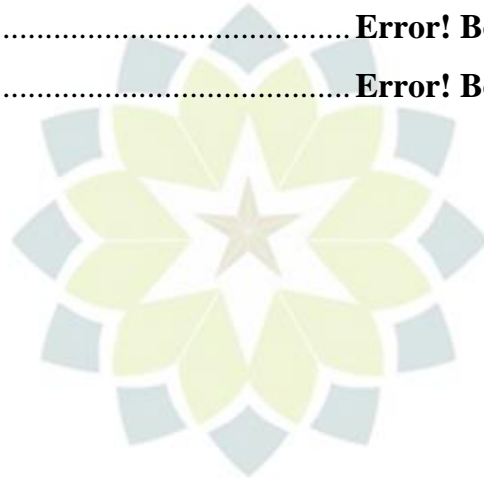


## DAFTAR ISI

LEMBAR PENGESAHAN .....	<b>Error! Bookmark not defined.</b>
PERNYATAAN .....	<b>Error! Bookmark not defined.</b>
ABSTRAK.....	<b>Error! Bookmark not defined.</b>
ABSTRACT.....	<b>Error! Bookmark not defined.</b>
KATA PENGANTAR .....	<b>Error! Bookmark not defined.</b>
DAFTAR ISI.....	1
DAFTAR GAMBAR.....	4
DAFTAR TABEL.....	7
BAB I PENDAHULUAN.....	<b>Error! Bookmark not defined.</b>
1.1. Latar Belakang .....	<b>Error! Bookmark not defined.</b>
1.2. Rumusan Masalah .....	<b>Error! Bookmark not defined.</b>
1.3. Tujuan.....	<b>Error! Bookmark not defined.</b>
1.4. Batasan Masalah.....	<b>Error! Bookmark not defined.</b>
1.5. Kerangka Pemikiran.....	<b>Error! Bookmark not defined.</b>
1.6. State of The Art .....	<b>Error! Bookmark not defined.</b>
1.7. Sistematika Penulisan.....	<b>Error! Bookmark not defined.</b>
BAB II TINJAUAN PUSTAKA .....	<b>Error! Bookmark not defined.</b>
2.1. <i>Data logger</i> .....	<b>Error! Bookmark not defined.</b>
2.1.1. Bagian dan Fungsi.....	<b>Error! Bookmark not defined.</b>
2.2. Radar .....	<b>Error! Bookmark not defined.</b>
2.2.1 Fungsi Radar Kapal.....	<b>Error! Bookmark not defined.</b>
2.2.2 Bagian - Bagian Radar Kapal .....	<b>Error! Bookmark not defined.</b>
2.3. <i>Object Oriented Programming</i> (OOP)...	<b>Error! Bookmark not defined.</b>
2.4. Mikrokontroler .....	<b>Error! Bookmark not defined.</b>
2.4.1. Mengenal Arduino .....	<b>Error! Bookmark not defined.</b>
2.4.2. Jenis-Jenis Papan Arduino .....	<b>Error! Bookmark not defined.</b>
2.5. Standar NMEA.....	<b>Error! Bookmark not defined.</b>
2.6. MATLAB .....	<b>Error! Bookmark not defined.</b>

