

## DAFTAR ISI

|                                                           |     |
|-----------------------------------------------------------|-----|
| LEMBAR PENGESAHAN.....                                    | I   |
| LEMBAR PERNYATAAN ORISINALITAS.....                       | II  |
| ABSTRAK .....                                             | III |
| ABSTRACT .....                                            | IV  |
| KATA PENGANTAR .....                                      | V   |
| DAFTAR ISI .....                                          | VII |
| DAFTAR TABLE .....                                        | XI  |
| DAFTAR GAMBAR .....                                       | XII |
| DAFTAR ISTILAH.....                                       | XIV |
| BAB I PENDAHULUAN.....                                    | 1   |
| I.1 LATAR BELAKANG .....                                  | 1   |
| I.2 RUMUSAN MASALAH .....                                 | 4   |
| I.3 TUJUAN PENELITIAN .....                               | 5   |
| I.4 BATASAN MASALAH .....                                 | 5   |
| I.5 MANFAAT PENELITIAN .....                              | 6   |
| <i>I.5.1 Manfaat untuk Guru/Pengajar dan Murid:</i> ..... | 6   |
| <i>I.5.2 Manfaat Untuk Sinau Yo:</i> .....                | 6   |
| I.6 SISTEMATIKA PENULISAN.....                            | 6   |
| BAB II LANDASAN TEORI.....                                | 8   |
| II.1 TEORI YANG RELEVAN DENGAN PENELITIAN .....           | 8   |
| <i>II.1.1 Business Model Canvas</i> .....                 | 8   |
| <i>II.1.2 Software Engineering</i> .....                  | 10  |
| <i>II.1.3 Web Application</i> .....                       | 10  |
| II.2 DEVELOPMENT TOOLS AND METHOD .....                   | 10  |
| <i>II.2.1 Iterative Incremental</i> .....                 | 10  |
| <i>II.2.2 Penelitian</i> .....                            | 11  |
| <i>II.2.3 Software Lifecycle Release</i> .....            | 12  |
| <i>II.2.4 Unified Modeling Language</i> .....             | 12  |

|                                                        |    |
|--------------------------------------------------------|----|
| <i>II.2.5 Preprocessing CSS .....</i>                  | 13 |
| <i>II.2.6 OOCSS.....</i>                               | 14 |
| <i>II.2.7 Laravel FrameWork 5.6.....</i>               | 14 |
| <i>II.2.8 Materialize .....</i>                        | 15 |
| <b>II.3 PERANGKAT KOLABORASI.....</b>                  | 15 |
| <i>II.3.1 Figma.....</i>                               | 15 |
| <b>II.4 PENGUJIAN APLIKASI .....</b>                   | 15 |
| <i>II.4.1 Stress Testing .....</i>                     | 15 |
| II.4.1.1 Apache Benchmark.....                         | 16 |
| <i>II.4.2 Cross Browser Compatibility Testing.....</i> | 16 |
| <b>II.5 PENELITIAN SEBELUMNYA.....</b>                 | 17 |
| <b>BAB III METODOLOGI PENELITIAN.....</b>              | 19 |
| <b>III.1 METODE KONSEPTUAL .....</b>                   | 19 |
| <b>III.2 SISTEMATIKA PENELITIAN .....</b>              | 20 |
| <i>III.2.1 Tahap Review .....</i>                      | 21 |
| <i>III.2.2 Tahap Koleksi Data.....</i>                 | 22 |
| <i>III.2.3 Tahap Analisis.....</i>                     | 22 |
| <i>III.2.4 Tahap Interpretasi .....</i>                | 23 |
| <b>BAB IV ANALISIS DAN PERANCANGAN .....</b>           | 24 |
| <b>IV.1 ANALISIS PERANCANGAN BISNIS .....</b>          | 24 |
| <i>IV.1.1 Analisis Bisnis Model.....</i>               | 24 |
| <i>IV.1.1.1 Key Partners.....</i>                      | 25 |
| <i>IV.1.1.2 Key Activities .....</i>                   | 25 |
| <i>IV.1.1.3 Key resource.....</i>                      | 25 |
| <i>IV.1.1.4 Value Proposition.....</i>                 | 26 |
| <i>IV.1.1.5 Customer Segments.....</i>                 | 26 |
| <i>IV.1.1.6 Customer Relations.....</i>                | 27 |
| <i>IV.1.1.7 Distribution channel .....</i>             | 27 |
| <i>IV.1.1.8 Revenue Streams .....</i>                  | 28 |
| <i>IV.1.1.9 Cost Structure .....</i>                   | 28 |
| <b>IV.2 ANALISIS KOMPETITOR .....</b>                  | 28 |
| <i>IV.2.1 Profil Perusahaan.....</i>                   | 28 |

