (ketinggian wilayah is rendah) AND (curah hujan is tinggi) AND (jumlah hari hujan is sedang) AND (suhu udara is sedang) AND (kelembaban udara is rendah) AND (kecepatan angin is sedang) AND (sinar matahari is banyak) THEN (tingkat kerawanan is sangat rawan).

[R27] IF (angka bebas jentik is sedang) AND (*house index* is sedang) AND (sarana kesehatan is sedang) AND (frekuensi demam berdarah *dengue* is banyak) AND (kepadatan penduduk is padat) AND (ketinggian wilayah is rendah) AND (curah hujan is tinggi) AND (jumlah hari hujan is sedang) AND (suhu udara is tinggi) AND (kelembaban udara is rendah) AND (kecepatan angin is tinggi) AND (sinar matahari is banyak) THEN (tingkat kerawanan is sangat rawan).

[R28] IF (angka bebas jentik is sedang) AND (*house index* is sedang) AND (sarana kesehatan is banyak) AND (frekuensi demam berdarah *dengue* is sedang) AND (kepadatan penduduk is padat) AND (ketinggian wilayah is rendah) AND (curah hujan is tinggi) AND (jumlah hari hujan is sedang) AND (suhu udara is sedang) AND (kelembaban udara is rendah) AND (kecepatan angin is sedang) AND (sinar matahari is banyak) THEN (tingkat kerawanan is rawan).

[R29] IF (angka bebas jentik is rendah) AND (*house index* is tinggi) AND (sarana kesehatan is banyak) AND (frekuensi demam berdarah *dengue* is banyak) AND (kepadatan penduduk is tidak padat) AND (ketinggian wilayah is sedang) AND (curah hujan is tinggi) AND (jumlah hari hujan is sedang) AND (suhu udara is sedang) AND (kelembaban udara is sedang) AND (kecepatan angin is sedang) AND (sinar matahari is banyak) THEN (tingkat kerawanan is sangat rawan).

[R30] IF (angka bebas jentik is rendah) AND (*house index* is tinggi) AND (sarana kesehatan is sedikit) AND (frekuensi demam berdarah *dengue* is sedang) AND (kepadatan penduduk is tidak padat) AND (ketinggian wilayah is tinggi) AND (curah hujan is tinggi) AND (jumlah hari hujan is sedang) AND (suhu udara is sedang) AND (kelembaban udara is rendah) AND (kecepatan angin is sedang) AND (sinar matahari is sedang) THEN (tingkat kerawanan is rawan).

[R31] IF (angka bebas jentik is sedang) AND (*house index* is sedang) AND (sarana kesehatan is sedang) AND (frekuensi demam berdarah *dengue* is sedikit) AND (kepadatan penduduk is tidak padat) AND (ketinggian wilayah is tinggi) AND (curah hujan is tinggi) AND (jumlah hari hujan is banyak) AND (suhu udara is sedang) AND (kelembaban udara is sedang) AND (kecepatan angin is sedang) AND (sinar matahari is sedang) THEN (tingkat kerawanan is tidak rawan).

[R32] IF (angka bebas jentik is sedang) AND (*house index* is tinggi) AND (sarana kesehatan is sedikit) AND (frekuensi demam berdarah *dengue* is sedang) AND (kepadatan penduduk is tidak padat) AND (ketinggian wilayah is sedang) AND (curah hujan is tinggi) AND (jumlah hari hujan is sedang) AND (suhu udara is tinggi) AND (kelembaban udara is sedang) AND (kecepatan angin is sedang) AND (sinar matahari is banyak) THEN (tingkat kerawanan is rawan).

[R33] IF (angka bebas jentik is sedang) AND (*house index* is sedang) AND (sarana kesehatan is sedikit) AND (frekuensi demam berdarah *dengue* is sedikit) AND (kepadatan penduduk is tidak padat) AND (ketinggian wilayah is sedang) AND (curah hujan is sedang) AND (jumlah hari hujan is sedang) AND (suhu udara is tinggi) AND (kelembaban udara is rendah) AND (kecepatan angin is sedang) AND (sinar matahari is banyak) THEN (tingkat kerawanan is tidak rawan).

[R34] IF (angka bebas jentik is sedang) AND (*house index* is sedang) AND (sarana kesehatan is sedang) AND (frekuensi demam berdarah *dengue* is sedikit) AND (kepadatan penduduk is tidak padat) AND (ketinggian wilayah is sedang) AND (curah hujan is sedang) AND (jumlah hari hujan is sedang) AND (suhu udara is tinggi) AND (kelembaban udara is sedang) AND (kecepatan angin is sedang) AND (sinar matahari is banyak) THEN (tingkat kerawanan is tidak rawan).

[R35] IF (angka bebas jentik is rendah) AND (*house index* is tinggi) AND (sarana kesehatan is banyak) AND (frekuensi demam berdarah *dengue* is banyak) AND (kepadatan penduduk is tidak padat) AND (ketinggian wilayah is sedang) AND (curah hujan is tinggi) AND (jumlah hari hujan is sedang) AND (suhu udara is sedang) AND (kelembaban udara is rendah) AND (kecepatan angin is sedang) AND (sinar matahari is banyak) THEN (tingkat kerawanan is sangat rawan).

[R36] IF (angka bebas jentik is rendah) AND (*house index* is tinggi) AND (sarana kesehatan is banyak) AND (frekuensi demam berdarah *dengue* is sedang) AND (kepadatan penduduk is tidak padat) AND (ketinggian wilayah is sedang) AND (curah hujan is tinggi) AND (jumlah hari hujan is sedang) AND (suhu udara is sedang) AND (kelembaban udara is sedang) AND (kecepatan angin is sedang) AND (sinar matahari is banyak) THEN (tingkat kerawanan is rawan).

[R37] IF (angka bebas jentik is sedang) AND (*house index* is sedang) AND (sarana kesehatan is sedang) AND (frekuensi demam berdarah *dengue* is sedikit) AND (kepadatan penduduk is tidak padat) AND (ketinggian wilayah is sedang) AND (curah hujan is tinggi) AND (jumlah hari hujan is sedang) AND (suhu udara is tinggi) AND (kelembaban udara is rendah) AND (kecepatan angin is sedang) AND (sinar matahari is banyak) THEN (tingkat kerawanan is tidak rawan).

[R38] IF (angka bebas jentik is sedang) AND (*house index* is sedang) AND (sarana kesehatan is banyak) AND (frekuensi demam berdarah *dengue* is sedikit) AND (kepadatan penduduk is tidak padat) AND (ketinggian wilayah is tinggi) AND (curah hujan is tinggi) AND (jumlah hari hujan is banyak) AND (suhu udara is sedang) AND (kelembaban udara is sedang) AND (kecepatan angin is tinggi) AND (sinar matahari is sedang) THEN (tingkat kerawanan is tidak rawan).

[R39] IF (angka bebas jentik is sedang) AND (*house index* is sedang) AND (sarana kesehatan is sedang) AND (frekuensi demam berdarah *dengue* is sedikit) AND (kepadatan penduduk is tidak padat) AND (ketinggian wilayah is tinggi) AND (curah hujan is tinggi) AND (jumlah hari hujan is banyak) AND (suhu udara is rendah) AND (kelembaban udara is sedang) AND (kecepatan angin is tinggi) AND (sinar matahari is sedang) THEN (tingkat kerawanan is tidak rawan).

[R40] IF (angka bebas jentik is sedang) AND (*house index* is sedang) AND (sarana kesehatan is rendah) AND (frekuensi demam berdarah *dengue* is sedikit) AND (kepadatan penduduk is tidak padat) AND (ketinggian wilayah is tinggi) AND (curah hujan is tinggi) AND (jumlah hari hujan is banyak) AND (suhu udara is rendah) AND (kelembaban udara is tinggi) AND (kecepatan angin is tinggi) AND (sinar matahari is sedang) THEN (tingkat kerawanan is tidak rawan).

[R41] IF (angka bebas jentik is sedang) AND (*house index* is tinggi) AND (sarana kesehatan is sedikit) AND (frekuensi demam berdarah *dengue* is sedang) AND (kepadatan penduduk is tidak padat) AND (ketinggian wilayah is sedang) AND (curah hujan is tinggi) AND (jumlah hari hujan is sedang) AND (suhu udara is sedang) AND (kelembaban udara is sedang) AND (kecepatan angin is sedang) AND (sinar matahari is banyak) THEN (tingkat kerawanan is rawan).

[R42] IF (angka bebas jentik is sedang) AND (*house index* is sedang) AND (sarana kesehatan is sedang) AND (frekuensi demam berdarah *dengue* is sedikit) AND (kepadatan penduduk is tidak padat) AND (ketinggian wilayah is sedang) AND (curah hujan is sedang) AND (jumlah hari hujan is sedang) AND (suhu udara is tinggi) AND (kelembaban udara is rendah) AND (kecepatan angin is sedang) AND (sinar matahari is banyak) THEN (tingkat kerawanan is tidak rawan).

[R43] IF (angka bebas jentik is rendah) AND (*house index* is tinggi) AND (sarana kesehatan is sedang) AND (frekuensi demam berdarah *dengue* is banyak) AND (kepadatan penduduk is tidak padat) AND (ketinggian wilayah is sedang) AND (curah hujan is tinggi) AND (jumlah hari hujan is sedang) AND (suhu udara is sedang) AND (kelembaban udara is rendah) AND (kecepatan angin is sedang) AND (sinar matahari is banyak) THEN (tingkat kerawanan is sangat rawan).

[R44] IF (angka bebas jentik is sedang) AND (*house index* is sedang) AND (sarana kesehatan is sedang) AND (frekuensi demam berdarah *dengue* is sedikit) AND (kepadatan penduduk is tidak padat) AND (ketinggian wilayah is rendah) AND (curah hujan is sedang) AND (jumlah hari hujan is sedang) AND (suhu udara is tinggi) AND (kelembaban udara is rendah) AND (kecepatan angin is sedang) AND (sinar matahari is banyak) THEN (tingkat kerawanan is tidak rawan).

[R45] IF (angka bebas jentik is sedang) AND (*house index* is sedang) AND (sarana kesehatan is sedang) AND (frekuensi demam berdarah *dengue* is sedikit) AND (kepadatan penduduk is padat) AND (ketinggian wilayah is rendah) AND (curah hujan is sedang) AND (jumlah hari hujan is sedang) AND (suhu udara is sedang) AND (kelembaban udara is rendah) AND (kecepatan angin is sedang) AND (sinar matahari is banyak) THEN (tingkat kerawanan is tidak rawan).