2.7	ISIS Proteus.....	<b>Error! Bookmark not defined.</b>
2.8	<i>Unified Modeling Language</i> (UML).....	<b>Error! Bookmark not defined.</b>
2.8.1	Definisi UML.....	<b>Error! Bookmark not defined.</b>
2.8.2	Langkah-langkah penggunaan UML .....	<b>Error! Bookmark not defined.</b>
	<b>defined.</b>	
2.8.3	Ruang Lingkup UML.....	<b>Error! Bookmark not defined.</b>
2.9	Konsep Dasar Sistem Informasi.....	<b>Error! Bookmark not defined.</b>
2.9.1	Definisi Sistem Informasi .....	<b>Error! Bookmark not defined.</b>
2.9.2.	Komponen Sistem Informasi .....	<b>Error! Bookmark not defined.</b>
BAB III METODOLOGI PENELITIAN .....		<b>Error! Bookmark not defined.</b>
3.1.	Studi Literatur .....	<b>Error! Bookmark not defined.</b>
3.2.	Identifikasi Masalah .....	<b>Error! Bookmark not defined.</b>
3.3.	Analisis Kebutuhan .....	<b>Error! Bookmark not defined.</b>
3.4.	Perancangan dan Simulasi.....	<b>Error! Bookmark not defined.</b>
3.5.	Implementasi .....	<b>Error! Bookmark not defined.</b>
3.6.	Pengujian Sistem.....	<b>Error! Bookmark not defined.</b>
3.7.	Analisis Hasil .....	<b>Error! Bookmark not defined.</b>
BAB IV PERANCANGAN DAN SIMULASI ....		<b>Error! Bookmark not defined.</b>
4.1.	Alat dan Bahan .....	<b>Error! Bookmark not defined.</b>
4.2	Prosedur Perancangan .....	<b>Error! Bookmark not defined.</b>
4.2.1.	Perancangan <i>Hardware</i> .....	<b>Error! Bookmark not defined.</b>
4.2.2.	Perancangan <i>Software</i> .....	<b>Error! Bookmark not defined.</b>
4.3	Simulasi.....	<b>Error! Bookmark not defined.</b>
BAB V IMPLEMENTASI.....		<b>Error! Bookmark not defined.</b>
5.1	Implementasi <i>Data logger</i> .....	<b>Error! Bookmark not defined.</b>
5.2	Implementasi IDE Arduino .....	<b>Error! Bookmark not defined.</b>
5.2.1	Menulis Program.....	<b>Error! Bookmark not defined.</b>
5.2.2	Kompilasi Program .....	<b>Error! Bookmark not defined.</b>
5.2.3	Proses <i>Uploading</i> .....	<b>Error! Bookmark not defined.</b>
5.3	Implementasi GUI ( <i>Graphical User Interface</i> ) MATLAB.....	<b>Error!</b>
	<b>Bookmark not defined.</b>	
BAB VI PENGUJIAN DAN ANALISIS .....		<b>Error! Bookmark not defined.</b>

6.1	Pengujian.....	<b>Error! Bookmark not defined.</b>
6.1.1	Pengujian <i>Hardware</i> .....	<b>Error! Bookmark not defined.</b>
6.1.2	Pengujian <i>Software</i> .....	<b>Error! Bookmark not defined.</b>
6.2	Analisis.....	<b>Error! Bookmark not defined.</b>
6.2.1	Analisis <i>Hardware</i> .....	<b>Error! Bookmark not defined.</b>
6.2.2	Analisis <i>Software</i> .....	<b>Error! Bookmark not defined.</b>
BAB VII PENUTUP.....		<b>Error! Bookmark not defined.</b>
7.1	Kesimpulan.....	<b>Error! Bookmark not defined.</b>
7.2	Saran.....	<b>Error! Bookmark not defined.</b>
DAFTAR PUSTAKA .....		<b>Error! Bookmark not defined.</b>
LAMPIRAN.....		<b>Error! Bookmark not defined.</b>



uin

UNIVERSITAS ISLAM NEGERI  
SUNAN GUNUNG DJATI  
BANDUNG

## DAFTAR GAMBAR

- Gambar 1. 1 Contoh Tampilan Data Radar GPS[21] .....**Error! Bookmark not defined.**
- Gambar 1. 2 Bagan perencanaan rancangan *data logger* ....**Error! Bookmark not defined.**
- Gambar 1. 3 Skema Sistem Kerja ..... **Error! Bookmark not defined.**
- Gambar 1. 4 *State of The Art* ..... **Error! Bookmark not defined.**
- Gambar 2. 1 Perangkat *Data logger*[21]..... **Error! Bookmark not defined.**
- Gambar 2. 2 Diagram Blok *Data logger*[21]..... **Error! Bookmark not defined.**
- Gambar 2. 3 SDI-12 Sensor *Connection*[21]..... **Error! Bookmark not defined.**
- Gambar 2. 4 Berbagai macam *memory card* untuk *data logger*[21] .....**Error! Bookmark not defined.**
- Gambar 2. 5 *Data logger* dengan *eksternal memory*[21] ....**Error! Bookmark not defined.**
- Gambar 2. 6 Komunikasi *data logger* menggunakan *Telemetry/Radio*[21] **Error! Bookmark not defined.**
- Gambar 2. 7 Berbagai macam pelindung *data logger* [21] .**Error! Bookmark not defined.**
- Gambar 2. 8 Berbagai macam *software* untuk *data logger*[21]. **Error! Bookmark not defined.**
- Gambar 2. 9 Tampilan awal IDE Arduino1.0.5 r2 **Error! Bookmark not defined.**
- Gambar 2. 10 *Hardware* Arduino UNO ..... **Error! Bookmark not defined.**
- Gambar 2. 11 Tampilan awal MATLAB R2011b **Error! Bookmark not defined.**
- Gambar 2. 12 Tampilan awal Proteus Profesional 7.....**Error! Bookmark not defined.**
- Gambar 3. 1 Flowchart Perancangan *Data logger* **Error! Bookmark not defined.**
- Gambar 3. 2 Bagan Perancangan *Hardware Data logger* ...**Error! Bookmark not defined.**

