

DAFTAR ISI

LEMBAR PERNYATAAN ORISINALITAS	ii
LEMBAR PENGESAHAN	iii
ABSTRAK	iv
ABSTRACT	vi
KATA PENGANTAR	vii
UCAPAN TERIMA KASIH	viii
BAB I	1
PENDAHULUAN	1
1.1 Latar Belakang.....	1
1.2 Rumusan Masalah.....	2
1.3 Tujuan.....	3
1.4 Batasan Masalah	3
1.5 Metode Penelitian.....	3
BAB II	5
KONSEP DASAR	5
2.1 Internet of Things.....	5
2.2 Global Positioning System (GPS)	7
2.3 Google Maps API.....	8
2.4 NodeMCU.....	8
2.5 Arduino IDE	9
2.6 Modul GPS.....	10
2.7 Visual Studio Code	11
2.8 Laravel	12
2.9 PHP.....	13
2.10 Javascript.....	14
2.11 HTML.....	15
2.12 CSS.....	16
2.13 XAMPP.....	17
2.14 <i>Firestore Real Time Data Base</i>	18
2.15 Google Cloud Platform	19
2.16 <i>Model-View-Controller (MVC)</i>	20
2.17 <i>Infrastructure as a Service (IaaS)</i>	22
2.18 <i>Group Inclusive Tour (GIT)</i>	23

2.19	<i>Containerisation</i>	25
2.20	<i>Docker</i>	26
2.21	<i>Virtual Machine Instances</i>	27
2.22	<i>Compute Engine API</i>	28
2.23	OS Linux	29
2.24	Ubuntu	30
2.25	<i>NginX</i>	31
2.26	<i>Unified Modeling Language (UML)</i>	33
2.27	<i>Activity Diagram</i>	34
2.28	Visual Paradigm Online	35
2.29	Wireshark	35
BAB III		36
KONSEP DASAR		36
3.1	<i>Flowchart</i>	36
3.2	Desain Sistem	36
3.3	Skenario Perancangan GPS	37
3.2.1	NodeMCU ESP32	38
3.2.2	Modul GPS	38
3.4	Skenario Perancangan Aplikasi	39
3.5	Desain Database	39
3.6	Pemodelan Dengan Activity Diagram	40
3.3.1	Activity Diagram Login	40
3.3.2	Activity Diagram Cek Data Kendaraan	41
6.3.3	Activity Diagram Cek Lokasi Kendaraan	42
3.7	Desain Aplikasi	43
3.8	Perancangan Deployment	44
3.9	Perancangan <i>Virtual Machine</i>	44
3.10	Skenario Pengujian Alat	46
3.11	Skenario Pengujian Aplikasi	47
6.8.1	Pengujian Functional Suitability	47
3.8.2	Pengujian <i>Responsive Layout</i>	47
3.8.3	Skenario Pengujian <i>Response Time</i>	48
BAB IV		49
HASIL PENGUJIAN DAN ANALISIS		49
4.1	Implementasi Sistem	49

4.2	Pengujian Aplikasi	50
4.2.1	Hasil Pengujian Functional Suitability.....	50
4.2.2	Hasil Pengujian <i>Responsive Layout</i>	50
4.2.3	Hasil Pengujian <i>Resnponse Time</i>	53
4.3	Throughput	54
4.4	Hasil <i>Deployment</i>	55
4.5	Hasil Pengambilan Data Lokasi.....	55
KESIMPULAN DAN SARAN		56
5.1	Kesimpulan.....	56
5.2	Saran	56
DAFTAR PUSTAKA		58
LAMPIRAN		61