[R46] IF (angka bebas jentik is sedang) AND (*house index* is sedang) AND (sarana kesehatan is sedang) AND (frekuensi demam berdarah *dengue* is sedikit) AND (kepadatan penduduk is tidak padat) AND (ketinggian wilayah is rendah) AND (curah hujan is sedang) AND (jumlah hari hujan is sedikit) AND (suhu udara is tinggi) AND (kelembaban udara is rendah) AND (kecepatan angin is sedang) AND (sinar matahari is banyak) THEN (tingkat kerawanan is tidak rawan).

[R47] IF (angka bebas jentik is sedang) AND (*house index* is sedang) AND (sarana kesehatan is sedang) AND (frekuensi demam berdarah *dengue* is sedikit) AND (kepadatan penduduk is tidak padat) AND (ketinggian wilayah is rendah) AND (curah hujan is rendah) AND (jumlah hari hujan is sedikit) AND (suhu udara is tinggi) AND (kelembaban udara is sedang) AND (kecepatan angin is sedang) AND (sinar matahari is banyak) THEN (tingkat kerawanan is tidak rawan).

[R48] IF (angka bebas jentik is tinggi) AND (*house index* is sedang) AND (sarana kesehatan is sedang) AND (frekuensi demam berdarah *dengue* is sedikit) AND (kepadatan penduduk is tidak padat) AND (ketinggian wilayah is rendah) AND (curah hujan is sedang) AND (jumlah hari hujan is sedikit) AND (suhu udara is tinggi) AND (kelembaban udara is sedang) AND (kecepatan angin is tinggi) AND (sinar matahari is banyak) THEN (tingkat kerawanan is tidak rawan).

[R49] IF (angka bebas jentik is sedang) AND (*house index* is sedang) AND (sarana kesehatan is sedang) AND (frekuensi demam berdarah *dengue* is sedikit) AND (kepadatan penduduk is tidak padat) AND (ketinggian wilayah is rendah) AND (curah hujan is rendah) AND (jumlah hari hujan is sedikit) AND (suhu udara is tinggi) AND (kelembaban udara is rendah) AND (kecepatan angin is tinggi) AND (sinar matahari is banyak) THEN (tingkat kerawanan is tidak rawan).

[R50] IF (angka bebas jentik is sedang) AND (*house index* is sedang) AND (sarana kesehatan is sedang) AND (frekuensi demam berdarah *dengue* is sedikit) AND (kepadatan penduduk is tidak padat) AND (ketinggian wilayah is rendah) AND (curah hujan is rendah) AND (jumlah hari hujan is sedikit) AND (suhu udara is tinggi) AND (kelembaban udara is sedang) AND (kecepatan angin is sedang) AND (sinar matahari is banyak) THEN (tingkat kerawanan is tidak rawan).

[R51] IF (angka bebas jentik is sedang) AND (*house index* is sedang) AND (sarana kesehatan is sedang) AND (frekuensi demam berdarah *dengue* is sedikit) AND (kepadatan penduduk is tidak padat) AND (ketinggian wilayah is tinggi) AND (curah hujan is sedang) AND (jumlah hari hujan is sedang) AND (suhu udara is sedang) AND (kelembaban udara is tinggi) AND (kecepatan angin is tinggi) AND (sinar matahari is banyak) THEN (tingkat kerawanan is tidak rawan).

[R52] IF (angka bebas jentik is sedang) AND (*house index* is sedang) AND (sarana kesehatan is sedikit) AND (frekuensi demam berdarah *dengue* is sedikit) AND (kepadatan penduduk is tidak padat) AND (ketinggian wilayah is tinggi) AND (curah hujan is sedang) AND (jumlah hari hujan is sedikit) AND (suhu udara is rendah) AND (kelembaban udara is tinggi) AND (kecepatan angin is tinggi) AND (sinar matahari is sedang) THEN (tingkat kerawanan is tidak rawan).

[R53] IF (angka bebas jentik is sedang) AND (*house index* is sedang) AND (sarana kesehatan is sedikit) AND (frekuensi demam berdarah *dengue* is sedikit) AND (kepadatan penduduk is tidak padat) AND (ketinggian wilayah is tinggi) AND (curah hujan is sedang) AND (jumlah hari hujan is sedang) AND (suhu udara is rendah) AND (kelembaban udara is tinggi) AND (kecepatan angin is tinggi) AND (sinar matahari is sedang) THEN (tingkat kerawanan is tidak rawan).

[R54] IF (angka bebas jentik is tinggi) AND (*house index* is sedang) AND (sarana kesehatan is sedang) AND (frekuensi demam berdarah *dengue* is sedikit) AND (kepadatan penduduk is tidak padat) AND (ketinggian wilayah is tinggi) AND (curah hujan is sedang) AND (jumlah hari hujan is sedang) AND (suhu udara is sedang) AND (kelembaban udara is sedang) AND (kecepatan angin is tinggi) AND (sinar matahari is banyak) THEN (tingkat kerawanan is tidak rawan).

[R55] IF (angka bebas jentik is rendah) AND (*house index* is tinggi) AND (sarana kesehatan is sedikit) AND (frekuensi demam berdarah *dengue* is banyak) AND (kepadatan penduduk is sangat padat) AND (ketinggian wilayah is sedang) AND (curah hujan is tinggi) AND (jumlah hari hujan is sedang) AND (suhu udara is sedang) AND (kelembaban udara is sedang) AND (kecepatan angin is sedang) AND (sinar matahari is banyak) THEN (tingkat kerawanan is sangat rawan).

[R56] IF (angka bebas jentik is rendah) AND (*house index* is tinggi) AND (sarana kesehatan is sedang) AND (frekuensi demam berdarah *dengue* is banyak) AND (kepadatan penduduk is sangat padat) AND (ketinggian wilayah is sedang) AND (curah hujan is tinggi) AND (jumlah hari hujan is sedang) AND (suhu udara is sedang) AND (kelembaban udara is sedang) AND (kecepatan angin is sedang) AND (sinar matahari is banyak) THEN (tingkat kerawanan is sangat rawan).

[R57] IF (angka bebas jentik is sedang) AND (*house index* is tinggi) AND (sarana kesehatan is sedang) AND (frekuensi demam berdarah *dengue* is banyak) AND (kepadatan penduduk is sangat padat) AND (ketinggian wilayah is rendah) AND (curah hujan is tinggi) AND (jumlah hari hujan is sedang) AND (suhu udara is sedang) AND (kelembaban udara is sedang) AND (kecepatan angin is sedang) AND (sinar matahari is banyak) THEN (tingkat kerawanan is sangat rawan).

[R58] IF (angka bebas jentik is rendah) AND (*house index* is tinggi) AND (sarana kesehatan is sedikit) AND (frekuensi demam berdarah *dengue* is banyak) AND (kepadatan penduduk is sangat padat) AND (ketinggian wilayah is rendah) AND (curah hujan is tinggi) AND (jumlah hari hujan is sedang) AND (suhu udara is sedang) AND (kelembaban udara is sedang) AND (kecepatan angin is sedang) AND (sinar matahari is banyak) THEN (tingkat kerawanan is sangat rawan).

[R59] IF (angka bebas jentik is rendah) AND (*house index* is tinggi) AND (sarana kesehatan is sedang) AND (frekuensi demam berdarah *dengue* is banyak) AND (kepadatan penduduk is sangat padat) AND (ketinggian wilayah is rendah) AND (curah hujan is tinggi) AND (jumlah hari hujan is sedang) AND (suhu udara is sedang) AND (kelembaban udara is sedang) AND (kecepatan angin is sedang) AND (sinar matahari is banyak) THEN (tingkat kerawanan is sangat rawan).

Lampiran 5. Fungsi Implikasi dari Data Kecamatan Gamping

Aturan	Derajat Keanggotaan												HFI
	ABJ	HI	SK	FD	KP	KW	CH	HH	SU	KU	KA	SM	
1	0.426	1	0.16	1	0.939	0.76	0.513	0.8	0.4	0.83	0.6	0.508	0.16
2	0.426	1	0.0666	1	0.939	0.76	0.513	0.8	0.1	0.068	0.6	0.508	0.0666
3	0	0	0.0666	0	0	0.76	0	0	0	0.068	0	0.508	0
4	0	1	0.0666	0	0	0.76	0	0.8	0.4	0.068	0.6	0.508	0
5	0.426	1	0.16	1	0.939	0.76	0.513	0.8	0.4	0.068	0.2	0.508	0.068
6	0.426	1	0.16	1	0.939	0.76	0.513	0.8	0.1	0.83	0.6	0.508	0.1
7	0.426	1	0.16	1	0.939	0.76	0.513	0.8	0.1	0.068	0.6	0.508	0.068
8	0	1	0.16	1	0.939	0.76	0.513	0.8	0.1	0.068	0.6	0.508	0
9	0	0	0.16	0	0.939	0.76	0	0.8	0.4	0.83	0.6	0.508	0
10	0	1	0.0666	0	0.939	0.76	0.513	0.8	0.4	0.83	0.6	0.508	0
11	0	0	0.16	0	0.939	0	0.513	0.8	0.4	0	0.6	0.508	0
12	0	0	0.16	0	0	0	0.513	0.1	0	0	0.6	0	0
13	0	0	0.16	0	0	0	0.513	0.1	0	0	0.2	0	0
14	0	0	0.0666	0	0	0	0.513	0.1	0	0	0.2	0	0
15	0.426	1	0	0	0.939	0	0.513	0.8	0.1	0.83	0.6	0.508	0
16	0	0	0	0	0.939	0	0	0	0.1	0.83	0.6	0.508	0