- Gambar 3. 3 *Flowchart* cara kerja *software* untuk *data logger*. **Error! Bookmark not defined.**
- Gambar 3. 4 *Flowchart* perancangan *hardware* untuk *data logger*.....**Error! Bookmark not defined.**
- Gambar 4. 1 Bagan perancangan *Hardware Data logger* ...**Error! Bookmark not defined.**
- Gambar 4. 2 Rancangan sistem minimum mikrokontroler menggunakan ISIS ..... **Error! Bookmark not defined.**
- Gambar 4. 3 Rancangan Mikrokontroler ATmega328 .....**Error! Bookmark not defined.**
- Gambar 4. 4 Rancangan sistem minimum untuk data sensor radar (a) Menggunakan IC 7408. (b) Menggunakan IC 7432.....**Error! Bookmark not defined.**
- Gambar 4. 5 *Flowchart* cara kerja *software* untuk *data logger*. **Error! Bookmark not defined.**
- Gambar 4. 6 Algoritma sensor GPS..... **Error! Bookmark not defined.**
- Gambar 4. 7 Algoritma sensor *Compass* ..... **Error! Bookmark not defined.**
- Gambar 4. 8 Algoritma sensor *Echosounder* ..... **Error! Bookmark not defined.**
- Gambar 4. 9 Algoritma sensor *Velocity*..... **Error! Bookmark not defined.**
- Gambar 4. 10 Algoritma sensor *Windspeed* ..... **Error! Bookmark not defined.**
- Gambar 4. 11 Algoritma MATLAB sebagai GUI untuk *data logger*.....**Error! Bookmark not defined.**
- Gambar 4. 12 Desain aplikasi penampil *data logger*.....**Error! Bookmark not defined.**
- Gambar 4. 13 *Use case diagram* aplikasi penampil *data logger***Error! Bookmark not defined.**
- Gambar 4. 14 *Activity diagram* aplikasi penampil *data logger*. **Error! Bookmark not defined.**
- Gambar 4. 15 *Sequence diagram* login..... **Error! Bookmark not defined.**
- Gambar 4. 16 Simulasi data sensor GPS ..... **Error! Bookmark not defined.**
- Gambar 4. 17 Simulasi data sensor *Gyro/Compass*.....**Error! Bookmark not defined.**

Gambar 4. 18 Simulasi data sensor *Echosounder*. **Error! Bookmark not defined.**

Gambar 4. 19 Simulasi data sensor *Velocity*..... **Error! Bookmark not defined.**

Gambar 4. 20 Simulasi data sensor *Windspeed* .... **Error! Bookmark not defined.**

Gambar 5. 1 Papan rangkaian Arduino Duemilanove w/ATmega328 .....**Error! Bookmark not defined.**

**Bookmark not defined.**

Gambar 5. 2 Papan rangkaian IC 7408+7432 ..... **Error! Bookmark not defined.**

Gambar 5. 3 USB to TTL ..... **Error! Bookmark not defined.**

Gambar 5. 4 NemaTalker..... **Error! Bookmark not defined.**

Gambar 5. 5 Tampilan data sensor radar pada NemaTalker **Error! Bookmark not defined.**

**defined.**

Gambar 5. 6 Virtual Serial Ports..... **Error! Bookmark not defined.**

Gambar 5. 7 HyperTerminal ..... **Error! Bookmark not defined.**

Gambar 5. 8 Data Sensor radar GPS..... **Error! Bookmark not defined.**

Gambar 5. 9 Data sensor radar pada IDE Arduino **Error! Bookmark not defined.**

Gambar 5. 10 *Pseudo code* program data sensor radar.....**Error! Bookmark not defined.**

