

## LAMPIRAN

Lampiran 1 Data Node Rute dan Percabangan

Nama Node	Latitude	Longitude	Koneksi
N1	-6.263723	107.016852	G1
N2	-6.248921	106.977871	G1,N3
N3	-6.256442	106.957894	N2,N8,G4,G2
N4	-6.107243	106.920263	G9,G10
N5	-6.141375	106.939212	G9,G7
N6	-6.184070	106.942865	G7,G6
N7	-6.225222	106.952593	G6,G5
N8	-6.269205	106.958710	N3,G24
N9	-6.302257	106.946964	G24,N17
N10	-6.312151	106.911984	G23,G22
N11	-6.107773	106.893822	G10,G11
N12	-6.132256	106.892986	G11,N21,N13
N13	-6.153502	106.886906	N12,G12
N14	-6.172305	106.876993	G13,G14
N15	-6.211071	106.874075	G15,G16
N16	-6.245526	106.896832	G20,G21
N17	-6.308020	106.897062	G25,N9
N18	-6.246870	106.877145	G18,G19,G31,G32
N19	-6.274835	106.873174	G28,G29
N20	-6.305967	106.884316	G25,G26,G81
N21	-6.122130	106.861331	N12,G47
N22	-6.243185	106.861848	G33,G34
N23	-6.305576	106.862317	G79,G80
N24	-6.131855	106.821287	G44,G45
N25	-6.224627	106.815871	G36,G37
N26	-6.296230	106.827355	G78,G79
N27	-6.131538	106.784862	G42,G43,G48
N28	-6.152810	106.793929	G41,G42
N29	-6.179323	106.796149	G38,G39,N30
N30	-6.204349	106.800956	N29,G37,N31
N31	-6.226245	106.789026	N30,N32
N32	-6.251292	106.781636	N31,N33
N33	-6.288376	106.778141	N32,N34,N41,G76
N34	-6.292275	106.792606	N33,G77

N35	-6.292431	106.805404	G77,G78
N36	-6.122812	106.759502	G49,G50
N37	-6.190035	106.768076	G63,G64
N38	-6.229208	106.752282	G70,G71
N39	-6.250411	106.763061	N51,G72,G73
N40	-6.281631	106.772099	N41,G75,G76
N41	-6.289189	106.770095	N42,N40,N33
N42	-6.304492	106.758686	N41,N43
N43	-6.320401	106.746023	N42,N44,N45
N44	-6.324868	106.744314	N43,N45
N45	-6.325048	106.746778	N43,N44
N46	-6.117256	106.734570	G51,G52,G56
N47	-6.132034	106.730212	G56,G57
N48	-6.167642	106.727607	G58,G59
N49	-6.190875	106.731646	G60,G61,G66,G84
N50	-6.206298	106.738702	G66,G67
N51	-6.272070	106.749010	N39,G82
N52	-6.097303	106.716305	G52,G53
N53	-6.201281	106.707275	G84,G85
N54	-6.285377	106.731350	G82,G83
N55	-6.295756	106.710969	N61,G83
N56	-6.113128	106.686782	G55
N57	-6.213240	106.684060	G85,G86
N58	-6.218096	106.666033	N59,G86,G87
N59	-6.243703	106.667726	N58,N60
N60	-6.267702	106.680232	N59,N61
N61	-6.299634	106.698920	N60,N62,N55
N62	-6.311745	106.679633	N61
N63	-6.205759	106.530807	N64,G89
N64	-6.204547	106.512892	N63,G90
N65	-6.203756	106.460021	G90,N66
N66	-6.177058	106.378859	N65,N67
N67	-6.161478	106.329534	N66,N68
N68	-6.140802	106.266950	N67,N69
N69	-6.029962	106.098692	N68,N70
N70	-5.991860	106.051630	N69,N71
N71	-5.982409	106.022344	N70,N72
N72	-5.973001	106.008656	N71,G91