Aturan	Derajat Keanggotaan												HFI
	ABJ	HI	SK	FD	KP	KW	CH	HH	SU	KU	KA	SM	
17	0	0	0	0	0.939	0	0	0	0.1	0.068	0.6	0.508	0
18	0.426	1	0	0	0.939	0	0	0.8	0.4	0.83	0.6	0.508	0
19	0.426	1	0.0666	0	0.939	0	0.513	0.8	0.1	0.83	0.6	0.508	0
20	0.426	1	0.0666	0	0.939	0	0	0.8	0.4	0.83	0.6	0.508	0
21	0.426	0	0.0666	1	0	0	0.513	0.8	0.1	0.068	0.2	0.508	0
22	0	0	0	0	0	0	0.513	0.1	0.4	0	0.2	0	0
23	0.426	0	0.16	1	0.939	0	0.513	0.8	0.1	0.068	0.2	0.508	0
24	0.426	1	0	1	0.939	0	0.513	0.8	0.4	0.83	0.6	0.508	0
25	0.426	1	0	1	0.939	0	0.513	0.8	0.1	0.068	0.2	0.508	0
26	0.426	1	0.16	1	0.939	0	0.513	0.8	0.4	0.068	0.6	0.508	0
27	0.426	1	0.0666	1	0.939	0	0.513	0.8	0.1	0.068	0.2	0.508	0
28	0.426	1	0.0666	0	0.939	0	0.513	0.8	0.4	0.068	0.6	0.508	0
29	0	0	0.16	1	0	0.76	0.513	0.8	0.4	0.83	0.6	0.508	0
30	0	0	0	0	0	0	0.513	0.8	0.4	0.068	0.6	0	0
31	0.426	1	0.0666	0	0	0	0.513	0.1	0.4	0.83	0.6	0	0
32	0.426	0	0	0	0	0.76	0.513	0.8	0.1	0.83	0.6	0.508	0
33	0.426	1	0	0	0	0.76	0	0.8	0.1	0.068	0.6	0.508	0

Aturan	Derajat Keanggotaan												HFI
	ABJ	HI	SK	FD	KP	KW	CH	HH	SU	KU	KA	SM	
34	0.426	1	0.0666	0	0	0.76	0	0.8	0.1	0.83	0.6	0.508	0
35	0	0	0.16	1	0	0.76	0.513	0.8	0.4	0.068	0.6	0.508	0
36	0	0	0.16	0	0	0.76	0.513	0.8	0.4	0.83	0.6	0.508	0
37	0.426	1	0.0666	0	0	0.76	0.513	0.8	0.1	0.068	0.6	0.508	0
38	0.426	1	0.16	0	0	0.76	0.513	0.1	0.4	0.83	0.2	0	0
39	0.426	1	0.0666	0	0	0.76	0.513	0.1	0	0.83	0.2	0	0
40	0.426	1	0	0	0	0.76	0.513	0.1	0.1	0.83	0.2	0	0
41	0.426	0	0	0	0	0.76	0.513	0.8	0.4	0.83	0.6	0.508	0
42	0.426	1	0.0666	0	0	0.76	0	0.8	0.1	0.068	0.6	0.508	0
43	0	0	0.0666	1	0	0.76	0.513	0.8	0.4	0.068	0.6	0.508	0
44	0.426	1	0.0666	0	0	0	0	0.8	0.1	0.068	0.6	0.508	0
45	0.426	1	0.0666	0	0.939	0	0	0.8	0.4	0.068	0.6	0.508	0
46	0.426	1	0.0666	0	0	0	0	0	0.1	0.068	0.6	0.508	0
47	0.426	1	0.0666	0	0	0	0	0	0.1	0.4	0.6	0.508	0
48	0	1	0.0666	0	0	0	0	0	0.1	0.4	0.2	0.508	0
49	0.426	1	0.0666	0	0	0	0	0	0.1	0.068	0.2	0.508	0
50	0.426	1	0.0666	0	0	0	0	0	0.1	0.83	0.6	0.508	0

Aturan	Derajat Keanggotaan												HFI
	ABJ	HI	SK	FD	KP	KW	CH	HH	SU	KU	KA	SM	
51	0.426	1	0.0666	0	0	0	0	0.8	0.4	0	0.2	0.508	0
52	0.426	1	0	0	0	0	0	0	0	0	0.2	0	0
53	0.426	1	0	0	0	0	0	0.8	0	0	0.2	0	0
54	0	1	0.0666	0	0	0	0	0.8	0.4	0.83	0.2	0.508	0
55	0	0	0	1	0	0.76	0.513	0.8	0.4	0.83	0.6	0.508	0
56	0	0	0.0666	1	0	0.76	0.513	0.8	0.4	0.83	0.6	0.508	0
57	0.426	0	0.0666	0	0	0	0.513	0.8	0.4	0.83	0.6	0.508	0
58	0	0	0	1	0	0	0.513	0.8	0.4	0.83	0.6	0.508	0
59	0	0	0.0666	1	0	0	0.513	0.8	0.4	0.83	0.6	0.508	0

Keterangan:

ABJ : Angka Bebas Jentik
HI : *House Index*
SK : Sarana Kesehatan
FD : Frekuensi DBD
KP : Kepadatan Penduduk
KW : Ketinggian Wilayah
HH : Hari Hujan
SU : Suhu Udara
KU : Kelembaban Udara
KA : Kecepatan Angin
SM : Sinar Matahari
CH : Curah Hujan

Lampiran 6. Komposisi Aturan MAX dari Data Kecamatan Gamping

Aturan	Hasil fungsi implikasi	Himpunan *fuzzy output*		
		Tidak Rawan	Rawan	Sangat Rawan
1	0.16			0.16
2	0.0666			0.0666
3	0	0		
4	0		0	
5	0.068			0.068
6	0.1			0.1
7	0.068			0.068
8	0			0
9	0	0		
10	0		0	
11	0	0		
12	0	0		
13	0	0		
14	0	0		
15	0		0	
16	0	0		
17	0	0		
18	0		0	
19	0		0	
20	0		0	
21	0			0
22	0	0		
23	0			0

Aturan	Hasil fungsi implikasi	Himpunan *fuzzy output*		
		Tidak Rawan	Rawan	Sangat Rawan
24	0			0
25	0			0
26	0			0
27	0			0
28	0		0	
29	0			0
30	0		0	
31	0	0		
32	0		0	
33	0	0		
34	0	0		
35	0			0
36	0		0	
37	0	0		
38	0	0		
39	0	0		
40	0	0		
41	0		0	
42	0	0		
43	0			0
44	0	0		
45	0	0		
46	0	0		
47	0	0		
48	0	0		
49	0	0		

Aturan	Hasil fungsi implikasi	Himpunan *fuzzy output*		
		Tidak Rawan	Rawan	Sangat Rawan
50	0	0		
51	0	0		
52	0	0		
53	0	0		
54	0	0		
55	0			0
56	0			0
57	0			0
58	0			0
59	0			0