**defined.**

Gambar 5. 11 *Sketch* program Arduino ..... **Error! Bookmark not defined.**

Gambar 5. 12 Notifikasi program yang sudah dikompilasi .**Error! Bookmark not defined.**

**defined.**

Gambar 5. 13 Menentukan *board* Arduino..... **Error! Bookmark not defined.**

Gambar 5. 14 *Done Uploading*..... **Error! Bookmark not defined.**

Gambar 5. 15 Serial Monitor ..... **Error! Bookmark not defined.**

Gambar 5. 16 Mengecek program yang sudah di-uploading..... **Error! Bookmark not defined.**

**not defined.**

Gambar 5. 17 *Icon* GUIDE pada MATLAB 2011 **Error! Bookmark not defined.**

Gambar 5. 18 Memanggil *blank project* GUI MATLAB 2011 . **Error! Bookmark not defined.**

**not defined.**

Gambar 5. 19 Proses membuat GUI pada MATLAB 2011 .**Error! Bookmark not defined.**

**defined.**

Gambar 5. 20 Potongan program GUI MATLAB **Error! Bookmark not defined.**

Gambar 5. 21 *Form* penampil data sensor ..... **Error! Bookmark not defined.**

Gambar 6. 1 *Data logger* ATmega328 ..... **Error! Bookmark not defined.**

Gambar 6. 2 Pengaturan *port* pada aplikasi NemaTalker ..**Error! Bookmark not defined.**

Gambar 6. 3 Pengaturan *port* pada aplikasi HyperTerminal ..... **Error! Bookmark not defined.**

Gambar 6. 4 *Menu bar* pada aplikasi NemaTalker .....**Error! Bookmark not defined.**

Gambar 6. 5 Tampilan data sensor radar pada NemaTalker**Error! Bookmark not defined.**

Gambar 6. 6 Tampilan data radar pada HyperTerminal .....**Error! Bookmark not defined.**

Gambar 6. 7 *Form* penampil data sensor radar..... **Error! Bookmark not defined.**

Gambar 6. 8 *Datasheet* IC 7408 ..... **Error! Bookmark not defined.**

Gambar 6. 9 Ilustrasi *switch data* masing-masing sensor radar. **Error! Bookmark not defined.**

Gambar 6. 10 Gerbang Logika AND dan OR..... **Error! Bookmark not defined.**

Gambar 6. 11 *Flowchart switching* data sensor radar.....**Error! Bookmark not defined.**

## DAFTAR TABEL

- Tabel 2. 1 Deskripsi data GPGGA..... **Error! Bookmark not defined.**
- Tabel 4. 1 Komponen-komponen Arduino Duemilanove w/ATmega328.....**Error! Bookmark not defined.**
- Tabel 4. 2 Komponen-komponen yang terdapat pada sistem minimum mikrokontroler data sensor radar ..... **Error! Bookmark not defined.**
- Tabel 4. 3 Pin yang digunakan pada IC 7408, IC 7432 dan ATmega328 .....**Error! Bookmark not defined.**
- Tabel 4. 4 Skenario *use case login*..... **Error! Bookmark not defined.**
- Tabel 4. 5 Skenario *use case entry data* ..... **Error! Bookmark not defined.**
- Tabel 4. 6 Skenario *use case view* ..... **Error! Bookmark not defined.**
- Tabel 6. 1 Pengujian tombol masuk dan tutup..... **Error! Bookmark not defined.**
- Tabel 6. 2 Pengujian tombol tanda masuknya data.....**Error! Bookmark not defined.**
- Tabel 6. 3 Pengujian pemantauan tampilnya data sensor ....**Error! Bookmark not defined.**
- Tabel 6. 4 Tabel Kebenaran..... **Error! Bookmark not defined.**
- Tabel 6. 5 Karakter data sensor radar ..... **Error! Bookmark not defined.**
- Tabel 6. 6 Karakter instrumen data sensor radar .. **Error! Bookmark not defined.**
- Tabel 6. 7 *Property inspector GUI MATLAB* ..... **Error! Bookmark not defined.**