Lampiran 2 Data Gerbang Tol

Nama Node	Latitude	Longitude	Koneksi	Nama Gerbang
G1	-6.263721	107.016869	N1,N2	Toll Bekasi Timur
G2	-6.256345	106.954679	N3,G3	Tol Gate Cikunir 4
G3	-6.256887	106.954705	G2,G23	Tol Gate Cikunir 3
G4	-6.246372	106.955651	N3,G5	Gt Kalimantan 2
G5	-6.241779	106.953329	G4,N7	Gerbang Kalimantan 1
G6	-6.213015	106.951884	N6,N7	Tol Gate Pulo Gebang
G7	-6.178182	106.942931	N5,N6	Pintu Tol Cakung Timur
G8	-	-		Karya Baru Team
G9	-6.117960	106.925542	N4,N5	Semper Toll Plaza 2
G10	-6.108501	106.902464	N4,N11	Gerbang Tol Koja Barat
G11	-6.119588	106.893315	N11,N12	Gerbang Tol Kebon Bawang
G12	-6.158947	106.883357	N13,G13	Toll Gate Sunter
G13	-6.172213	106.877183	G12,N14	Gerbang Tol Cempaka Putih
G14	-6.182996	106.875475	N14,G15	Gerbang Tol Pulomas
G15	-6.201498	106.873435	G14,N15	Pintu Toll Rawamangun
G16	-6.210214	106.873793	N15,G17	Gerbang Tol Jatinegara
G17	-6.224406	106.874941	G16,G18	Gerbang Tol Pedati
G18	-6.235387	106.877115	G17,N18	Toll Gate Kebon Nanas
G19	-6.245111	106.889034	N18,G20	Gerbang Tol Halim Utama
G20	-6.244115	106.891065	N16,G19	Gerbang Tol Cikampek Utama 1
G21	-6.256314	106.908128	N16,G22	Toll Gate Pondok Gede Barat 2
G22	-6.255537	106.907791	N10,G21	Toll Gate Pondok Gede Barat
G23	-6.256826	106.943281	G3,N10	Gerbang Tol Pondok Gede Timur 1
G24	-6.296988	106.955104	N8,N9	Jatiasih 2 Toll Both

G25	-6.307580	106.895596	N17,N20	Bambu Apus Toll Gate 2
G26	-6.301478	106.883319	N20,G27	Gerbang Tol Dukuh 1
G27	-6.304550	106.883532	G26,G28	Gerbang Tol Dukuh 2
G28	-6.299755	106.883160	N19,G27	Gerbang Tol Dukuh 3
G29	-6.287362	106.877609	N19,G30	Gerbang Tol Ramp Taman Mini 2
G30	-6.266078	106.872648	G29,G31	Gerbang Tol Cililitan Utama 2
G31	-6.265511	106.873072	N18,G30	Gerbang Tol Cililitan 3
G32	-6.243292	106.859795	N18,G33	Gerbang Tol Cawang
G33	-6.243140	106.849732	N22,G32	Gerbang Tol Tebet 2
G34	-6.240847	106.835184	N22,G35	Gerbang Toll Kuningan 2
G35	-6.234094	106.822939	G34,G36	Gerbang Toll Kuningan 1
G36	-6.215029	106.809246	N25,G35	Toll Gate Senayan
G37	-6.206718	106.802808	N25,N30	Gerbang Tol Pejompongan
G38	-6.181616	106.793533	N29,G65	Gerbang Tol Tomang
G39	-6.173250	106.790322	N29,G40	Gerbang Tol Tanjung Duren
G40	-6.157701	106.791898	G39,G41	Gerbang Tol Jalambar 1
G41	-6.156464	106.792917	N28,G40	Gerbang Tol Jalambar 2
G42	-6.140533	106.787283	N27,N28	Gerbang Tol Angke 1
G43	-6.131935	106.804365	N27,G44	Pintu Tol Gedong Panjang 1
G44	-6.131445	106.824993	N24,G43	West Ancol Toll Plaza
G45	-6.130840	106.846158	N24,G46	Kemayoran Toll Plaza
G46	-6.130839	106.846158	G45,G47	Gerbang Tol Kemayoran
G47	-6.125745	106.851062	N21,G46	Ancol Timur Toll Booth
G48	-6.125993	106.777624	N27,G49	Gerbang Tol Pluit
G49	-6.121528	106.769567	N36,G48	Gerbang Tol Kpuk Utama