Lampiran 7. *Script M-File* untuk Model *Fuzzy*

```
[System]
Name='Kerawanan'
Type='mamdani'
Version=2.0
NumInputs=12
NumOutputs=1
NumRules=59
AndMethod='min'
OrMethod='max'
ImpMethod='min'
AggMethod='max'
DefuzzMethod='bisector'

[Input1]
Name='Angka_Bebas_Jentik'
Range=[65 100]
NumMFs=3
MF1='a1':'trapmf',[50 65 70 78]
MF2='a2':'trapmf',[75 80 83 88]
MF3='a3':'trapmf',[85 95 100 105]

[Input2]
Name='House_Index'
Range=[0 35]
NumMFs=3
MF1='b1':'trimf',[-5 0 10]
MF2='b2':'trapmf',[8 12 16 20]
MF3='b3':'trapmf',[18 25 35 40]

[Input3]
Name='Sarana_Kesehatan'
Range=[30 175]
NumMFs=3
MF1='c1':'trimf',[0 30 75]
MF2='c2':'trapmf',[70 85 90 105]
MF3='c3':'trapmf',[100 125 175 180]

[Input4]
Name='Frekuaensi_DBD'
Range=[0 150]
NumMFs=3
MF1='d1':'trimf',[-5 0 30]
MF2='d2':'trapmf',[25 38 42 55]
MF3='d3':'trapmf',[50 75 150 160]


[Input5]
```

```
Name='Kepdatan_Penduduk'
Range=[200 20300]
NumMFs=3
MF1='e1':'trimf',[100 200 1200]
MF2='e2':'trapmf',[1000 3000 3500 5500]
MF3='e3':'trapmf',[5000 10000 20300 20500]

[Input6]
Name='Ketinggian_Wilayah'
Range=[0 550]
NumMFs=3
MF1='f1':'trimf',[-5 0 120]
MF2='f2':'trimf',[100 150 200]
MF3='f3':'trapmf',[180 250 550 600]

[Input7]
Name='Curah_Hujan'
Range=[1700 2800]
NumMFs=3
MF1='g1':'trimf',[1600 1700 1850]
MF2='g2':'trimf',[1800 1875 1950]
MF3='g3':'trapmf',[1900 2050 2800 2900]

[Input8]
Name='Hari_Hujan'
Range=[90 130]
NumMFs=3
MF1='h1':'trimf',[80 90 110]
MF2='h2':'trimf',[100 110 120]
MF3='h3':'trimf',[110 130 140]

[Input9]
Name='Suhu_Udara'
Range=[20 30]
NumMFs=3
MF1='i1':'trimf',[15 20 26]
MF2='i2':'trimf',[25 26 27]
MF3='i3':'trimf',[26 30 35]

[Input10]
Name='Kelembaban_Udara'
Range=[80 90]
NumMFs=3
MF1='j1':'trimf',[70 80 85]
MF2='j2':'trimf',[83 85 87]
MF3='j3':'trimf',[85 90 95]



[Input11]
```

```
Name='Kecepatan_Angin'
Range=[4 6]
NumMFs=3
MF1='k1':'trimf',[3 4 5]
MF2='k2':'trimf',[4.5 5 5.5]
MF3='k3':'trimf',[5 6 7]

[Input12]
Name='Sinar_Matahari'
Range=[60 80]
NumMFs=3
MF1='l1':'trimf',[50 60 70]
MF2='l2':'trimf',[65 70 75]
MF3='l3':'trimf',[70 80 85]

[Output1]
Name='output1'
Range=[1 3]
NumMFs=3
MF1='Tidak_Rawan':'trimf',[0 1 2]
MF2='Rawan':'trimf',[1.5 2 2.5]
MF3='Sangat_Rawan':'trimf',[2 3 4]

[Rules]
2 2 3 3 2 2 3 2 2 2 2 3, 3 (1) : 1
2 2 2 3 2 2 3 2 3 1 2 3, 3 (1) : 1
3 1 2 1 1 2 1 1 1 1 1 3, 1 (1) : 1
3 2 2 2 1 2 2 2 2 1 2 3, 2 (1) : 1
2 2 3 3 2 2 3 2 2 1 3 3, 3 (1) : 1
2 2 3 3 2 2 3 2 3 2 2 3, 3 (1) : 1
2 2 3 3 2 2 3 2 3 1 2 3, 3 (1) : 1
3 2 3 3 2 2 3 2 3 1 2 3, 3 (1) : 1
3 1 3 1 2 2 2 2 2 2 2 3, 1 (1) : 1
3 2 2 2 2 2 3 2 2 2 2 3, 2 (1) : 1
3 1 3 1 2 3 3 2 2 3 2 3, 1 (1) : 1
3 1 3 1 1 3 3 3 1 3 2 2, 1 (1) : 1
3 1 3 1 1 3 3 3 1 3 3 1, 1 (1) : 1
3 1 2 1 1 3 3 3 1 3 3 1, 1 (1) : 1
2 2 1 2 2 1 3 2 3 2 2 3, 2 (1) : 1
3 1 1 1 2 1 1 1 3 2 2 3, 1 (1) : 1
3 1 1 1 2 1 2 1 3 1 2 3, 1 (1) : 1
2 2 1 2 2 1 2 2 2 2 2 3, 2 (1) : 1
2 2 2 2 2 1 3 2 3 2 2 3, 2 (1) : 1
2 2 2 2 2 1 2 2 2 2 2 3, 2 (1) : 1
2 3 2 3 1 1 3 2 2 1 3 3, 3 (1) : 1
3 1 1 1 1 3 3 3 2 3 3 2, 1 (1) : 1
2 3 3 3 2 1 3 2 3 1 3 3, 3 (1) : 1
2 2 1 3 2 1 3 2 2 2 2 3, 3 (1) : 1
2 2 1 3 2 1 3 2 3 1 3 3, 3 (1) : 1
2 2 3 3 2 1 3 2 2 1 2 3, 3 (1) : 1
2 2 2 3 2 1 3 2 3 1 3 3, 3 (1) : 1
2 2 2 2 2 1 3 2 2 1 2 3, 2 (1) : 1
```

```
1 3 3 3 1 2 3 2 2 2 2 3, 3 (1) : 1
1 3 1 2 1 3 3 2 2 1 2 2, 2 (1) : 1
2 2 2 1 1 3 3 3 2 2 2 2, 1 (1) : 1
2 3 1 2 1 2 3 2 3 2 2 3, 2 (1) : 1
2 2 1 1 1 2 2 2 3 1 2 3, 1 (1) : 1
2 2 2 1 1 2 2 2 3 2 2 3, 1 (1) : 1
1 3 3 3 1 2 3 2 2 1 2 3, 3 (1) : 1
1 3 3 2 1 2 3 2 2 2 2 3, 2 (1) : 1
2 2 2 1 1 2 3 2 3 1 2 3, 1 (1) : 1
2 2 3 1 1 3 3 3 2 2 3 2, 1 (1) : 1
2 2 2 1 1 3 3 3 1 2 3 2, 1 (1) : 1
2 2 1 1 1 3 3 3 1 3 3 2, 1 (1) : 1
2 3 1 2 1 2 3 2 2 2 2 3, 2 (1) : 1
2 2 2 1 1 2 2 2 3 1 2 3, 1 (1) : 1
1 3 2 3 1 2 3 2 2 1 2 3, 3 (1) : 1
2 2 2 1 1 1 2 2 3 1 2 3, 1 (1) : 1
2 2 2 1 2 1 2 2 2 1 2 3, 1 (1) : 1
2 2 2 1 1 1 2 1 3 1 2 3, 1 (1) : 1
2 2 2 1 1 1 1 1 3 2 2 3, 1 (1) : 1
3 2 2 1 1 1 2 1 3 2 3 3, 1 (1) : 1
2 2 2 1 1 1 1 1 3 1 3 3, 1 (1) : 1
2 2 2 1 1 1 1 1 3 2 2 3, 1 (1) : 1
2 2 2 1 1 3 2 2 2 3 3 3, 1 (1) : 1
2 2 1 1 1 3 2 1 1 3 3 2, 1 (1) : 1
2 2 1 1 1 3 2 2 1 3 3 2, 1 (1) : 1
3 2 2 1 1 3 2 2 2 2 3 3, 1 (1) : 1
1 3 1 3 3 2 3 2 2 2 2 3, 3 (1) : 1
1 3 2 3 3 2 3 2 2 2 2 3, 3 (1) : 1
2 3 2 3 3 1 3 2 2 2 2 3, 3 (1) : 1
1 3 1 3 3 1 3 2 2 2 2 3, 3 (1) : 1
1 3 2 3 3 1 3 2 2 2 2 3, 3 (1) : 1
```

Lampiran 8. Pengujian Model *Fuzzy* dengan Data *Training*

Kecamatan	Kerawanan Asli	Hasil Defuzzifikasi	Kerawanan dengan Model	Keterangan
Gamping	Sangat Rawan	2.54	Sangat Rawan	Benar
Godean	Sangat Rawan	2.56	Sangat Rawan	Benar
Moyudan	**Tidak Rawan**	**2**	**Rawan**	**Salah**
Minggir	Rawan	2	Rawan	Benar
Mlati	Sangat Rawan	2.58	Sangat Rawan	Benar
Depok	Sangat Rawan	2.54	Sangat Rawan	Benar
Berbah	Sangat Rawan	2.56	Sangat Rawan	Benar
Kalasan	Sangat Rawan	2.56	Sangat Rawan	Benar
Ngemplak	Tidak Rawan	1.42	Tidak Rawan	Benar
Ngaglik	Sangat Rawan	2.6	Sangat Rawan	Benar
Sleman	Rawan	2	Rawan	Benar
Tempel	Tidak Rawan	1.44	Tidak Rawan	Benar
Turi	Tidak Rawan	1.42	Tidak Rawan	Benar
Pakem	Tidak Rawan	1.4	Tidak Rawan	Benar
Cangkringan	Tidak Rawan	1.44	Tidak Rawan	Benar
Srandakan	Rawan	2	Rawan	Benar
Kretek	Tidak Rawan	1.48	Tidak Rawan	Benar
Pundong	Tidak Rawan	1.44	Tidak Rawan	Benar
Pajangan	Rawan	2	Rawan	Benar
Bantul	Rawan	2	Rawan	Banar
Jetis	Rawan	2	Rawan	Benar
Imogiri	Sangat Rawan	2.54	Sangat Rawan	Benar
Dlingo	Tidak Rawan	1.48	Tidak Rawan	Benar
Banguntapan	Sangat Rawan	2.56	Sangat Rawan	Benar

Kecamatan	Kerawanan Asli	Hasil Defuzzifikasi	Kerawanan dengan Model	Keterangan
Pleret	Sangat Rawan	2.56	Sangat Rawan	Benar
Piyungan	Sangat Rawan	2.58	Sangat Rawan	Benar
Sewon	Sangat Rawan	2.54	Sangat Rawan	Benar
Kasihan	Sangat Rawan	2.56	Sangat Rawan	Benar
Sedayu	Rawan	2	Rawan	Benar
Wonosari	Sangat Rawan	2.54	Sangat Rawan	Benar
Nglipar	Rawan	2	Rawan	Benar
Patuk	Tidak Rawan	1.42	Tidak Rawan	Benar
Paliyan	Rawan	2	Rawan	Benar
Panggang	Tidak Rawan	1.44	Tidak Rawan	Benar
Tepus	Tidak Rawan	1.44	Tidak Rawan	Benar
Karangmojo	Sangat Rawan	2.6	Sangat Rawan	Benar
Ponjong	Rawan	2	Rawan	Benar
Rongkop	Tidak Rawan	1.46	Tidak Rawan	Benar
Semin	Tidak Rawan	1.44	Tidak Rawan	Benar
Ngawen	Tidak Rawan	1.46	Tidak Rawan	Benar
Gedangsari	Tidak Rawan	1.46	Tidak Rawan	Benar
Saptosari	Rawan	2	Rawan	Benar
Girisubo	Tidak Rawan	1.42	Tidak Rawan	Benar
Tanjungsari	Sangat Rawan	2.54	Sangat Rawan	Benar
Temon	Tidak Rawan	1.4	Tidak Rawan	Benar
Wates	Tidak Rawan	1.44	Tidak Rawan	Benar
Panjatan	Tidak Rawan	1.44	Tidak Rawan	Benar
Galur	Tidak Rawan	1.42	Tidak Rawan	Benar
Lendah	Tidak Rawan	1.46	Tidak Rawan	Benar
Sentolo	Tidak Rawan	1.42	Tidak Rawan	Benar
Pengasih	Tidak Rawan	1.46	Tidak Rawan	Benar

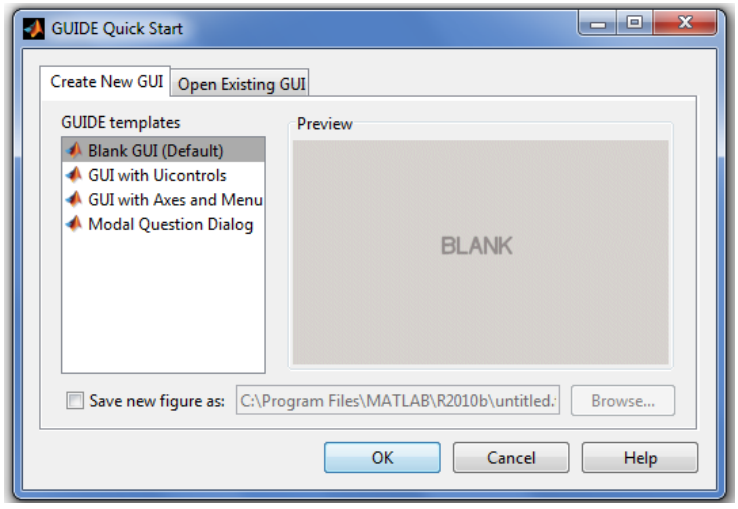
Kecamatan	Kerawanan Asli	Hasil Defuzzifikasi	Kerawanan dengan Model	Keterangan
Kokap	Tidak Rawan	1.44	Tidak Rawan	Benar
Girimulyo	Tidak Rawan	1.46	Tidak Rawan	Benar
Nanggulan	Tidak Rawan	1.42	Tidak Rawan	Benar
Samigaluh	Tidak Rawan	1.44	Tidak Rawan	Benar
Kalibawang	Tidak Rawan	1.44	Tidak Rawan	Benar
Tegalrejo	Sangat Rawan	2.58	Sangat Rawan	Benar
Jetis	Sangat Rawan	2.56	Sangat Rawan	Benar
Gondokusuman	Sangat Rawan	2.6	Sangat Rawan	Benar
Wirobrajan	Sangat Rawan	2.54	Sangat Rawan	Benar
Mantrijeron	Sangat Rawan	2.54	Sangat Rawan	Benar
Mergangsang	Sangat Rawan	2.58	Sangat Rawan	Benar
Umbulharjo	Sangat Rawan	2.58	Sangat Rawan	Benar
Kotagede	Sangat Rawan	2.58	Sangat Rawan	Benar

