

## DAFTAR ISI

|                                                        |      |
|--------------------------------------------------------|------|
| HALAMAN PERNYATAAN KEASLIAN SKRIPSI.....               | ii   |
| HALAMAN PENGESAHAN .....                               | iii  |
| KATA PENGANTAR.....                                    | iv   |
| HALAMAN PERNYATAAN PERSETUJUAN PUBLIKASI SKRIPSI ..... | v    |
| ABSTRAK .....                                          | vi   |
| ABSTRACT .....                                         | vii  |
| DAFTAR ISI .....                                       | viii |
| DAFTAR TABEL .....                                     | xi   |
| DAFTAR GAMBAR.....                                     | xii  |
| BAB I PENDAHULUAN .....                                | 1    |
| 1.1 Latar Belakang .....                               | 1    |
| 1.2 Rumusan Masalah .....                              | 4    |
| 1.3 Tujuan dan Manfaat.....                            | 4    |
| 1.3.1 Tujuan Penelitian .....                          | 4    |
| 1.3.2 Manfaat Penelitian .....                         | 4    |
| 1.4 Ruang Lingkup Penelitian .....                     | 4    |
| 1.5 Sistematika Penulisan.....                         | 5    |
| BAB II TINJAUAN PUSTAKA .....                          | 6    |
| 2.1 Penelitian Terdahulu.....                          | 6    |
| 2.2 Dasar Teori .....                                  | 7    |
| 2.2.1 Kusta .....                                      | 7    |
| 2.2.2 Rekayasa Perangkat Lunak .....                   | 9    |
| 2.2.3 Convolution Neutral Network.....                 | 11   |
| 2.2.4 ICONIX Process .....                             | 12   |
| 2.2.5 Unified Model Language (UML).....                | 20   |
| 2.2.6 Framework dan Teknologi.....                     | 28   |
| 2.2.7 Black Box Testing.....                           | 29   |
| 2.2.8 Grad-CAM .....                                   | 31   |
| BAB III METODOLOGI PENELITIAN .....                    | 33   |
| 3.1 Analisis Aplikasi Sejenis.....                     | 33   |

|                                                                |     |
|----------------------------------------------------------------|-----|
| 3.2 Tahapan <i>Requirements</i> .....                          | 34  |
| 3.3 <i>Milestone 1: Requirements Review</i> .....              | 35  |
| 3.4 Tahapan <i>Analysis/Preliminary Design</i> .....           | 35  |
| 3.5 <i>Milestone 2: Preliminary Design Review</i> .....        | 36  |
| 3.6 Tahapan <i>Detailed Design</i> .....                       | 36  |
| 3.7 <i>Milestone 3: Critical Design Review</i> .....           | 36  |
| 3.8 Tahapan <i>Implementation</i> .....                        | 37  |
| 3.9 Pengujian Grad-CAM.....                                    | 37  |
| BAB IV HASIL DAN PEMBAHASAN.....                               | 39  |
| 4.1 Analisis Aplikasi Sejenis.....                             | 39  |
| 4.2 Tahap <i>Requirements</i> .....                            | 40  |
| 4.2.1 <i>Functional Requirements</i> .....                     | 40  |
| 4.2.2 <i>Domain Modeling</i> .....                             | 42  |
| 4.2.3 <i>Behavioral Requirements</i> .....                     | 45  |
| 4.3 <i>Milestone 1: Requirements Review</i> .....              | 71  |
| 4.4 Tahapan <i>Analysis/Preliminary Design</i> .....           | 72  |
| 4.4.1 <i>Robustness Analysis</i> .....                         | 72  |
| 4.4.2 <i>Update The Domain Model</i> .....                     | 79  |
| 4.5 <i>Milestone 2: Preliminary Design Review</i> .....        | 81  |
| 4.6 Tahapan <i>Detailed Design</i> .....                       | 82  |
| 4.6.1 <i>Sequence Diagram</i> .....                            | 82  |
| 4.6.2 <i>Class Diagram</i> .....                               | 93  |
| 4.7 <i>Milestone 3: Critical Design Review</i> .....           | 95  |
| 4.8 Tahapan <i>Implementation</i> .....                        | 96  |
| 4.8.1 <i>Coding</i> .....                                      | 97  |
| 4.8.2 <i>Pengujian Black-Box Testing</i> .....                 | 100 |
| 4.9 Pengujian Grad-CAM.....                                    | 101 |
| 4.9.1 <i>Tujuan dan Prosedur Pengujian</i> .....               | 101 |
| 4.9.2 <i>Hasil Visualisasi Heatmap</i> .....                   | 102 |
| 4.9.3 <i>Tabel Rekapitulasi Hasil Pengujian Grad-CAM</i> ..... | 104 |
| BAB V KESIMPULAN DAN SARAN.....                                | 105 |
| 5.1 Kesimpulan.....                                            | 105 |

|                        |     |
|------------------------|-----|
| 5.2 Saran.....         | 106 |
| DAFTAR PUSTAKA.....    | 108 |
| LAMPIRAN-LAMPIRAN..... | 111 |