G50	-6.118969	106.735106	N36,G51	Gerbang Tol Kamal 1
G51	-6.115576	106.734256	N46,G50	Toll Gate Kamal 2
G52	-6.116075	106.734036	N46,N52	Gerbang Tol Kamal 3
G53	-6.105149	106.697697	N52,G54	Gerbang Tol Cengkareng 2
G54	-6.105673	106.696504	G53,G55	Cengkareng Toll Plaza
G55	-6.109461	106.691479	G54,N56	Benda Toll Plaza
G56	-6.117668	106.734186	N46,N47	Gerbang Tol Kamal 4
G57	-6.152014	106.727357	N47,G58	Gerbang Tol Rawa Buaya Utara
G58	-6.152367	106.727458	N48,G57	Jlb Rawa Buaya Utara
G59	-6.181531	106.729009	N48,G60	Gerbang Tol Kembangan Utara
G60	-6.189948	106.730247	N49,G59	Gerbang Tol Kembangan Selatan 1
G61	-6.192836	106.733151	N49,G62	Toll Gate North Meruya 3
G62	-6.191175	106.744127	G61,G63	Meruya 2 Toll Booth
G63	-6.191623	106.744304	N37,G62	Meruya 1 Toll Booth
G64	-6.189707	106.768034	N37,G65	Gerbang Tol Kebon Jeruk 2
G65	-6.190269	106.767975	G38,G64	Gerbang Tol Kebon Jeruk
G66	-6.204123	106.737292	N49,N50	Gerbang Tol Meruya Selatan 2
G67	-6.208690	106.740176	N50,G68	Gerbang Tol Meruya Selatan 1
G68	-6.216384	106.744044	G67,G69	Gerbang Tol Joglo 2
G69	-6.221203	106.747106	G68,G70	Gerbang Tol Joglo 1
G70	-6.221976	106.747720	N38,G69	Gerbang Tol Joglo 3
G71	-6.232589	106.754164	N38,G72	Gerbang Tol Cileduk 4
G72	-6.240350	106.758600	N39,G71	Toll Gate Cileduk 3
G73	-6.259623	106.765860	N39,G74	Gerbang Tol Veteran 2
G74	-6.261482	106.767118	G73,G75	Veteran Toll Gate 1 Bintaro
G75	-6.276815	106.768235	N40,G74	Gerbang Tol Ciputat 2
G76	-6.284104	106.774586	N33,N40	Ciputat Toll Gate

G77	-6.292142	106.798368	N34,N35	Gerbang Toll Fatmawati 1
G78	-6.292496	106.819165	N26,N35	Gerbang Tol Ampera 1
G79	-6.301246	106.835469	N23,N26	Toll Gate Lenteng Agung 2
G80	-6.305700	106.861857	N23,G81	Toll Gate Gedong 2
G81	-6.308102	106.868831	N20,G80	Toll Gate Gedong 1
G82	-6.283659	106.734728	N51,N54	Gerbang Tol Pondok Ranji
G83	-6.289328	106.726146	N54,N55	Gerbang Tol Pondok Aren 1
G84	-6.194056	106.731338	N49,N53	Toll Gate North Meruya 4
G85	-6.203977	106.704064	N53,N57	Gerbang Tol Karang Tengah Barat 1
G86	-6.218161	106.667949	N57,N58	Alam Sutra Access Road
G87	-6.217371	106.668014	N58,G88	Kinciran Toll Plaza 2
G88	-6.302349	106.700484	G87,G89	Gerbang Tol Serpong 2
G89	-6.224784	106.616517	G88,N63	Toll Gate Karawaci 2
G90	-6.205512	106.525539	N65,N64	Gerbang Tol Cikupa
G91	-5.973005	106.008631	N72	Gerbang Tol Merak

### Lampiran 3 Data Tarif

Koneksi	Golongan 1	Golongan 2	Golongan 3	Golongan 4	Golongan 5
G1-G2	11000	13000	15000	17000	19000
G1-G4	14000	16000	18000	20000	22000
G1-G24	17000	19000	21000	23000	25000
G2-G3	5000	7000	9000	11000	13000
G2-G4	7000	9000	11000	13000	15000
G2-G24	7000	9000	11000	13000	15000
G4-G5	7000	9000	11000	13000	15000
G4-G24	11000	13000	15000	17000	19000
G5-G6	11000	13000	15000	17000	19000
G6-G7	11000	13000	15000	17000	19000
G7-G8	11000	13000	15000	17000	19000
G8-G9	7000	9000	11000	13000	15000
G9-G10	8000	10000	12000	14000	16000