Lampiran 9. Hasil Defuzzifikasi untuk Data *Testing*

Kecamatan	Kerawanan Asli	Hasil Defuzzifikasi	Kerawanan dengan Model	Keterangan
Danurejan	Rawan	2	Rawan	Benar
Gedongtangen	Rawan	2	Rawan	Benar
Ngampilan	Rawan	2	Rawan	Benar
Kraton	Rawan	2	Rawan	Benar
Gondomanan	Rawan	2	Rawan	Benar
Pakualaman	Rawan	2	Rawan	Benar
Purwosari	**Rawan**	**1.48**	**Tidak Rawan**	**Salah**
Semanu	Rawan	2	Rawan	Benar
Playen	Rawan	2	Rawan	Benar
Sanden	Rawan	2	Rawan	Benar
Bambang Lipuro	Rawan	2	Rawan	Benar
Pandak	Rawan	2	Rawan	Benar
Seyegan	Rawan	2	Rawan	Benar
Prambanan	Rawan	2	Rawan	Benar

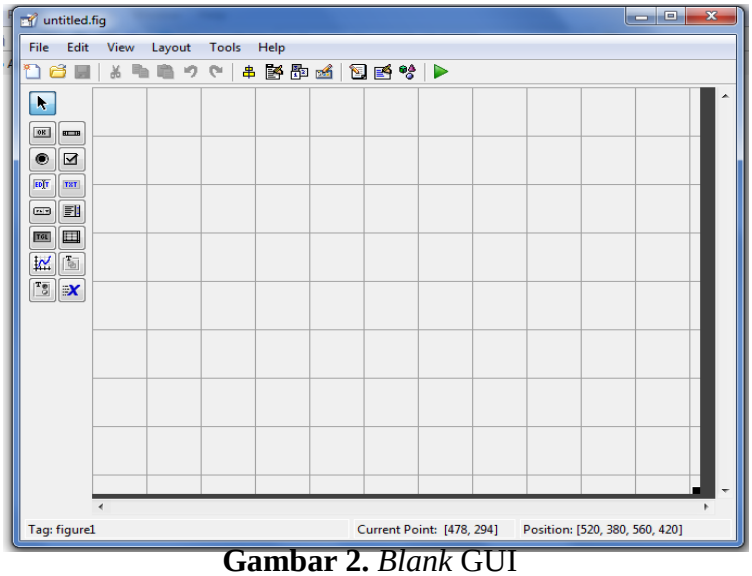
Lampiran 10. Langkah-Langkah Pembuatan Model *Fuzzy* dengan GUI

1. Panggil program *Graphic User Interface Bulder* (GUIDE) pada MATLAB di command window
   >> guide
   Sehingga muncul GUIDE *Quick Start*



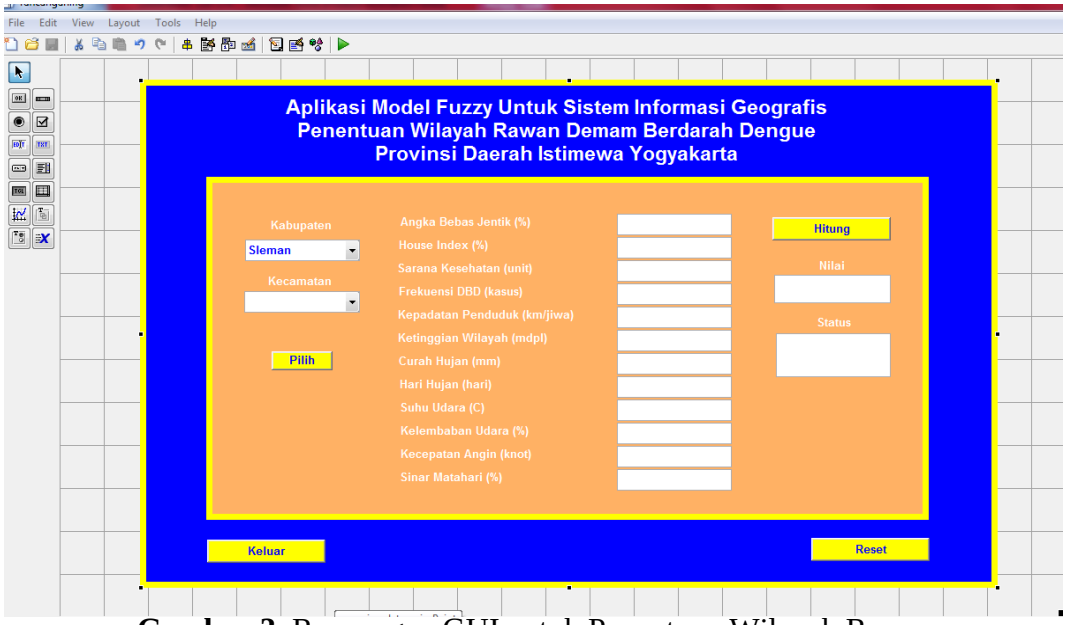
Gambar 1. *Guide Quick Start*

2. Pilih Blank GUI (*Default*) tekan ok, sehingga muncul tampilan



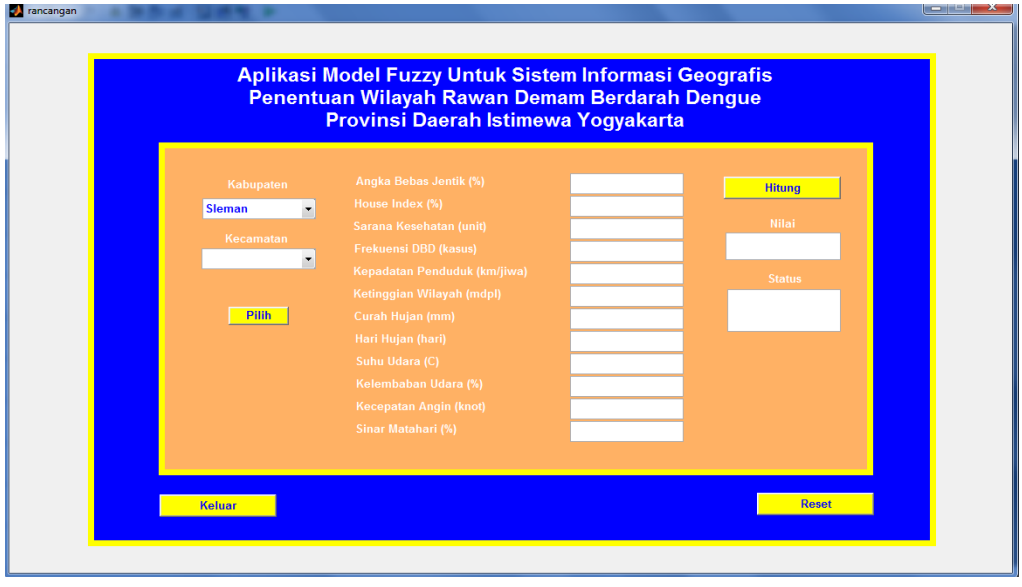
Gambar 2. *Blank* GUI

3. Desain rancangan GUI untuk penentuan wilayah rawan demam berdarah *dengue* dengan menggunakan *Uicontrol* yang ada pada GUI



Gambar 3. Rancangan GUI untuk Penentuan Wilayah Rawan Demam Berdarah *Dengue*

4. Simpan rancangan GUI atau *run figure* (segitiga hijau)
5. Rancangan GUI disimpan dalam dua exstensi file yaitu .fig dan .m Berikut ini tampilan GUI setelah di *save* atau di *run figure*



Gambar 4. Tampilan GUI

6. Hasil Rancangan GUI untuk Penentuan wilayah rawan demam berdarah *dengue*

Gambar 5. Hasil Rancangan GUI untuk Penentuan Wilayah Rawan Demam Berdarah *Dengue*