|               |                                                   |    |
|---------------|---------------------------------------------------|----|
| IV.2.1.1      | Ruangguru .....                                   | 28 |
| IV.2.1.2      | Zenius.....                                       | 29 |
| <i>IV.2.2</i> | <i>Perbandingan Layanan Perusahaan</i> .....      | 30 |
| IV.3          | AKTOR SINAU YO .....                              | 31 |
| IV.4          | KEBUTUHAN FUNGSI DAN NON FUNGSI.....              | 32 |
| <i>IV.4.1</i> | <i>Rancangan Fungsi</i> .....                     | 32 |
| <i>IV.4.2</i> | <i>Kebutuhan non fungsional</i> .....             | 34 |
| IV.5          | BUSINESS RULE.....                                | 35 |
| IV.6          | ANALISIS PERANCANGAN APLIKASI .....               | 39 |
| <i>IV.6.1</i> | <i>Diagram Usecase</i> .....                      | 39 |
| IV.6.1.1      | Pengelolaan Akun Pengajar dan Murid .....         | 40 |
| IV.6.1.2      | Pengelolaan Proses Belajar .....                  | 43 |
| IV.6.1.3      | Kelola Kontrak Belajar .....                      | 47 |
| <i>IV.6.2</i> | <i>Analisis User Interface</i> .....              | 50 |
| IV.6.2.1      | Pengelolaan Akun .....                            | 50 |
| IV.6.2.2      | Pengelolaan Proses belajar.....                   | 54 |
| IV.6.2.3      | Kelola Kontrak Belajar .....                      | 57 |
| <i>IV.6.3</i> | <i>Activity Diagram</i> .....                     | 61 |
| IV.6.3.1      | Daftar Akun Murid .....                           | 62 |
| IV.6.3.2      | Daftar Akun Pengajar .....                        | 63 |
| IV.6.3.3      | Aktivitas Melakukan Kontrak Belajar .....         | 65 |
| IV.6.3.4      | Konfirmasi Kontrak Belajar .....                  | 67 |
| IV.6.3.5      | Aktivitas Melakukan Absensi.....                  | 68 |
| IV.6.3.6      | Aktivitas Konfirmasi Absensi .....                | 69 |
| IV.6.3.7      | Aktivitas Melakukan Pengerjaan Soal Pengajar..... | 70 |
| IV.6.3.8      | Aktivitas Melakukan Pengerjaan Soal Murid .....   | 71 |
| <i>IV.6.4</i> | <i>Diagram Deployment</i> .....                   | 72 |
| <i>IV.6.5</i> | <i>Perancangan Iterative incremental</i> .....    | 73 |
| IV.6.5.1      | Fase Insepsi .....                                | 73 |
| IV.6.5.2      | Fase elaborasi .....                              | 75 |
| IV.6.5.3      | Fase Konstruksi .....                             | 77 |
| IV.6.5.4      | Fase Transisi.....                                | 78 |

|                      |                                                       |     |
|----------------------|-------------------------------------------------------|-----|
| BAB V                | IMPLEMENTASI DAN PENGUJIAN .....                      | 79  |
| V.1                  | IMPLEMENTASI.....                                     | 79  |
|                      | <i>V.1.1 Implementasi Bisnis.....</i>                 | 79  |
|                      | V.1.1.1 Sosial Media .....                            | 79  |
|                      | <i>V.1.2 Implementasi Aplikasi.....</i>               | 81  |
|                      | V.1.2.1 Implementasi Data .....                       | 82  |
|                      | V.1.2.2 Implementasi Halaman Website.....             | 83  |
|                      | V.1.2.2.1 Halaman Murid .....                         | 83  |
|                      | V.1.2.2.2 Halaman Pengajar .....                      | 91  |
| V.2                  | PENGUJIAN.....                                        | 95  |
|                      | <i>V.2.1 Stress Testing .....</i>                     | 95  |
|                      | <i>V.2.2 Cross browser testing .....</i>              | 97  |
|                      | <i>V.2.3 Scenario Testing.....</i>                    | 99  |
|                      | V.2.3.1 Scenario Test Kelola Akun .....               | 100 |
|                      | V.2.3.2 Scenario Test Melakukan Kontrak Belajar ..... | 107 |
| BAB VI               | KESIMPULAN DAN SARAN .....                            | 117 |
| VI.1                 | KESIMPULAN.....                                       | 117 |
| VI.2                 | SARAN .....                                           | 117 |
| DAFTAR PUSTAKA ..... |                                                       | 119 |
| LAMPIRAN .....       |                                                       | 121 |
| LAMPIRAN A .....     |                                                       | 122 |
| LAMPIRAN B.....      |                                                       | 124 |
| LAMPIRAN C.....      |                                                       | 129 |
| LAMPIRAN D .....     |                                                       | 130 |
| LAMPIRAN E.....      |                                                       | 131 |
| LAMPIRAN F .....     |                                                       | 132 |
| LAMPIRAN H .....     |                                                       | 133 |