G10-G11	10000	12000	14000	16000	18000
G11-G12	10000	12000	14000	16000	18000
G11-G47	14000	16000	18000	20000	22000
G12-G13	14000	16000	18000	20000	22000
G13-G14	16000	18000	20000	22000	24000
G14-G15	8000	10000	12000	14000	16000
G15-G16	7000	9000	11000	13000	15000
G16-G17	7000	9000	11000	13000	15000
G17-G18	5000	7000	9000	11000	13000
G18-G19	11000	13000	15000	17000	19000
G18-G32	11000	13000	15000	17000	19000
G18-G31	15000	17000	19000	21000	23000
G19-G20	5000	7000	9000	11000	13000
G19-G31	11000	13000	15000	17000	19000
G19-G32	11000	13000	15000	17000	19000
G20-G21	15000	17000	19000	21000	23000
G21-G22	5000	7000	9000	11000	13000
G22-G23	11000	13000	15000	17000	19000
G23-G3	10000	12000	14000	16000	18000
G24-G25	20000	22000	24000	26000	28000
G25-G26	13000	15000	17000	19000	21000
G25-G81	14000	16000	18000	20000	22000
G26-G27	5000	7000	9000	11000	13000
G27-G28	5000	7000	9000	11000	13000
G28-G29	10000	12000	14000	16000	18000
G29-G30	8000	10000	12000	14000	16000
G30-G31	5000	7000	9000	11000	13000
G31-G32	10000	12000	14000	16000	18000
G32-G33	5000	7000	9000	11000	13000
G33-G34	10000	12000	14000	16000	18000
G34-G35	5000	7000	9000	11000	13000
G35-G36	11000	13000	15000	17000	19000
G36-G37	15000	17000	19000	21000	23000
G37-G38	15000	17000	19000	21000	23000
G37-G76	30000	32000	34000	36000	38000
G37-G77	35000	37000	39000	41000	43000
G38-G39	8000	10000	12000	14000	16000
G38-G65	10000	12000	14000	16000	18000
G39-G40	8000	10000	12000	14000	16000
G40-G41	5000	7000	9000	11000	13000

G41-G42	10000	12000	14000	16000	18000
G42-G43	11000	13000	15000	17000	19000
G42-G48	8000	10000	12000	14000	16000
G43-G44	10000	12000	14000	16000	18000
G43-G48	10000	12000	14000	16000	18000
G44-G45	10000	12000	14000	16000	18000
G45-G46	5000	7000	9000	11000	13000
G46-G47	8000	10000	12000	14000	16000
G48-G49	7000	9000	11000	13000	15000
G49-G50	11000	13000	15000	17000	19000
G50-G51	5000	7000	9000	11000	13000
G51-G52	7000	9000	11000	13000	15000
G51-G56	7000	9000	11000	13000	15000
G52-G53	11000	13000	15000	17000	19000
G52-G56	8000	10000	12000	14000	16000
G53-G54	5000	7000	9000	11000	13000
G54-G55	10000	12000	14000	16000	18000
G56-G57	11000	13000	15000	17000	19000
G57-G58	8000	10000	12000	14000	16000
G58-G59	8000	10000	12000	14000	16000
G59-G60	8000	10000	12000	14000	16000
G60-G61	7000	9000	11000	13000	15000
G60-G66	10000	12000	14000	16000	18000
G60-G84	7000	9000	11000	13000	15000
G61-G62	11000	13000	15000	17000	19000
G61-G66	10000	12000	14000	16000	18000
G61-G84	8000	10000	12000	14000	16000
G62-G63	5000	7000	9000	11000	13000
G63-G64	10000	12000	14000	16000	18000
G64-G65	5000	7000	9000	11000	13000
G66-G67	10000	12000	14000	16000	18000
G66-G84	8000	10000	12000	14000	16000
G67-G68	8000	10000	12000	14000	16000
G68-G69	7000	9000	11000	13000	15000
G69-G70	5000	7000	9000	11000	13000
G70-G71	11000	13000	15000	17000	19000
G71-G72	8000	10000	12000	14000	16000
G72-G73	11000	13000	15000	17000	19000
G72-G82	17000	19000	21000	23000	25000
G73-G74	8000	10000	12000	14000	16000



G74-G75	8000	10000	12000	14000	16000
G75-G76	10000	12000	14000	16000	18000
G76-G77	15000	17000	19000	21000	23000
G77-G78	15000	17000	19000	21000	23000
G78-G79	10000	12000	14000	16000	18000
G79-G80	10000	12000	14000	16000	18000
G80-G81	7000	9000	11000	13000	15000
G81-G26	10000	12000	14000	16000	18000
G82-G83	15000	17000	19000	21000	23000
G82-G73	20000	22000	24000	26000	28000
G84-G85	17000	19000	21000	23000	25000
G85-G86	15000	17000	19000	21000	23000
G86-G87	8000	10000	12000	14000	16000
G87-G88	11000	13000	15000	17000	19000
G88-G89	11000	13000	15000	17000	19000