Lampiran 11. Script M-File Model *Fuzzy* GUI

```
function varargout = rancangan(varargin)
%RANCANGAN M-file for rancangan.fig
%      RANCANGAN, by itself, creates a new RANCANGAN or raises the
existing
%      singleton*.
%
%      H = RANCANGAN returns the handle to a new RANCANGAN or the
handle to
%      the existing singleton*.
%
%      RANCANGAN('Property','Value',...) creates a new RANCANGAN
using the
%      given property value pairs. Unrecognized properties are
passed via
%      varargin to rancangan_OpeningFcn.  This calling syntax
produces a
%      warning when there is an existing singleton*.
%
%      RANCANGAN('CALLBACK') and RANCANGAN('CALLBACK',hObject,...)
call the
%      local function named CALLBACK in RANCANGAN.M with the given
input
%      arguments.
%
%      *See GUI Options on GUIDE's Tools menu.  Choose "GUI allows
only one
%      instance to run (singleton)".
%
% See also: GUIDE, GUIDATA, GUIHANDLES

% Edit the above text to modify the response to help rancangan

% Last Modified by GUIDE v2.5 23-Jul-2017 15:10:40

% Begin initialization code - DO NOT EDIT
gui_Singleton = 1;
gui_State = struct('gui_Name',       mfilename, ...
                   'gui_Singleton',  gui_Singleton, ...
                   'gui_OpeningFcn', @rancangan_OpeningFcn, ...
                   'gui_OutputFcn',  @rancangan_OutputFcn, ...
                   'gui_LayoutFcn',  [], ...
                   'gui_Callback',   []);
if nargin && ischar(varargin{1})
   gui_State.gui_Callback = str2func(varargin{1});
end

if nargout
```

```
    [varargout{1:nargout}] = gui_mainfcn(gui_State, varargin{:});
else
    gui_mainfcn(gui_State, varargin{:});
end
% End initialization code - DO NOT EDIT

% --- Executes just before rancangan is made visible.
function rancangan_OpeningFcn(hObject, eventdata, handles, varargin)
% This function has no output args, see OutputFcn.
% hObject    handle to figure
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)
% varargin   unrecognized PropertyName/PropertyValue pairs from the
%            command line (see VARARGIN)

% Choose default command line output for rancangan
handles.output = hObject;

% Update handles structure
guidata(hObject, handles);

% UIWAIT makes rancangan wait for user response (see UIRESUME)
% uiwait(handles.figure1);

% --- Outputs from this function are returned to the command line.
function varargout = rancangan_OutputFcn(hObject, eventdata,
handles)
% varargout  cell array for returning output args (see VARARGOUT);
% hObject    handle to figure
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Get default command line output from handles structure
varargout{1} = handles.output;

function Kecamatan_Callback(hObject, eventdata, handles)
% hObject    handle to Kecamatan (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of Kecamatan as text
%        str2double(get(hObject,'String')) returns contents of
Kecamatan as a double

% --- Executes during object creation, after setting all properties.
function Kecamatan_CreateFcn(hObject, eventdata, handles)
% hObject    handle to Kecamatan (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called
% Hint: edit controls usually have a white background on Windows.
```

```
%       See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end

function Kabupaten_Callback(hObject, eventdata, handles)
% hObject    handle to Kecamatan (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)
mode_kabupaten = get(hObject,'value');
switch mode_kabupaten
    case 1
        mode = 1;
        handles.mode = mode;
        guidata(hObject,handles);
    case 2
        mode = 2;
        handles.mode = mode;
        guidata(hObject,handles);
    case 3
        mode = 3;
        handles.mode = mode;
        guidata(hObject,handles);
    case 4
        mode = 4;
        handles.mode = mode;
        guidata(hObject,handles);
    case 5
        mode = 5;
        handles.mode = mode;
        guidata(hObject,handles);
end

% Hints: get(hObject,'String') returns contents of Kecamatan as text
%        str2double(get(hObject,'String')) returns contents of
Kecamatan as a double


% --- Executes during object creation, after setting all properties.
function Kabupaten_CreateFcn(hObject, eventdata, handles)
% hObject    handle to Kecamatan (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: edit controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end
```

```
% --- Executes on button press in Pilih.
function Pilih_Callback(hObject, eventdata, handles)
% hObject    handle to Pilih (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)
mode = handles.mode;
if mode == 1

set(handles.Kecamatan,'string',{'Gamping','Godean','Moyudan','Minggi
r',...

'Seyegan','Mlati','Depok','Berbah','Prambanan','Kalasan','Ngemplak',
...
        'Ngaglik','Sleman','Tempel','Turi','Pakem','Cangkringan'});
end
if mode == 2

set(handles.Kecamatan,'string',{'Srandakan','Sanden','Kretek','Pundo
ng',...
        'Bambang
Lipuro','Pandak','Pajangan','Bantul','Jetis','Imogiri',...

'Dlingo','Banguntapan','Pleret','Piyungan','Sewon','Kaisahan','Seday
u'});
end
if mode == 3

set(handles.Kecamatan,'string',{'Wonosari','Nglipar','Playen','Patuk
',...

'Paliyan','Panggang','Tepus','Semanu','Karangmojo','Ponjong','Rongko
p',...

'Semin','Ngawen','Gedangsari','Saptosari','Girisubo','Tanjungsari','
Purwosari'});
end
if mode == 4

set(handles.Kecamatan,'string',{'Temon','Wates','Panjatan','Galur',.
..

'Lendah','Sentolo','Pengasih','Kokap','Girimulyo','Nanggulan','Samig
aluh',...
        'Kalibawang'});
end
if mode == 5

set(handles.Kecamatan,'string',{'Tegalrejo','Jetis','Gondokusuman','
Danurejan',...
```

```
'Gedongtangen','Ngampilan','Wirobrajan','Mantrijeron','Kraton','Gond
omanan',...
        'Pakualaman','Mergangsang','Umbulharjo','Kotagede'});
end

% --- Executes on button press in Keluar.
function Keluar_Callback(hObject, eventdata, handles)
% hObject    handle to Keluar (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)
Close;

% --- Executes on button press in Hitung.
function Hitung_Callback(hObject, eventdata, handles)
% hObject    handle to Hitung (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)
a1 = str2double(get(handles.ABJ,'string'));
a2 = str2double(get(handles.HI,'string'));
a3 = str2double(get(handles.SK,'string'));
a4 = str2double(get(handles.FD,'string'));
a5 = str2double(get(handles.KP,'string'));
a6 = str2double(get(handles.KW,'string'));
a7 = str2double(get(handles.CH,'string'));
a8 = str2double(get(handles.HH,'string'));
a9 = str2double(get(handles.SU,'string'));
a10 = str2double(get(handles.KU,'string'));
a11 = str2double(get(handles.KA,'string'));
a12 = str2double(get(handles.SM,'string'));
input = [a1 a2 a3 a4 a5 a6 a7 a8 a9 a10 a11 a12];
fis = readfis('Kerawanan');
out = evalfis ([a1 a2 a3 a4 a5 a6 a7 a8 a9 a10 a11 a12],fis);

if (out <= 1.6)
    set(handles.Status,'string','Tidak Rawan');
elseif (out > 1.6) && (out <= 2.4)
    set(handles.Status,'string','Rawan');
elseif (out >= 2.4)
    set(handles.Status,'string','Sangat Rawan');
end;
set(handles.Nilai,'string',num2str(out));

% --- Executes on button press in Reset.
function Reset_Callback(hObject, eventdata, handles)
% hObject    handle to Reset (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)
set(handles.Nilai,'string','');
set(handles.Status,'string','');
set(handles.ABJ,'string','');
set(handles.HI,'string','');
```

```
set(handles.SK,'string','');
set(handles.FD,'string','');
set(handles.KP,'string','');
set(handles.KW,'string','');
set(handles.CH,'string','');
set(handles.HH,'string','');
set(handles.SU,'string','');
set(handles.KU,'string','');
set(handles.KA,'string','');
set(handles.SM,'string','');

function Nilai_Callback(hObject, eventdata, handles)
% hObject    handle to Nilai (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of Nilai as text
%        str2double(get(hObject,'String')) returns contents of Nilai
as a double

% --- Executes during object creation, after setting all properties.
function Nilai_CreateFcn(hObject, eventdata, handles)
% hObject    handle to Nilai (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: edit controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end

function Status_Callback(hObject, eventdata, handles)
% hObject    handle to Status (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of Status as text
%        str2double(get(hObject,'String')) returns contents of
Status as a double

% --- Executes during object creation, after setting all properties.
function Status_CreateFcn(hObject, eventdata, handles)
% hObject    handle to Status (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: edit controls usually have a white background on Windows.
```

```
%       See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end

function HI_Callback(hObject, eventdata, handles)
% hObject    handle to HI (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of HI as text
%        str2double(get(hObject,'String')) returns contents of HI as
a double

% --- Executes during object creation, after setting all properties.
function HI_CreateFcn(hObject, eventdata, handles)
% hObject    handle to HI (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: edit controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end

function ABJ_Callback(hObject, eventdata, handles)
% hObject    handle to ABJ (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of ABJ as text
%        str2double(get(hObject,'String')) returns contents of ABJ
as a double

% --- Executes during object creation, after setting all properties.
function ABJ_CreateFcn(hObject, eventdata, handles)
% hObject    handle to ABJ (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: edit controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end
```

```
function SK_Callback(hObject, eventdata, handles)
% hObject    handle to SK (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of SK as text
%        str2double(get(hObject,'String')) returns contents of SK as
a double

% --- Executes during object creation, after setting all properties.
function SK_CreateFcn(hObject, eventdata, handles)
% hObject    handle to SK (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: edit controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end

function FD_Callback(hObject, eventdata, handles)
% hObject    handle to FD (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of FD as text
%        str2double(get(hObject,'String')) returns contents of FD as
a double

% --- Executes during object creation, after setting all properties.
function FD_CreateFcn(hObject, eventdata, handles)
% hObject    handle to FD (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: edit controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end

function KP_Callback(hObject, eventdata, handles)
% hObject    handle to KP (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)
```

```
% Hints: get(hObject,'String') returns contents of KP as text
%        str2double(get(hObject,'String')) returns contents of KP as
a double

% --- Executes during object creation, after setting all properties.
function KP_CreateFcn(hObject, eventdata, handles)
% hObject    handle to KP (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: edit controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end

function CH_Callback(hObject, eventdata, handles)
% hObject    handle to CH (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of CH as text
%        str2double(get(hObject,'String')) returns contents of CH as
a double

% --- Executes during object creation, after setting all properties.
function CH_CreateFcn(hObject, eventdata, handles)
% hObject    handle to CH (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: edit controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end

function SU_Callback(hObject, eventdata, handles)
% hObject    handle to SU (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of SU as text
%        str2double(get(hObject,'String')) returns contents of SU as
a double
```

