

## Daftar Isi

|                                                   |      |
|---------------------------------------------------|------|
| Abstrak.....                                      | ii   |
| Abstract.....                                     | iii  |
| LEMBAR PENGESAHAN .....                           | iv   |
| LEMBAR PERNYATAAN ORISINALITAS.....               | v    |
| Kata Pengantar.....                               | vi   |
| Daftar Isi .....                                  | vii  |
| Daftar Tabel.....                                 | x    |
| Daftar Gambar .....                               | xi   |
| Daftar Lampiran.....                              | xiii |
| BAB I PENDAHULUAN.....                            | 1    |
| I.1    Latar Belakang .....                       | 1    |
| I.2    Perumusan Masalah .....                    | 2    |
| I.3    Tujuan Penelitian .....                    | 3    |
| I.4    Manfaat Penelitian .....                   | 3    |
| I.5    Batasan Masalah .....                      | 3    |
| I.6    Sistematika Laporan.....                   | 4    |
| BAB II TINJAUAN PUSTAKA.....                      | 6    |
| II.1    Literatur.....                            | 6    |
| II.1.1 <i>Outcome-Based Education (OBE)</i> ..... | 6    |
| II.1.2 <i>Software Engineering</i> .....          | 7    |
| II.1.3 <i>Web Architecture</i> .....              | 12   |
| II.1.4 <i>Unified Modeling Language</i> .....     | 13   |
| II.1.5 <i>Back-end Development</i> .....          | 14   |
| II.1.6 <i>Dashboard</i> .....                     | 15   |
| II.1.7 <i>Black Box Testing</i> .....             | 15   |

|                                        |                                                               |    |
|----------------------------------------|---------------------------------------------------------------|----|
| II.1.8                                 | Penelitian Terdahulu .....                                    | 17 |
| II.2                                   | Pemilihan Metode .....                                        | 19 |
| BAB III METODOLOGI PENELITIAN .....    |                                                               | 21 |
| III.1                                  | Model Konseptual .....                                        | 21 |
| III.2                                  | Sistematika Penyelesaian Masalah .....                        | 22 |
| III.3                                  | Metode Evaluasi.....                                          | 24 |
| BAB IV PENYELESAIAN PERMASALAHAN ..... |                                                               | 25 |
| IV.1                                   | Pengumpulan Data dan Analisis Data.....                       | 25 |
| IV.2                                   | Perancangan Sistem .....                                      | 34 |
| IV.2.1                                 | Kebutuhan Sistem .....                                        | 34 |
| IV.2.2                                 | <i>Flowchart Website</i> .....                                | 35 |
| IV.2.3                                 | <i>Use Case Diagram</i> .....                                 | 38 |
| IV.2.4                                 | <i>Class Diagram</i> .....                                    | 40 |
| IV.2.5                                 | <i>Sequence Diagram</i> .....                                 | 42 |
| IV.2.5.1                               | <i>Sequence Diagram Login</i> .....                           | 43 |
| IV.2.5.2                               | <i>Sequence Diagram Create Data PEO</i> .....                 | 43 |
| IV.2.5.3                               | <i>Sequence Diagram Create Data Kurikulum</i> .....           | 44 |
| IV.2.5.4                               | <i>Sequence Diagram Import Data PLO</i> .....                 | 45 |
| IV.2.5.5                               | <i>Sequence Diagram Create Data Mapping PEO PLO</i> .....     | 46 |
| IV.2.5.6                               | <i>Sequence Diagram Import Data MK</i> .....                  | 47 |
| IV.2.5.7                               | <i>Sequence Diagram Import Data CLO</i> .....                 | 48 |
| IV.2.5.8                               | <i>Sequence Diagram Import Data Assessment Question</i> ..... | 49 |
| IV.2.5.9                               | <i>Sequence Diagram Import Data Angkatan</i> .....            | 50 |
| IV.2.5.10                              | <i>Sequence Diagram Import Data Mahasiswa</i> .....           | 51 |
| IV.2.5.11                              | <i>Sequence Diagram Import Data Nilai</i> .....               | 52 |
| IV.2.5.12                              | <i>Sequence Diagram Kalkulasi Nilai CLO</i> .....             | 53 |
| IV.2.5.13                              | <i>Sequence Diagram Kalkulasi Nilai PLO MK</i> .....          | 54 |

|                |                                                   |    |
|----------------|---------------------------------------------------|----|
| IV.2.5.14      | <i>Sequence Diagram Kalkulasi Nilai PLO</i> ..... | 56 |
| IV.2.5.15      | <i>Sequence Diagram Generate SKCP</i> .....       | 57 |
| IV.2.5.16      | <i>Sequence Diagram Grafik Kelulusan</i> .....    | 58 |
| IV.2.5.17      | <i>Sequence Diagram Laporan Mahasiswa</i> .....   | 59 |
| IV.2.5.18      | <i>Sequence Diagram Melihat Data</i> .....        | 60 |
| IV.2.6         | <i>Component Diagram</i> .....                    | 60 |
| IV.2.7         | <i>Deployment Diagram</i> .....                   | 62 |
| IV.3           | Pengembangan Sistem .....                         | 63 |
| IV.3.1         | Pengembangan <i>Create Data</i> .....             | 64 |
| IV.3.2         | Pengembangan <i>Import Data</i> .....             | 64 |
| IV.3.3         | Pengembangan Kalkulasi Nilai.....                 | 65 |
| IV.3.4         | Pengembangan <i>Generate SKCP</i> .....           | 71 |
| IV.3.5         | Pengembangan <i>Get Data</i> .....                | 73 |
| BAB V          | VALIDASI, ANALISIS HASIL, DAN IMPLIKASI.....      | 74 |
| V.1            | Pengujian Sistem.....                             | 74 |
| V.1.1          | Verifikasi .....                                  | 74 |
| V.1.2          | Validasi.....                                     | 79 |
| V.2            | Dampak Hasil Tugas Akhir .....                    | 80 |
| BAB VI         | KESIMPULAN DAN SARAN .....                        | 81 |
| VI.1           | Kesimpulan .....                                  | 81 |
| VI.2           | Saran .....                                       | 81 |
| DAFTAR PUSTAKA | .....                                             | 82 |
| LAMPIRAN       | .....                                             | 84 |