

DAFTAR ISI

| | |
|--------------------------------------|-------|
| JUDUL (LUAR) | i |
| JUDUL (DALAM) | ii |
| LEMBAR PERNYATAAN GELAR | iii |
| LEMBAR PERSETUJUAN PEMBIMBING | iv |
| LEMBAR PENGESAHAN PENGUJI | v |
| SURAT PERNYATAAN ORISINALITAS | vii |
| ABSTRAK | viii |
| ABSTRACT | ix |
| KATA PENGANTAR | x |
| DAFTAR ISI | xiii |
| DAFTAR GAMBAR | xvii |
| DAFTAR TABEL | xviii |

BAB 1 PENDAHULUAN

| | | |
|-------|-----------------|---|
| 1.1 | Latar Belakang | 1 |
| 1.2 | Batasan Masalah | 4 |
| 1.3 | Rumusan Masalah | 5 |
| 1.4 | Tujuan | 6 |
| 1.4.1 | Tujuan Umum | 6 |
| 1.4.2 | Tujuan Khusus | 6 |
| 1.5 | Manfaat | 6 |

| | | |
|-------|------------------|---|
| 1.5.1 | Manfaat Teoritis | 6 |
| 1.5.2 | Manfaat Praktis | 7 |

BAB 2 TINJAUAN PUSTAKA

| | | |
|--------|------------------|----|
| 2.1 | Studi Literatur | 9 |
| 2.2 | Teori Pendukung | 10 |
| 2.2.1 | Pernapasan | 10 |
| 2.2.2 | Apnea | 12 |
| 2.2.3 | Saturasi Oksigen | 14 |
| 2.2.4 | Denyut Jantung | 16 |
| 2.2.5 | Pulse Oximetry | 17 |
| 2.2.6 | MAX30102 | 18 |
| 2.2.7 | ESP32 | 19 |
| 2.2.8 | LCD Nextion | 20 |
| 2.2.9 | Dinamo Motor DC | 21 |
| 2.2.10 | MIT APP | 22 |

BAB 3 METODOLOGI

| | | |
|-----|----------------------|----|
| 3.1 | Rancangan Penelitian | 23 |
| 3.2 | Diagram Blok | 24 |
| 3.3 | Diagram Alir | 25 |
| 3.4 | Diagram Mekanis Alat | 27 |
| 3.5 | Alat dan Bahan | 27 |

| | | |
|-------|-------------------------------|----|
| 3.5.1 | Alat | 27 |
| 3.5.2 | Bahan | 28 |
| 3.6 | Variabel Penelitian | 28 |
| 3.6.1 | Variabel Bebas | 28 |
| 3.6.2 | Variabel Terikat | 28 |
| 3.6.3 | Variabel Kontrol | 28 |
| 3.7 | Definisi Operasional Variabel | 28 |
| 3.8 | Teknik Analisis Data | 29 |
| 3.8.1 | Rata-Rata | 30 |
| 3.8.2 | <i>Error (%)</i> | 30 |
| 3.8.3 | Standar Deviasi | 30 |
| 3.9 | Urutan Kegiatan | 31 |
| 3.10 | Waktu dan Tempat Penelitian | 32 |

BAB 4 HASIL PENGUKURAN DAN ANALISIS

| | | |
|-----|--|----|
| 4.1 | Hasil Pendataan Terhadap Responden | 35 |
| 4.2 | Hasil Pengujian Deteksi Sleep Apnea | 38 |
| 4.3 | Hasil Data Pada Aplikasi MIT APP | 41 |
| 4.4 | Hasil Data Pengujian Jarak Pengiriman | 42 |
| 4.5 | Hasil Perancangan | 42 |

BAB 5 PEMBAHASAN

| | | |
|-----|--------------------------------|----|
| 5.1 | Rangkaian | 45 |
| 5.2 | Program Arduino | 47 |
| 5.3 | Hasil Pengujian | 60 |
| 5.4 | Keterbatasan Sistem | 62 |
| 5.5 | Perbandingan dengan Penelitian | 63 |
| | Sejenis | |
| 5.6 | Implikasi Terwujudnya Sistem | 65 |
| 5.7 | Kinerja Sistem Keseluruhan | 66 |

BAB 6 PENUTUP

| | | |
|-----|------------|----|
| 6.1 | Kesimpulan | 71 |
| 6.2 | Saran | 72 |

| | |
|-----------------------|----|
| DAFTAR PUSTAKA | 73 |
|-----------------------|----|

| | |
|-----------------|----|
| LAMPIRAN | 79 |
|-----------------|----|