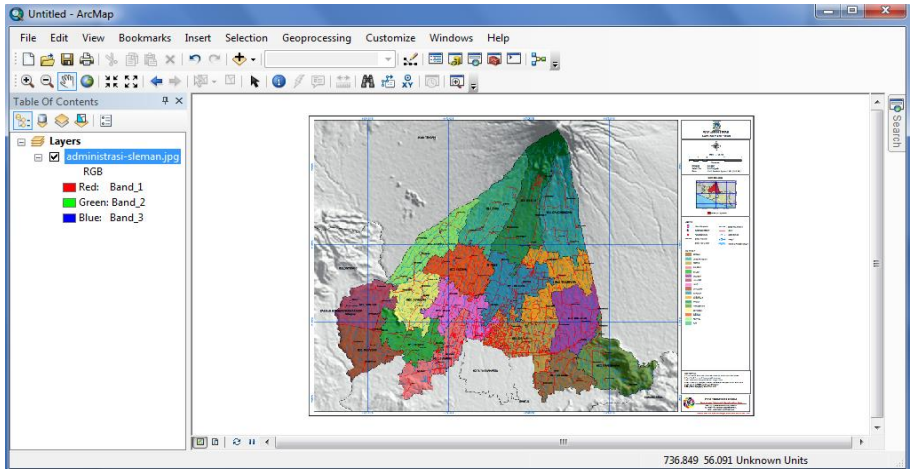
```
% --- Executes during object creation, after setting all properties.
function SU_CreateFcn(hObject, eventdata, handles)
% hObject    handle to SU (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: edit controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end

function HH_Callback(hObject, eventdata, handles)
% hObject    handle to HH (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of HH as text
%        str2double(get(hObject,'String')) returns contents of HH as
a double

% --- Executes during object creation, after setting all properties.
function HH_CreateFcn(hObject, eventdata, handles)
% hObject    handle to HH (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: edit controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end

function KU_Callback(hObject, eventdata, handles)
% hObject    handle to KU (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of KU as text
%        str2double(get(hObject,'String')) returns contents of KU as
a double

% --- Executes during object creation, after setting all properties.
function KU_CreateFcn(hObject, eventdata, handles)
% hObject    handle to KU (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
```

```
% handles    empty - handles not created until after all CreateFcns
called

% Hint: edit controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end

function KA_Callback(hObject, eventdata, handles)
% hObject    handle to KA (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of KA as text
%        str2double(get(hObject,'String')) returns contents of KA as
a double

% --- Executes during object creation, after setting all properties.
function KA_CreateFcn(hObject, eventdata, handles)
% hObject    handle to KA (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: edit controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end

function SM_Callback(hObject, eventdata, handles)
% hObject    handle to SM (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of SM as text
%        str2double(get(hObject,'String')) returns contents of SM as
a double

% --- Executes during object creation, after setting all properties.
function SM_CreateFcn(hObject, eventdata, handles)
% hObject    handle to SM (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: edit controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
```

```
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end

function KW_Callback(hObject, eventdata, handles)
% hObject    handle to KW (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    structure with handles and user data (see GUIDATA)

% Hints: get(hObject,'String') returns contents of KW as text
%        str2double(get(hObject,'String')) returns contents of KW as
a double

% --- Executes during object creation, after setting all properties.
function KW_CreateFcn(hObject, eventdata, handles)
% hObject    handle to KW (see GCBO)
% eventdata  reserved - to be defined in a future version of MATLAB
% handles    empty - handles not created until after all CreateFcns
called

% Hint: edit controls usually have a white background on Windows.
%       See ISPC and COMPUTER.
if ispc && isequal(get(hObject,'BackgroundColor'),
get(0,'defaultUicontrolBackgroundColor'))
    set(hObject,'BackgroundColor','white');
end

% --- Executes on key press with focus on Kecamatan and none of its
controls.
function Kecamatan_KeyPressFcn(hObject, eventdata, handles)
% hObject    handle to Kecamatan (see GCBO)
% eventdata  structure with the following fields (see UICONTROL)
%   Key: name of the key that was pressed, in lower case
%   Character: character interpretation of the key(s) that was
pressed
%   Modifier: name(s) of the modifier key(s) (i.e., control, shift)
pressed
% handles    structure with handles and user data (see GUIDATA)
```

Lampiran 12. Langkah-Langkah Pembuatan Peta

1. Buka ArcMap 10.3, selanjutnya klik **add data**, kemudian pilih direktori yang telah diaktifkan, lalu pilih peta yang akan ditampilkan dan klik **add**, maka peta yang dipilih akan ditampilkan dalam **ArcMap.**

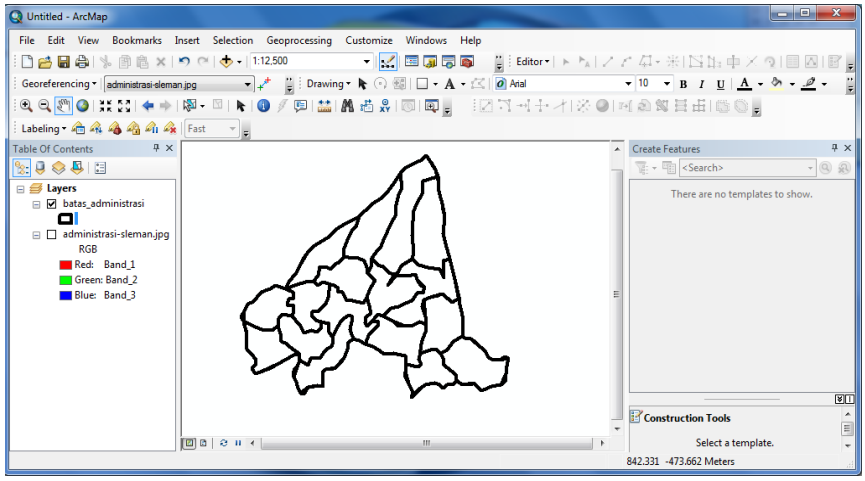


Gambar 6. Tampilan Peta pada *Layer*

2. Georeferencing

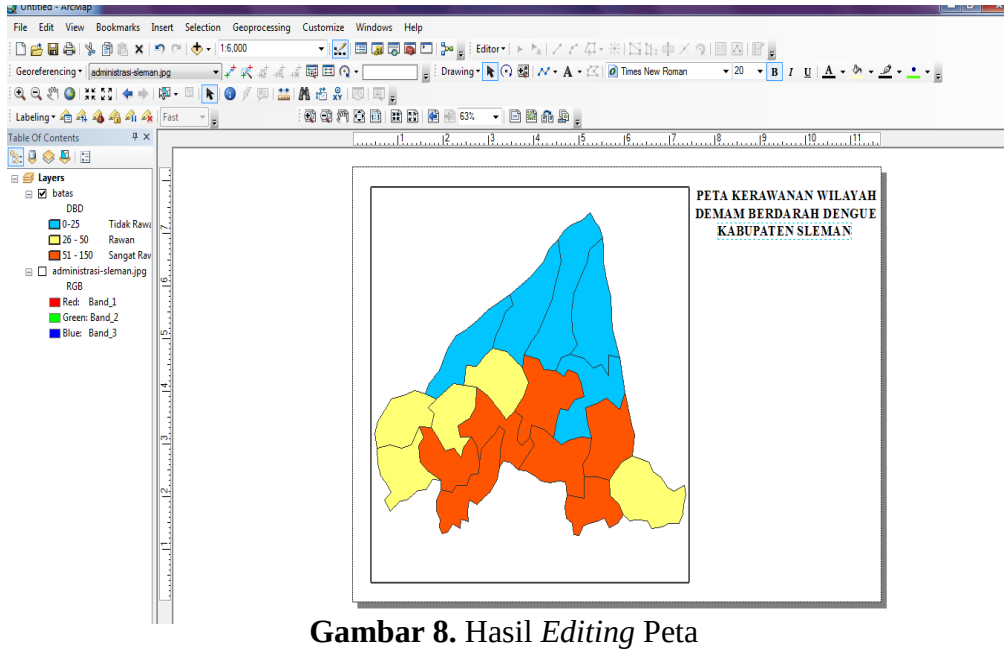
   Supaya peta yang dipilih memiliki informasi spasial maka dilakukan georeferencing, aktifkan **tool georeferencing** dengan pilih **customize** pada menu bar. **Klik toolbars** dan aktifkan **georeferencing**

3. Kemudian melakukan digitasi peta dengan mengklik **start editing** lalu **select features** selanjutnya pilih **Cut polygon**.



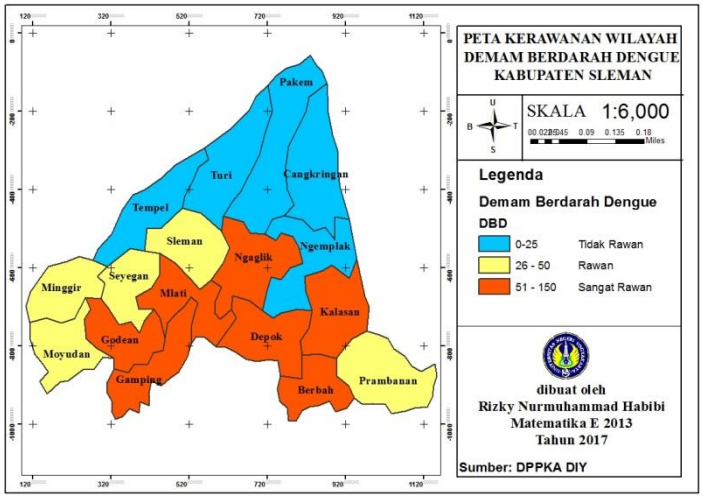
Gambar 7. Hasil *Digitasi* Peta

4. Kemudian melakukan editing peta dengan memberikan atribut pada peta dengan cara klik kanan pada layer lalu pilih **open atribut table** lalu klik pada tabel option dan pilih **add field**, setelah itu menampilkan grafik kerawanan dengan klik kanan pada layer **shapefile** pilih properties. pilih symbolig, klik Quantities pilih sesuai keinginan lalu ok.



Gambar 8. Hasil *Editing* Peta

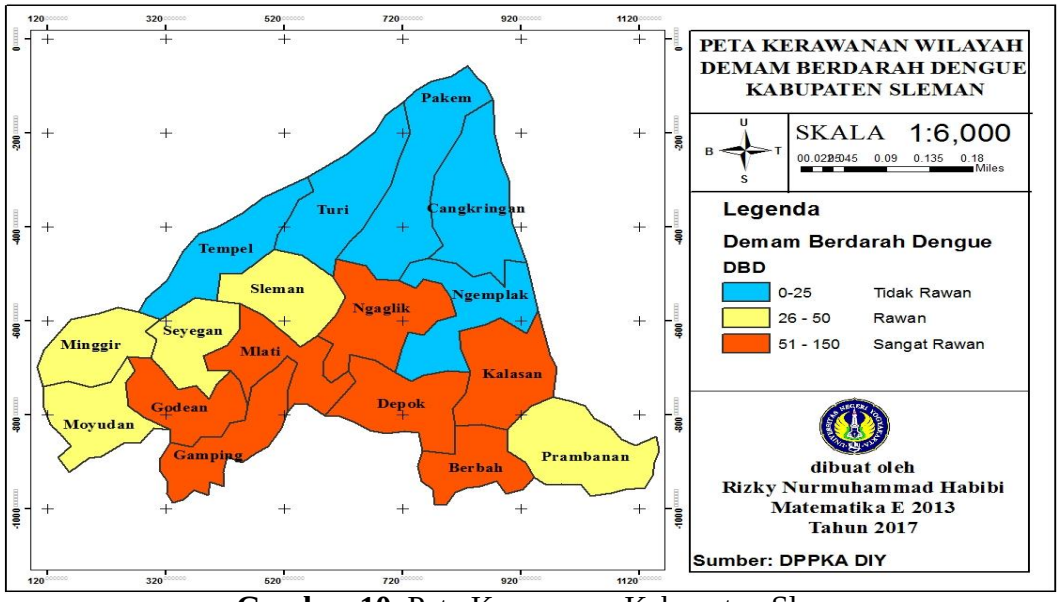
5. Terakhir layout peta kerawanan demam berdarah *dengue*, setelah melakukan proses gereferencing, digitasi, editing, kemudian yang terakhir hasil layout peta.



