

Daftar Isi

| | |
|--|------|
| LEMBAR PENGESAHAN | ii |
| LEMBAR PENGESAHAN ORISINALITAS | iii |
| Abstraksi | iv |
| <i>Abstract</i> | v |
| Kata Pengantar | vi |
| Ucapan Terimakasih..... | vii |
| Daftar Isi..... | viii |
| Daftar Gambar..... | xii |
| Daftar Algoritma | xv |
| Daftar Simbol | xiv |
| BAB I PENDAHULUAN | 1 |
| 1.1 Latar Belakang..... | 1 |
| 1.2 Rumusan Masalah | 1 |
| 1.3 Tujuan..... | 2 |
| 1.4 Batasan Masalah | 2 |
| 1.5 Hipotesis | 2 |
| BAB II LANDASAN TEORI | 3 |
| 2.1 <i>Data Mining</i> | 3 |
| 2.2 <i>Supervised dan Unsupervised</i> | 3 |
| 2.3 <i>Text Preprocessing</i> | 4 |
| 2.4 <i>Feature Extraction</i> | 4 |
| 2.5 <i>K-Means</i> | 6 |
| 2.6 Mencari Optimal Cluster | 9 |
| 2.7 <i>Scraping</i> | 10 |

| | | |
|--|---|----|
| 2.7.1 | <i>Selenium</i> | 10 |
| 2.7.2 | <i>BeautifulSoup</i> | 10 |
| 2.8 | <i>Website</i> | 10 |
| 2.8.1 | <i>Django</i> | 11 |
| 2.8.2 | <i>Celery</i> | 11 |
| 2.8.3 | <i>RabbitMQ</i> | 11 |
| 2.8.4 | <i>AM4Chart</i> | 12 |
| 2.9 | Database | 12 |
| BAB III PERANCANGAN DAN IMPLEMENTASI | | 13 |
| 3.1 | Gambaran Umum Sistem | 13 |
| 3.2 | Perancangan Kebutuhan Sistem | 15 |
| 3.2.1 | Perancangan Kebutuhan <i>Scraping</i> | 15 |
| 3.2.2 | Perancangan Kebutuhan Aplikasi Web | 16 |
| 3.2.3 | Perancangan Kebutuhan Pengguna | 16 |
| 3.3 | Perancangan Sistem | 17 |
| 3.3.1 | Perancangan <i>Scraping</i> | 17 |
| 3.3.2 | Perancangan <i>Text Preprocessing</i> | 18 |
| 3.3.3 | Perancangan <i>Website</i> | 18 |
| 3.3.4 | Perancangan Pencarian Tren | 20 |
| 3.3.5 | Perancangan <i>Feature Extraction</i> | 21 |
| 3.3.6 | Perancangan Pencarian Nilai K | 21 |
| 3.3.7 | Perancangan <i>Clustering k-Means</i> | 22 |
| 3.4 | Perancangan Antarmuka | 23 |
| 3.4.1 | Perancangan Tampilan Awal | 24 |
| 3.4.2 | Perancangan Tampilan <i>Loading</i> | 24 |
| 3.4.3 | Perancangan Visualisasi Produk | 25 |

| | | |
|-------------------------------------|---|----|
| 3.5 | <i>Entity Relationship Diagram (ERD)</i> | 26 |
| 3.6 | <i>Unified Model Language (UML)</i> | 26 |
| 3.6.1 | <i>Sequence Diagram</i> | 26 |
| 3.6.2 | <i>Activity Diagram</i> | 27 |
| 3.7 | Implementasi Sistem | 28 |
| 3.7.1 | Implementasi <i>Scraping</i> | 28 |
| 3.7.2 | Implementasi <i>Text Preprocessing</i> | 29 |
| 3.7.3 | Implementasi Database | 30 |
| 3.7.4 | Implementasi <i>Website</i> | 30 |
| 3.7.5 | Implementasi Pencarian Tren | 32 |
| 3.7.6 | Implementasi <i>Feature Extraction</i> | 33 |
| 3.7.7 | Implementasi Pencarian Nilai K | 34 |
| 3.7.8 | Implementasi <i>Clustering k-Means</i> | 35 |
| 3.8 | Implementasi Antarmuka | 36 |
| BAB IV PENGUJIAN DAN ANALISIS | | 38 |
| 4.1 | Pengujian Sistem | 38 |
| 4.1.1 | Pengujian <i>Scraping</i> | 38 |
| 4.1.2 | Pengujian <i>Text Preprocessing</i> | 41 |
| 4.1.3 | Pengujian Pencarian Tren | 42 |
| 4.1.4 | Pengujian <i>Feature Extraction</i> | 43 |
| 4.1.5 | Pengujian Pencarian Nilai K dan <i>Clustering k-Means</i> | 44 |
| 4.2 | Analisis | 47 |
| 4.2.1 | Analisis <i>Scraping dan Text Preprocessing</i> | 47 |
| 4.2.2 | Analisis <i>Feature Extraction</i> | 48 |
| 4.2.3 | Analisis Pencarian Nilai K dan <i>Clustering k-Means</i> | 48 |
| 4.2.4 | Analisis Tren Produk | 48 |

| | |
|---------------------------------------|----|
| 4.2.5 Analisis Persaingan Produk..... | 49 |
| BAB V KESIMPULAN DAN SARAN..... | 50 |
| 5.1 Kesimpulan..... | 50 |
| 5.2 Saran..... | 51 |
| DAFTAR PUSTAKA | 52 |
| LAMPIRAN A | 55 |
| LAMPIRAN B | 57 |