Gambar 9. Hasil *Layout* Peta

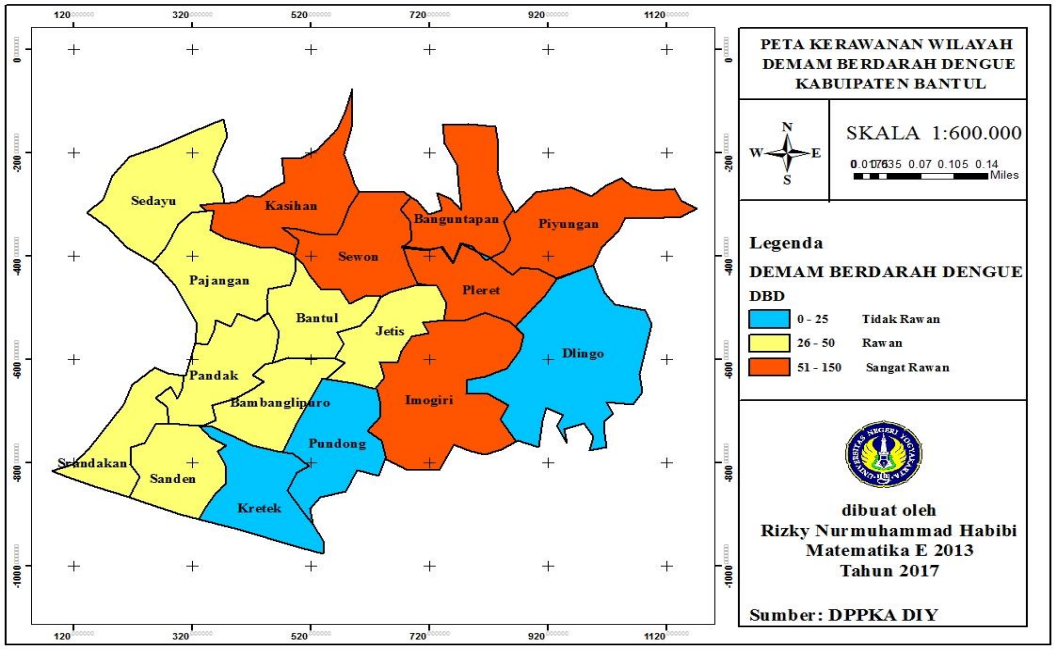
Lampiran 13. Hasil Pemetaan

1. Peta Kerawanan Wilayah Kabupaten Sleman



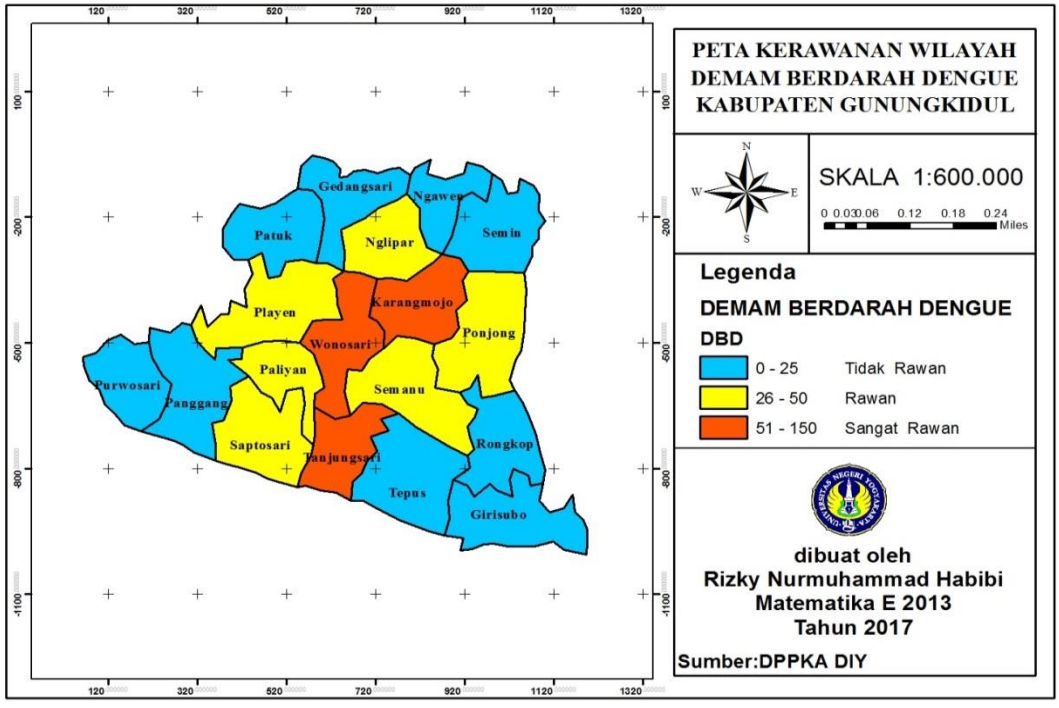
Gambar 10. Peta Kerawanan Kabupaten Sleman

2. Peta Kerawanan Wilayah Kabupaten Bantul



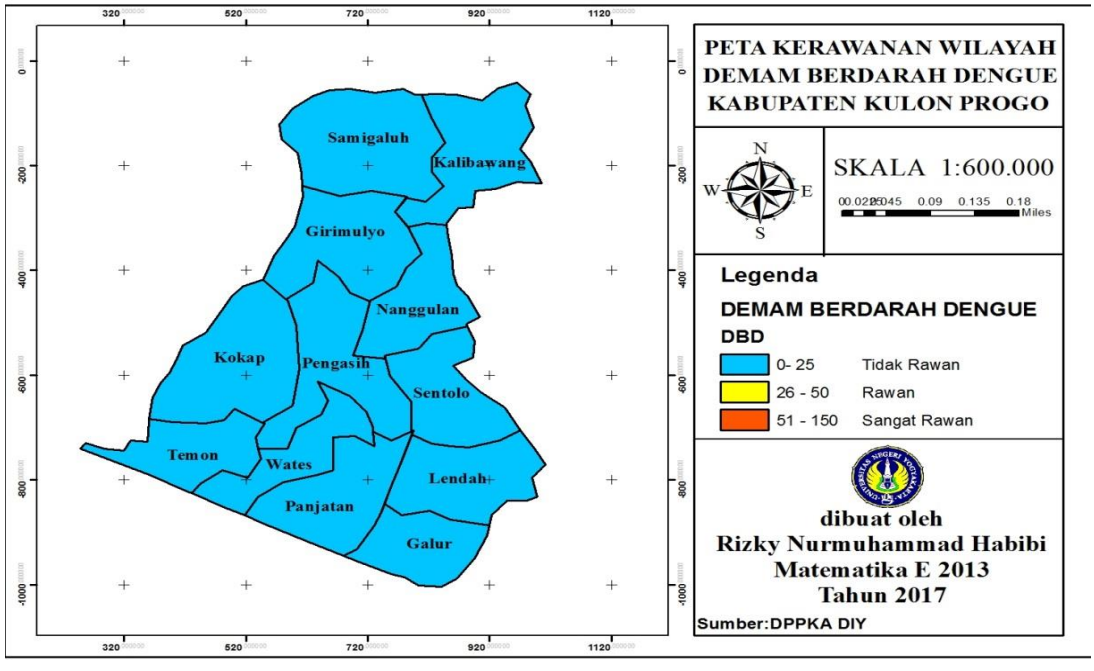
Gambar 11. Peta Kerawanan Kabupaten Bantul

3. Peta Kerawanan Wilayah Kabupaten Gunungkidul



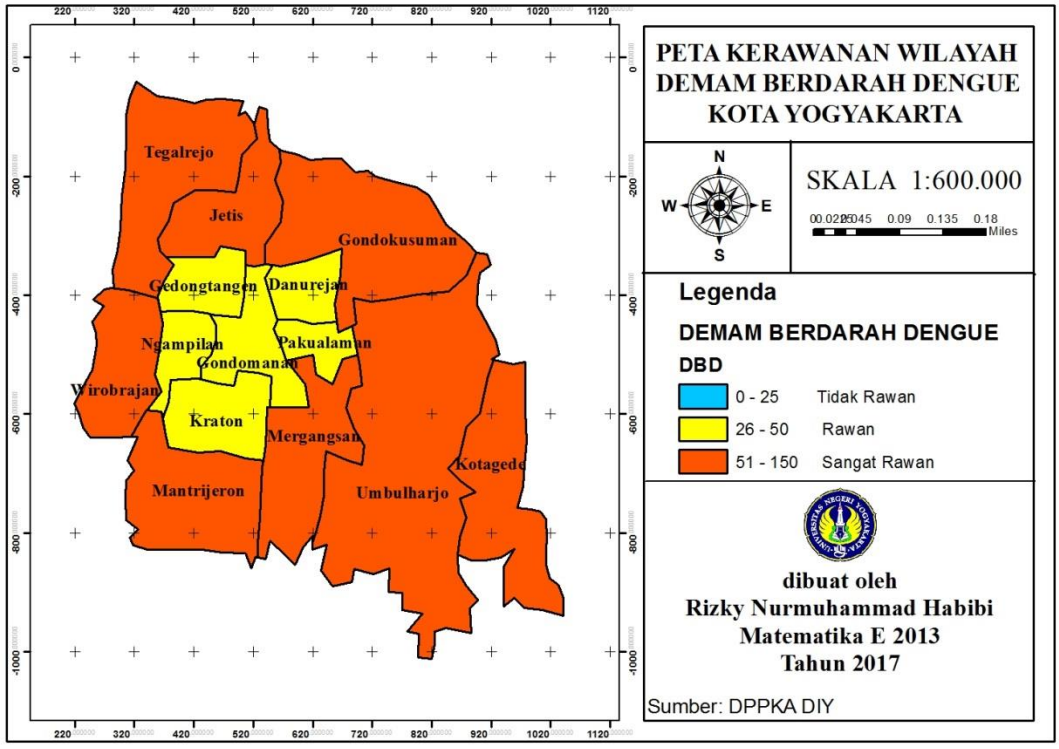
Gambar 12. Peta Kerawanan Kabupaten Gunungkidul

4. Peta Kerawanan Wilayah Kabupaten Kulon Progo



Gambar 13. Peta Kerawanan Kabupaten Kulon Progo

5. Peta Kerawanan Wilayah Kota Yogyakarta



Gambar 14. Peta Kerawanan Kota Yogyakarta